AN INSERVICE PROGRAMME IN DEVELOPMENTAL READING FOR NINTH-GRADE CONTENT AREA TEACHERS

CENTRE FOR NEWFOUNDLAND STUDIES

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CARLA ELAINE MAY MERCER

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AN INSERVICE PROGRAMME IN DEVELOPMENTAL READING FOR NINTH GRADE CONTENT AREA TEACHERS

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©

by

Carla Elaine May Mercer

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ABSTRACT

This internship project was primarily concerned with the implementation of an inservice programme in developmental reading for ninth-grade content area teachers. The major purpose of the programme was to help these teachers understand and apply teaching techniques and procedures to help their students improve their reading-study skills and to achieve subject matter objectives more completely.

Prior to implementing the inservice programme the intern assessed the present school situation regarding content area reading instruction to identify the teachers' specific inservice needs. Various sources of information were used to familiarize the intern with existing procedures, including a checklist pertaining to teachers' current practices regarding content area reading instruction and an attitude inventory designed to assess teachers' attitudes toward such instruction.

The information obtained from these sources revealed that no organized programme of reading instruction existed in the school. It was apparent from the teachers' responses that they recognized the need for content area reading instruction and were willing to provide it. However, they felt that the teaching of reading required specialized training and therefore they questioned their competence to provide such instruction.

The results also indicated that teacher support for a reading programme in the content areas was already present.

Therefore, the inservice programme was mainly concerned with developing teachers' knowledge about reading instruction and helping them achieve some degree of competence in this area. This programme was implemented through such means as formal and informal meetings, classroom demonstrations of reading skill activities and written resource materials. These inservice activities were concerned with: (1) identifying the reading-study skills which should be emphasized in each content area, (2) constructing, administering and interpreting informal reading inventories to ascertain students' reading needs, (3) helping teachers formulate procedures for teaching reading-study skills in content area classes, and (4) supplying teachers with multi-level reading lists to enable them to provide materials suited to the reading levels of their students.

Teachers' responses to a questionnaire which was designed to assess their opinions regarding the value of the inservice programme indicated that the programme was worthwhile in helping them to develop an understanding of reading-study skills and also in helping them to apply techniques for teaching these skills in regular subject matter classes.

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The author also wishes to express her appreciation to the members of her committee, Dr. W. John Harker and Mrs. M. Curtis, who provided invaluable guidance and assistance during the internship.

The inservice materials, contained in the appendices, include many of the ideas and suggestions provided by these professors in the form of class handouts. Other ideas for activities and teaching suggestions were obtained from Thomas and Robinson's Improving Reading In Every Class, Herber's Teaching Reading in Content Areas, Weiss' Reading in the Secondary Schools and Schubert and Torgerson's Improving the Reading Program.

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CHAPTER I

INTRODUCTION

In October, 1973 the intern approached the Superintendent of the Avalon Consolidated School Board in St. John's for permission to conduct an internship in one of the schools operated by the Board. Permission was readily granted and the intern was directed to the Language Arts Consultant with the Board to discuss possible projects which she might undertake. This procedure was instigated by the Superintendent to ensure that any project undertaken by the intern would be one deemed valuable and particularly relevant to a school's present situation.

The Language Arts Consultant offered three suggestions for projects. One of these, an inservice programme in the teaching of reading in the content areas was currently being devised in response to a request by elementary grade school teachers. However, this would be very limited in scope consisting of only a half-day workshop. A similar workshop was also being initiated at the secondary school level. The Consultant felt that an adequate introduction to such a topic would demand a far more comprehensive approach and suggested that this would be an extremely

worthwhile endeavour for an internship project and would be of benefit to any of the schools under the Board's jurisdiction.

It was decided at this initial meeting that the intern was agreeable to assuming this project for her internship and would arrange a meeting with a school principal who was amenable to the idea of such a project being conducted in his school. The intern contacted the principal of MacDonald Drive Junior High School as she had been a member of the English department there during the previous school year, and was consequently aware that the entire staff was very concerned about the reading abilities of their students.

Several content area teachers had approached members of the English department during that year to express their concern over the inability of many of their students to cope adequately with their content area subjects. The prevalent attitude among several of those teachers at that time was that the responsibility for the teaching of reading skills belonged in the domain of the English curriculum. The explanation usually put forth for this attitude was that the time allowed teachers to teach course content did not permit the inclusion of additional reading skills. Of those teachers interested in improving their students' reading abilities through reading instruction in the content areas, several felt inadequate in this regard due to lack of preparation or

knowledge about reading pedagogy.

The principal of the school informed the intern that similar discussions were still in evidence and the topic had been broached in several staff meetings throughout the present school year. Consequently, he was of the opinion that content area teachers would welcome the opportunity to participate in an inservice programme designed to familiarize them with methods of teaching reading skills through content area instruction. This opinion was verified when discussed with the department heads of the various content areas, who in turn enlisted the support and co-operation of the other staff members.

It was decided after several initial meetings that the four department heads of English, mathematics, science and social studies and one other teacher from each of these areas would participate in the inservice programme. It was stressed by the intern at this time that participating teachers must be willing to devote a substantial amount of their professional time. Hence, the eight teachers were selected by the principal on the basis of expressed interest and a willingness to contribute their time for the duration of the inservice programme. It was also stipulated that these teachers should all be teaching a common grade level so that the compilation of inservice materials could be geared toward this level.

After the initial arrangements had been finalized, the principal requested that the intern present her proposed

programme to the entire teaching staff. This presentation was scheduled for a regular staff meeting on March 20, 1974. In this meeting the intern outlined the procedures she proposed to follow during the inservice programme. She also made an initial attempt to develop the understanding that content area subjects demand specific reading skills uniquely related to each subject area. The intern endeavoured to promote this understanding by giving a presentation based on short selections taken from each content area textbook and identifying the characteristics which made one selection, problem solving in mathematics, unique from the writing patterns of other selections. There was little opportunity for discussion in this meeting as it was designed primarily to give the entire school staff an opportunity to ascertain the general format and objectives of the internship.

Teachers were informed at this meeting that the internship would commence on April 22, 1974 and terminate when school closed in June. In the interim, teachers concerned with the inservice programme were requested to devote some consideration to the concept of content area reading instruction within the framework of their particular subject speciality.

PURPOSE OF THE INTERNSHIP

The purpose of this internship was to assist two ninth-grade teachers from each of four subject areas at

MacDonald Drive Junior High School to devise and implement a programme for teaching reading and study skills in their respective content areas. The intern worked with two of the ninth-grade teachers from each of the English, mathematics, science and social studies departments to devise procedures and techniques whereby the teachers could assist students in acquiring the skills necessary for better understanding of their course content.

More specifically, the objectives of the internship were:

1. To encourage content area teachers to accept the notion that their courses may provide for the simultaneous teaching of course content and reading skills and to demonstrate that teaching course content and the appropriate reading and study skills actually facilitates more efficient learning of the content.

2. To provide content teachers with practical information, techniques and procedures to help their students acquire the skills necessary for the understanding and adequate study of the materials requisite to each content area.

OVERVIEW OF THE REPORT

Chapter II pertains to an assessment of the school's present situation regarding reading in the content areas. This chapter explores various sources of information, including an assessment of the school's facilities and

resources, a description of the existing school programmes in English, mathematics, science and social studies, an outline of present teacher practices related to reading in the content areas and an assessment of teacher attitudes toward such a programme. A description of the general characteristics of the student body is also included. Chapter III presents a rationale for having a programme of reading in the content areas and a summary of related research and professional literature which indicates the importance and validity of such a programme. Chapter IV deals with a description of the procedures which the inservice programme followed. An evaluation of the internship followed by recommendations to the school is contained in Chapter V.

CHAPTER II

ASSESSMENT OF THE SITUATION

The intern felt that the first step toward making this programme a meaningful, worthwhile inservice activity was the identification of the teachers' inservice needs. Therefore, prior to implementing the inservice programme several steps were taken to familiarize the intern with the existing programmes in each of the four content areas. In order to place these programmes in meaningful perspective it was necessary to view them within the context of the school, its facilities and its resources. Also, although the inservice was specifically oriented toward content area teachers, any inservice education in reading must ultimately be viewed in terms of improving the reading instruction of students. Hence, to maximize teacher involvement and commitment to improving reading instruction the intern deemed it essential to become familiar with the general characteristics of the student body so that the inservice could become as relevant as possible to the teachers' present situation. Finally, to further delineate the specific directions the inservice should follow, information was gathered pertaining to each teacher's current practices regarding content area reading

instruction and also each teacher's attitudes toward such instruction. The insight attained from gathering this information assisted the intern in the identification of significant inservice needs, the establishment of appropriate goals, the formulation of specific objectives, the selection of activities and the scheduling of sessions.

It should be pointed out that this survey was less of a formidable task than it appears. The intern, having taught in this school the previous year, was quite familiar with most aspects of the school's operation and was generally acquainted with the programmes in most curriculum areas. Also, many of the present grade eight and nine students had been taught by the intern during that school year. Hence, the intern's main concern was to become more knowledgeable about present content area programmes and changes that had occurred during her absence. To assist her in this regard the principal and department heads made available reports for the four content areas in which she would be working. These reports gave detailed accounts of the educational philosophy, programme descriptions, teacher deployment and teaching strategies pertaining to each content area. They also provided an account of what had transpired during the past two years, outlining any changes which had occurred and indicating proposals for future curriculum development. These reports have since been compiled by the principal and are contained in the report "MacDonald Drive Junior High: The First Two Years" (1974).

THE SCHOOL: FACILITIES AND RESOURCES

MacDonald Drive Junior High School, one of the thirty-five schools under the jurisdiction of the Avalon Consolidated School Board, commenced operation in September, 1972. In this, its second year of operation, the school population consists of approximately nine hundred sixty-five students and forty teachers. The grade composition is eight classes in each of grades seven to nine for a total of twenty-four homerooms. With the inclusion of specialist areas, actual teaching stations number thirty-eight.

All scheduling, including that for co-curricular activities, is modular oriented and operates on a six-day cycle basis. The concept of modular scheduling is facilitated by the design of the physical plant. For example, each department on the second floor is "clustered" around the instructional materials centre and consists of a number of classrooms, a teacher preparation area and a small-group discussion room. Several of these classrooms are separated by folding partitions thus making provision for both small and large group instruction. The English, mathematics and social studies departments are located on the second floor. The science department is situated on the first floor and is of similar design except that the conventional classroom concept has been dispensed with and is replaced by three laboratories. Each laboratory is equipped to facilitate

instruction in one of the four major branches of science: physics, chemistry, biology and earth science. In addition to the French and special education departments, the school also contains rooms for art, music, industrial arts, home economics, typing and health and guidance. The school also has a large gymnatorium, a student common room, a staff lounge, and a cafeteria as well as the necessary administrative offices.

The instructional materials centre is quite large, containing a large selection of print materials, both hardcover and paperback, and several sets of encyclopaedias and related reference materials. Recreational reading materials represent an equitable percentage of total resources. However, while these cover a wide range of interest levels there is a lesser amount of material of the high-interest, low-vocabulary variety. Similarly, while there is a wide variety of books supplementing the material covered in the various curriculum areas, these books do not always represent a wide range of reading levels. This is again particularly noticeable when students who read below grade level are considered.

Table I shows the results of the application of the Fry Readability Graph (1972: 232) to a number of supplementary social studies materials, selected by the intern because of their relevance to the present social studies programme. The Fry Readability Graph was selected from the several readability formulas available because, unlike

the other methods, it does not require excessive working time, nor does it necessitate difficult computations. Although it is a fast and simple method of determining readability, it does however, correlate highly with more complicated and time consuming formulas such as the Dale-Chall, SRA, Flesch and Spache (Fry, 1972: 234).

Table I

Percentage of Books Classified by Grade Level as Determined by the Fry Readability Graph

Readability	Number of Books	Percent at each Level
6th grade	5	6.4
7th grade	4	5.1
8th grade	19	24.3
9th grade	10	12.8
10th grade	12	15.4
11th grade	8	10.3
12th grade	8	10.3
college	12	15.4

While a cursory investigation of such materials does not demonstrate significant discrepancies in the amount of material written at each grade level, an analysis of the information received from application of a readability formula demonstrates that a disproportionate number of books were suitable only for those students reading at or well above grade level. Of the seventy-eight books studied,

6.4 percent were written at a grade six level, 42.2 percent were written at a junior high school level and 51.4 percent were written at or above a grade ten level. Hence, for the student presently in grade seven and reading below grade level only 6.4 percent might be suitable while the remaining 93.6 percent would be too difficult.

The instructional materials center houses all audio-visual equipment which is available to teachers upon request. A variety of such equipment is at the teachers' disposal including several overhead, film, opaque and filmstrip projectors, record players, cassette and reel-to-reel recorders and two video-tape machines. Each teaching department has a supply of relevant filmstrips, slides, cassettes and other pertinent material. Provision is made in the instructional materials centre for students to view or listen to materials in individual carrels or in the small group seminar rooms. Upon teacher request, films can be borrowed by the school librarian from the Department of Education, the National Film Board or the Avalon Consolidated Media Center at Bishop's College.

THE STUDENTS

In attempting to assist teachers to implement a developmental reading programme the intern's efforts were specifically directed toward the content area teachers. However, as such a programme focuses on the reading and study skills required by students, several student

characteristics also had to be considered.

The proposed programme described in this report would be taught to students in next year's grade nine classes. It was also anticipated that, with the necessary modification, many of the suggested ideas and activities could be implemented in next year's grade seven and eight classes. This was quite feasible as the eight teachers the intern worked with were presently teaching both grades eight and nine. Hence, it was necessary for the intern to be acquainted with the characteristics of the student body which would affect the programme these teachers would be instituting in the next school year. It was also hoped that the sources used by the intern to gather such information could be used by these teachers in the future to give them a more specific measure of assessing the characteristics, reading levels and needs of their students.

Formal and informal sources of information were used as measures: (1) to obtain students' present reading achievement, (2) to ascertain the areas of student weaknesses in necessary reading skills to be emphasized in each content area, (3) and to determine the appropriate level of instruction and instructional and resource materials for individual students and for groups of students.

Formal Sources of Information

Cumulative records. The school records revealed that the school population is drawn from urban St. John's

(approximately eighty percent) and from the three adjacent rural communities of Pouch Cove, Bauline and Portugal Cove. A major percentage of the student body had been given a general achievement test during the previous school year. The Canadian Test of Basic Skills had been administered to the majority of the incoming grade seven students in grade six, and the Gates-MacGinite had been given to grade eight and nine students. The intern had personally administered approximately one hundred and fifty of these tests to her students during that year.

Scores on these tests demonstrated a wide range of general reading achievement, extending from grade two up to grade twelve. However, while these scores gave a fair indication of approximate reading ability, they did not provide content area teachers with specific information regarding students' present strengths and weaknesses in the particular reading-study skills pertinent to each subject. The intern decided, therefore, to acquaint these teachers with a measure which would provide them with this specific information.

Informal Sources of Information

Group Reading Inventories. The group reading inventories constructed by the intern and teachers followed the guidelines provided by Shepherd (1973) in his sample inventories for each content area. These inventories are diagnostic survey tests based on the textbooks presently

being used in each content area. This type of test was chosen by the intern because it had several advantages over a formal standardized instrument. These advantages are as follows: (1) as the inventories are teacher constructed they can be designed to contain those reading-study skills deemed most essential for students to cope adequately with their present content area textbooks, (2) an informal inventory appraises the individual student's level of competence on a particular reading selection without reference to what other students can do, (3) as the student is required to read passages from his own content area textbooks, such inventories will assess his ability as to whether he can or cannot read them adequately, (4) an analysis of the results of each inventory identifies the specific reading-study skills in which each of the teacher's students require additional assistance, (5) as textbooks in any programme change, the inventory can be easily modified to adapt to the new text, (6) the use of an informal inventory dispenses with the necessity of purchasing expensive standardized instruments.

It was neither necessary nor feasible for the intern to administer these inventories to all of the students of the teachers with whom she was working. Rather the role of the intern was to instruct and assist each teacher in the construction of an inventory in each content area, and to demonstrate its administration to one of each teacher's classes. Once this had been accomplished the intern could

then aid each teacher in the scoring and interpretation of the results.

Table II is included to demonstrate the form of the tabulation of results. It represents a class profile of one of the grade eight heterogeneous science classes. Each X represents a skill in which a particular pupil is deficient. A student is considered to be deficient in any one specific skill if he answers more than one out of three questions incorrectly, or more than two incorrectly where there are more than three questions measuring a specific skill. According to Shepherd (1973), while these inventories do not establish grade levels, anyone scoring above 90 percent may be considered to be reading material too easy for him. Anyone scoring below 65 percent may be considered to be reading material too difficult for him. If the material is suitable, the scores should range between 70 - 90 percent.

Table II

Class profile of students' strengths and deficiencies in each skill as measured by the Science Group Reading Inventory

Student	Percentage	Parts of Book	Library	Vocabulary	Main Ideas	Details	Following Directions	Drawing Conclusions	Application	Formulas, Symbols
1	56			X	X		X	X		
2	22		X	X	X	X	X	X	X	
3	22	X	X	X	X	X		X	X	
4	78	X								X
5	89							X		
6	44			X	X		X	X	X	
7	56			X	X			X	X	
8	78		X				X			
9	100									
10	67		X		X					X
11	89							X		
12	22	X	X	X	X	X	X		X	
13	100									
14	78				X			X		
15	78							X	X	
16	44			X		X	X	X	X	
17	89	X								
18	78				X				X	
19	89			X						
20	33		X	X	X	X	X		X	
21	78		X		X					
22	78			X					X	
23	67	X			X			X		
24	89		X							
25	89							X		
26	56	X		X		X			X	
27	89			X						
28	67			X	X			X		
29	78				X			X		
30	44			X	X	X		X	X	

An analysis of the information provided by this inventory revealed that, of the thirty students tested, the present grade eight science textbook was suitable for eighteen or 60.0 percent of the total class, too easy for two or 6.7 percent and too difficult for ten or 33.3 percent. Those students belonging in the third category demonstrate need of further diagnosis. For the purposes of the content area teacher, it should be assumed that such students need easier material.

Further information is also easily obtained from the class profile. When reading the summary chart horizontally, the skill needs of each individual are shown. For example, pupil one demonstrates deficiencies in vocabulary, main ideas, following directions and in drawing conclusions. When reading the profile vertically, class patterns are indicated. For instance, only seven students show the need for specific instruction in following directions while fifteen students show a weakness in getting the main idea. Therefore, a clear rationale for grouping according to need is provided and the skill instruction needed for the class is quite clear.

- PRESENT CONTENT AREA PROGRAMMES

English Programme

The English programme, at all grade levels, emphasizes the integration of the various components of the language arts. These teachers recognize that within

any one grade level students are not capable of the same work, either through the same materials or with the same level of skill development. They have, therefore, developed tri-level programmes at each grade level. At the grade nine level these programmes are composed of the following "cores": Understanding Literature (Gordon, White and Wofford, 1970) for pupils demonstrating skills beyond the grade level; Vanguard (Pooley and others, 1967) for pupils slightly below, at, or slightly above the grade level; and for pupils below the grade level Voices in Literature, Language, and Composition I (Cline, Williams and Donlan, 1969).

Understanding Literature is an anthology containing topics such as mythology, the formal essay and Shakespeare. Since the pupils in this programme have mastered the basic language arts skills, the emphasis here is on literary concepts. In addition, the grade nine pupils in this programme work with the SRA Basic Composition Series III, Part II, Description, (Hoth, Bergman and Budde, 1964).

Vanguard is primarily an integrated reading and literature course. This programme is taken by approximately 65 percent of the grade nine students and is essentially a developmental reading programme with an introduction to basic literature concepts. Vanguard students also spend approximately one fourth of their time in the SRA Basic Composition Series III, Part I, Narration.

The primary purpose of Voices in Literature,

Language and Composition I is to give the student extra help in skill development and to de-emphasize more complex concepts so that the pupil's basic need for success is met.

In addition to these "core" programmes provision has also been made for "extra units" which enable teachers to select specific materials suited to their pupils. At the grade nine level these extra units consist of: (1) a magazine entitled Scholastic Voice (Burns, 1974) to which all grade nine pupils subscribe, (2) a unit on multi-media entitled The Mind Benders (Teringo and Sweet, 1969) which is compulsory for all grade nine students. A number of optional units are also available to be used at the teachers' discretion: (1) class sets of The Winston Dictionary of Canadian English, Intermediate Edition (Paikeday, 1970), (2) a poetry anthology entitled Truth and Fantasy (Weber and Hogan, 1972), (3) Incentives (Livesey and Archer, 1970) suggesting hundreds of ideas for both oral and written language activities for individuals and small groups, (4) a multi-media approach to language and composition entitled Language Is (Coman and Shephard, 1971). Several other optional units are also available.

Mathematics Programme

The mathematics programme follows a similar organizational structure at all three grade levels. For example, at the grade nine level, four of the eight classes meet in the mathematics area at one time. Once there the

homeroom structure disappears and the students are assigned to groups in accordance with their mathematical ability. For the total grade nine population, there are approximately 28 percent in the top level programmes, 58 percent in the average level programmes and 14 percent in the low level programmes. The top group has the largest number of students per class (forty-five —— fifty) as the teachers reason that the better academic students can function effectively in a large group. As many of these students can work fairly independently, the mathematics seminar room is frequently utilized by small groups of eight to ten of these students. Their course consists of Exploring Geometry (Keedy and others, 1967) and Exploring Elementary Algebra (Keedy and others, 1967). These students are expected to deal with the structure of mathematics, to use abstractions and to be able to verbalize their ideas. In addition, they are all assigned independent projects which require resource center research on such topics as mathematicians mentioned in their text, physical models, or the history of some concept they have studied. These projects are completed outside class time after students have been given a complete list of all mathematics related books in the resource center and they have spent a period or two with their teachers browsing through these materials.

The average students' course consists of Modern Basic Geometry (Jurgenson, Maier and Donnelly, 1973) and Exploring Elementary Algebra (Keedy and others, 1967). The latter

text is the same one as used with the top group but fewer topics are covered and in less depth. These classes are assigned to rooms separated by demountable partitions so that classes can be occasionally combined into large groups where a team teaching approach is utilized.

The course for the weaker students consists of a series of consumable booklets entitled Individualizing Mathematics (Foley and others, 1971) which develops various topics in basic and consumer mathematics. These students meet in classes with only twenty to twenty-five students thus giving the teacher relatively more time for the students who need most assistance. For these students the emphasis is on individual help primarily in the mastery of basic skills.

Science Programme

The science course in all grades is designed to give students an exposure to the four major branches of science: physics, chemistry, biology and earth science. The grade nine textbook is entitled Exploring Science, Stage 3 (Thurber and Kilburn, 1971) and it is a continuation of Stages 1 and 2 which are used with grades seven and eight respectively. In each grade the year's work is divided into units corresponding to each of the branches of science and during the year students spend an approximately equal amount of time in each area. Provision is also made for additional, supplementary or enrichment topics which the students have

some part in choosing, thereby ensuring that these topical studies are within the range of their major interests.

Two heterogeneous homeroom classes of students, upon entering the science area, are paired and regrouped into A and B units, the A units being those with the more successful academic background. However, both groups use the same textbook and the course design for each group is not distinctly different. The major differences lie in the depth and extent to which each topic is explored and in the work standards expected in laboratory and testing situations.

The teachers' rationale for this approach is that while grouping can be used to advantage, the nature of the science course does not make grouping absolutely essential. Rather the programme is essentially based upon student centered projects and the inquiry approach, especially for the more academic groups where the teacher can act solely as an organizer or co-ordinator of the group projects or laboratory experiments. For the less able students, a more structured approach is required where more time is given to class instruction supplemented with lab demonstrations followed by student lab work.

Social Studies Programme

The social studies programme is approached as two separate disciplines at each grade level, taught by two different teachers. At the grade nine level the geography course consists of a textbook entitled Canada: A New

Geography (Krueger and Corder, 1968) plus an additional unit on map interpretation which is a continuation of similar units taught in grades seven and eight. The basic objective of this course is to describe and explain the interrelationship between the various human and physical phenomena on the earth's surface. The course is designed to explain man's relationship to his physical and cultural environment and to indicate how this relationship differs from place to place.

The grade nine history text is entitled Canada in One World (Rothney, 1966). However, the nature of this text has necessitated the organization of a course of study whereby the text is used only as a background reader. The course is supplemented by a set of notes that has been prepared by the teachers concerned to correspond to the course outline. A magazine entitled Senior Scholastic (Nikolaieff, 1974) is also an integral part of the grade nine course of study.

All grade nine students receive three periods of geography and four periods of history per six day cycle. At present there is no ability grouping and the degree of indepth study is dependent upon the particular class. Thus all teaching in social studies is done on a heterogeneous homeroom basis except when two classes are occasionally combined for team teaching, large group instruction or the viewing of films.

It should be noted here that the programmes described in each of these content areas are those presently in operation. In some cases, major changes have been planned to be implemented when school re-opens in September. These changes have not been outlined here as the intern was working with those programmes presently in existence. However, the intern was able to provide several suggestions in conjunction with the proposed changes which were an aid to the teachers in setting up new programmes. For example, the social studies department will be instituting ability grouping in September and was therefore particularly interested in learning about reading inventories and acquiring some multi-level reading material. As these topics were an integral part of the procedures of the inservice programme carried out by the intern they are outlined in a later section of this report.

THE TEACHERS

The teachers the intern worked with had teaching certificates ranging from grade four to grade seven. With the exception of one, all teachers were presently teaching the subject speciality in which they had received academic training. Four of the teachers had taken one course in reading during their university training, one had taken two courses in reading and three had received no such instruction. All eight of these teachers were presently teaching courses in grades eight and nine and five were also teaching grade

seven.

Prior to the actual implementation of the inservice programme it was essential for the intern to ascertain the extent to which these teachers felt that they were teaching some aspects of reading skill development in their respective content areas. The first step in the development of any secondary reading programme must be to evaluate current practices in the school and also to become aware of any differences or confusions existing between members of the school staff. The intern, therefore, collected the teachers' responses to a checklist involving their current practices related to reading instruction. The checklist which the intern administered was the one used by Olson and Rosen (1967) in a study of teacher practices in reading.

Table III shows the checklist that was employed and the responses (in percent) of the teachers to each of the three choices on the rating scale.

Table III

Teacher Responses to Practices Related to Reading

Practices	Percent of Responses: Almost Always	Sometimes	Seldom or Never
1. Text material used is suited in difficulty to the reading levels of students.	25.0	75.0	0.0
2. Students are encouraged through assignments to read widely in related materials.	75.0	12.5	12.5
3. At the beginning of the year, adequate time is taken to introduce the format of the text and to discuss how it may be read effectively.	62.5	37.5	0.0
4. The teacher is aware of the special vocabulary and concepts introduced in the various units.	75.0	25.0	0.0
5. Adequate attention is given to vocabulary and concepts introduced in the various units.	75.0	25.0	0.0
6. Provisions are made for checking on extent to which important vocabulary and concepts are learned, and reteaching is done where needed.	50.0	50.0	0.0
7. The teacher knows the special study skills involved in the subject and teaches them.	25.0	37.5	12.5 25.0 (no response)

Table III (continued)

Practices	Percent of Responses: Almost Always	Sometimes	Seldom or Never
8. The course content is broader in scope than a single textbook.	87.5	12.5	0.0
9. The assignments are made clearly and concisely.	87.5	12.5	0.0
10. Students are taught to use appropriate reference materials.	50.0	50.0	0.0
11. Adequate reference materials are available.	62.5	37.5	0.0
12. Plenty of related informational books and other materials are available for students who read below-grade level.	0.0	75.0	25.0
13. Plenty of related informational books and other materials are available for students who read above-grade level.	37.5	62.5	0.0
14. The teacher takes advantage of opportunities that may arise to encourage students to read recreational as well as informational reading matter.	62.5	37.5	0.0
15. The teacher helps the poor reader to develop adequate reading skills.	12.5	62.5	25.0
16. Readings from various textbooks are provided for those who cannot read the regular text.	0.0	75.0	25.0

Table III (continued)

Practices	Percent of Responses: Almost Always	Sometimes	Seldom or Never
17. Students are grouped within the classroom for differentiated instruction.	12.5	50.0	37.5
18. The teacher knows the reading level of the textbook(s) being used.	62.5	12.5	25.0
19. The teacher knows the reading ability of the students from standardized tests, other evaluative materials, and/or cumulative records.	50.0	12.5	37.5
20. The teacher illustrates the dominant writing pattern of a given content area.	37.5	37.5	25.0

It would appear from the results of this checklist that most teachers felt that they were doing a fairly adequate job in reading skill development in their classes. Responses to items numbered 1, 3, 4, 5, 6, 8, 9, 10, 11, 13 and 14, representing 55.0 percent of the total number of items, indicate that all the teachers are teaching some aspects of reading skill development almost always or some of the time. However, there appear to be contradictions in some of the practices employed by the teachers. For example, whereas item number 1 indicates that 25.0 percent of the teachers almost always and 75.0 percent sometimes use text material suited in difficulty to the reading levels of students, item number 16 indicates that 25.0 percent of the teachers seldom or never provide readings from other textbooks for those who cannot read the regular text. If we couple this information with that gained from items numbered 18 and 19, we find that 37.5 percent of the teachers only sometimes, seldom or never know the reading level of the textbook(s) being used, and 50.0 percent do not always know the reading ability of their students.

It is also apparent that at least one aspect of reading skill development is usually neglected by most teachers. Responses to item number 7 show that only 25.0 percent of the teachers almost always know the special study skills involved in their subject and teach them. Responses to item 15 revealed that 25.0 percent of the teachers seldom or never and 62.5 percent only sometimes help the poor reader develop adequate reading skills. With

regard to grouping students within the classroom for differentiated instruction, responses to item 17 show that this is seldom or never practised by 37.5 percent of the teachers.

It would appear, therefore, that certain practices employed by the teachers were sometimes inconsistent with some of the information available to them. Also, the use made of such information in actual classroom practice indicates some degree of confusion and a lack of application.

The responses to this checklist coupled with the intern's knowledge of present programmes and teaching practices indicated that no organized reading programme presently existed in the school. The teaching of reading depended more on the individual teacher rather than being a part of programme policy. While some aspects of reading skill development obviously were being taught by some teachers, such teaching was sometimes incidental. The intern therefore felt that her primary objective in this regard would be to promote teacher awareness of the necessity for having an organized reading programme and then to assist the teachers in its development.

However, before a developmental reading programme was instituted the intern felt that teacher support for such a programme must be assessed. To gather this information the intern administered an attitude inventory to the eight teachers which was designed to measure the direction and intensity of the teachers' attitudes toward the teaching of

reading in the content areas. The inventory which the intern employed was developed by Smith and Otto (1969) in an exploratory study assessing teacher attitudes toward content area reading instruction. The results of this inventory were used by the intern to help her adapt her procedures to the various teachers' attitudes.

Table IV shows the responses (in percent) of the teachers to each of the five categories for each item.

Table IV

Percent of Teacher Responses in Each Category of the Attitude Inventory

Item	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1	0.0	0.0	12.5	25.0	62.5
2	0.0	12.5	50.0	37.5	0.0
3	37.5	37.5	25.0	0.0	0.0
4	12.5	50.0	12.5	12.5	12.5
5	0.0	12.5	0.0	37.5	50.0
6	0.0	12.5	0.0	37.5	50.0
7	0.0	12.5	25.0	50.0	12.5
8	0.0	0.0	37.5	37.5	25.0
9	25.0	50.0	12.5	0.0	12.5
10	0.0	12.5	25.0	50.0	12.5
11	37.5	62.5	0.0	0.0	0.0
12	12.5	37.5	0.0	37.5	12.5
13	25.0	0.0	75.0	0.0	0.0
14	37.5	12.5	25.0	12.5	12.5

For discussion purposes Strongly Agree — Agree and Disagree — Strongly Disagree responses are collapsed.

The responses indicate that the overall feelings of the teachers toward the teaching of reading skills is essentially positive. Strong trends, all in a positive direction, are apparent in the responses to the following items:

1. In the secondary school the teaching of reading should be the responsibility of reading teachers only. DISAGREE (87.5 percent)

3. The teaching of reading skills can be incorporated into content area courses without interfering with the major objectives of those courses. DISAGREE (75.0 percent)

4. Any secondary school teacher who assigns reading should teach his or her students how to read what is assigned. AGREE (62.5 percent)

5. With rare exceptions, students should know what there is to know about reading before they are permitted to leave the elementary school. DISAGREE (87.5 percent)

6. Only remedial reading should be necessary in the secondary school and that should be done by remedial reading teachers. DISAGREE (87.5 percent)

7. Teaching reading is a technical process that secondary school teachers generally know nothing about. DISAGREE (62.5 percent)

8. Secondary school teachers cannot teach reading without special materials designed for that purpose. DISAGREE (62.5 percent)

9. Teaching reading is a necessary and legitimate

part of teaching any content course in the secondary school. AGREE (75.0 percent)

10. Teaching reading takes all the fun out of teaching at the secondary school level. DISAGREE (62.5 percent)

11. Every secondary school teacher should be a teacher of reading. AGREE (100 percent)

There were slight tendencies to disagree with item 2 — "Secondary school teachers can teach reading effectively without special university courses in methods of teaching reading." This item seems to reflect some indecision about the competency of secondary teachers to teach reading skills without some special training. However, some inconsistency is apparent when these responses are compared with those to item 14 — "Content area teachers in the secondary school are probably more competent to teach the reading skills needed for their subjects than special reading teachers." Responses to this item show 50.0 percent of the teachers agreeing with this statement. There were also slight tendencies to agree with item 13 — "Integrating the teaching of reading with the teaching of specific content can be as exciting for the content area teacher as teaching content only."

There was no clearly established trend in the responses to item 12 — "At the secondary level students want to learn content, not how to read." Responses to this item are evenly divided between Agree and Disagree.

Taken together, the attitudes reflected by the teachers' responses to the majority of the items seem to demonstrate a willingness to accept responsibility for making the teaching of reading skills an integral part of content area instruction. It appears that in general the teachers recognize the necessity for continuing reading instruction at the secondary level. While some hesitancy is evident as to the degree of competency they feel they possess, this was a reaction expected by the intern. The intern's primary purpose in administering the inventory was to assess teachers' support for a reading programme. Since the results of the inventory indicated that such support was present she could then attempt to develop teachers' knowledge about reading instruction so that they could develop some degree of competency in this area.

CHAPTER III

RATIONALE FOR THE INTERNSHIP PROJECT

There has been a growing concern among Newfoundland educators in recent years over the high percentage of students dropping out of school or repeating grades. Kennedy (1965: 87), investigating the drop-out problem at the seventh, eighth and ninth grade levels in Newfoundland schools during the period 1954-64, found that one of the major reasons for early school withdrawal was failure and repetition of grades. It is generally accepted that this may result partially from the fact that some students experience serious reading difficulties at the secondary school level (Penty, 1956). A recent study of grade eight students in Newfoundland, initiated by the Royal Commission on Education and Youth for Newfoundland and Labrador (Warren, 1967: 37), indicated significant weaknesses on reading comprehension and arithmetic problem-solving tests. The ability to comprehend content materials effectively determines to some extent the success students will achieve at the secondary school level.

Teachers at the secondary school level often assume that all reading skills necessary for adequate understanding of content materials should have been taught at the elementary level. However, a study of the curriculum guide for English

(1973: 49), grades seven to nine, shows that the current expectations are for teachers to share responsibility for "assisting each student to become as competent in reading as possible. . . .The subject teacher should assume responsibility for teaching those skills which are unique to his particular subject." Students at the secondary level are confronted with increasingly complex and abstract material, demanding skills which were not necessary to cope with the largely narrative materials of elementary grades. Students are required to be able to adapt previously learned skills and to acquire new skills to meet the demands of content material. These skills require instruction continuing beyond the elementary school level if students are to achieve successfully at each grade level.

The content materials not only necessitate a higher degree of student competence in general reading skills but also require specific reading skills uniquely related to each content area. These skills are dependent upon the discourse of the subject matter. Smith (1964: 31-37, 97-102) identifies definite patterns of writing in each subject area. Each particular subject also presents terminology unique to that field, especially science, where the vocabulary is often complex and technical. To read and study effectively in each subject area the student must be able to use certain skills which are related in varying degrees to that particular subject.

Teachers at present are seldom prepared to teach the reading skills characteristic of their areas. An examination of the literature suggests several causative factors. First, teachers tend to teach the way they were taught and are reluctant to attempt new methods of instruction. Second, content teachers seldom have training in teaching reading and study skills. Third, teachers have assumed that the teaching of reading skills and the teaching of course content are separate processes. They view the teaching of reading as the addition of something extra to an already overloaded curriculum.

One of the foremost objectives of education is to equip students with the skills necessary for independent learning. Information and knowledge are increasing at such a tremendous rate that the goal of teaching all the content of any particular discipline is an unrealistic one. Instead, teachers should place less emphasis on content and devote increasing attention to the development of concepts and to the skills necessary to study each discipline independently.

RELATED LITERATURE

Relationship between General and Specific Reading Abilities

There is some indication that a relationship exists between general reading ability and the degree of achievement that students will experience in the various content areas.

Several studies, in attempting to establish this relationship, have concomitantly endeavoured to determine the extent to which specific reading competencies would be predictive of successful achievement in certain academic areas of secondary schools.

One study carried out by Artley (1944) attempted to determine the relationships existing between general reading comprehension and reading comprehension in the social studies area, and also to assess the extent to which both general and specific reading comprehension affect achievement in social studies. The data for this study was obtained by administering a series of tests to 242 eleventh grade pupils in the Williamsport High School, Williamsport, Pennsylvania. The tests consisted of measures of general reading comprehension, certain aspects of reading comprehension in the social studies, informational achievement in the social studies and non-verbal intelligence.

The correlation coefficient between general reading comprehension and reading comprehension of a specific nature (social studies) was .79. With correction for attenuation this correlation was increased to .86, and reduced to .75 when the effect of intelligence was partialled out. On the basis of his findings Artley concluded that a relationship does exist between reading comprehension of social studies and general reading comprehension. However, he noted that the absence of a perfect correlation provides evidence that a degree of specificity exists in factors

relating to reading comprehension in social studies. Artley further concluded that tests of ability to interpret, to obtain facts and to organize appear to be the best predictors of the ability to comprehend social studies material.

The results of the above study are substantiated by the two separate but complementary studies of Maney (1958) and Sochor (1958). Using the same population of 513 fifth-grade students they investigated the relationships between literal and critical reading comprehension in science (Maney) and social studies (Sochor) materials and between general reading comprehension as determined by a reading survey test and that appraised by their own measures of literal and critical reading. Verbal intelligence was measured by the Pinter General Ability Test. They found correlations at .75 between general reading and literal reading in science and .76 in social studies. With intelligence held constant, the correlations were .35 and .41. Correlations between general reading comprehension and critical reading were .60 in science and .64 in social studies. These were reduced to .11 and .17 respectively with intelligence held constant. Correlations between literal and critical reading were .67 in science and .61 in social studies (.34 and .23 when intelligence was held constant). These findings led the authors to conclude that proficiency in critical reading of science and social studies cannot be predicted from scores on literal reading tests or on "general" reading tests and that proficiency

in literal reading of science and social studies may only be partially predicted from such tests. They further concluded that critical reading ability in science and social studies consists of relatively separate reading abilities and recommended systematic and direct instruction to develop proficiency in each skill.

Perhaps the most persuasive argument put forth for the necessity of teaching reading in the content areas is the research evidence demonstrating that effective reading in each subject area is dependent upon certain abilities related in differing degrees to each particular subject. McCallister (1930) designed a study to analyse the reading activities involved in the study of American history, mathematics and general science at the seventh and eighth grade levels. These activities were identified by studying the techniques of instruction and the materials employed in each subject. Reading difficulties the students encountered in performing these reading activities were identified through analysis of their written assignments.

These analyses revealed fifty reading difficulties distributed among the three subject areas. Several of these were peculiar to the various subjects. However, while some difficulties were caused by the nature of the subject matter, others grew out of the techniques used by the teachers. These findings led the author to conclude that "the reading difficulties identified by this investigation demonstrate the need for giving special attention to reading activities

in connection with the teaching of each content subject" (McCallister, 1930: 200). He further concluded that the reading activities demanded for effective reading of a subject depended on the teaching techniques employed in teaching that subject and the kinds of reading materials assigned.

A further study by Shores (1943) supports and further elaborates the conclusions reached by McCallister. Shores conducted an investigation to study the relationship between certain reading and study skills and reading comprehension of historical and scientific materials at the ninth grade level. A number of tests, including tests of basic reading and study skills and reading scales in literature, science and history were administered to the entire ninth-grade population of 380 students in a Missouri city junior high school. The factors of mental age and ability to read literature were controlled to allow comparison between good and poor readers for difference in mean ability on each of the measured skills in science and history materials.

An analysis of the data revealed that several skills and abilities are related at the .01 level of significance to the ability to read scientific and historical materials. Several skills were also identified as being significantly related to the ability to read materials in both science and history. These findings led Shores to conclude that by the time students reach ninth grade their proficiency is

specific to the subject they are studying.

Swenson (1942) devised a study designed to measure the inter-relationships between three aspects of reading skills, namely, comprehension, vocabulary and rate and the ability to read two different types of materials. One type of material was of a general narrative nature and the other was representative of that used in school science courses. Standardized tests were used to obtain measures of comprehension, vocabulary and rate on narrative material and the same measures of reading ability were obtained on scientific material by tests constructed by the author. Only the seventy-five highest and seventy-five lowest scores of each group were retained. The factors of M.A. and C.A. were eliminated by means of the matched group technique. Then the group making high scores was statistically compared with the group making low scores on the basis of "t" ratios. The results of this analysis led Swenson to conclude that a significant relationship exists between the two types of reading material (general and science) and the reading abilities measured in these tests. He further concluded that a relationship also exists between these reading abilities and different levels of difficulty of subject matter.

A study by Shores and Saupe (1953) attempted to ascertain the reading abilities used in reading for problem-solving in science by administering a test devised by the authors on material typical of elementary school science. They also attempted to assess the reading abilities as measured by two tests, The New California Short-Term Tests

of Mental Maturity and The Progressive Achievement Test, purporting to measure mental age language, mental age non-language, reading age, arithmetic age and chronological age. These tests were administered to eight thousand Illinois city students in grades four, five and six to obtain correlations between each of these ages and achievement. The problem-solving in science test was administered to 214 of these students. The scores were tabulated for the 182 cases for which there was complete data.

An analysis of the resulting data led the authors to conclude that a common factor was present between the type of reading employed to solve problems in science in grades four, five and six and measures of mental ability and general achievement. However, they also found that this type of reading is unique in a manner not accounted for by generalized factors.

Robinson and Hall (1941) conducted a study to determine if there are any higher level reading abilities involved in reading material from the four different fields of art, geology, fiction and Russian and Canadian history. Five reading rate and comprehension accuracy tests based on four selections from the above fields were administered to 205 students in eight sections of an educational psychology course at Ohio State University. Four sections comprising 93 students took four of the tests--Canadian history, art, geology and fiction, while the other four sections totalling 112 students took only the two tests on Canadian and Russian history.

An analysis of the data revealed a high correlation between the scores testing comprehension of both histories indicating that history reading represents a definite skill. Low intercorrelation scores between fiction and other tests and between comprehension accuracy on various materials indicated that reading rate and comprehension vary with the material read. This data led the authors to conclude that reading in different subject fields is not highly related and of no predictive value from one subject to another. They further concluded that individuals will demonstrate different reading abilities, patterns and performance levels in reading different subject matters.

Several conclusions, drawn from the above research, should be of immediate concern to the secondary school teacher. These studies present conclusive evidence that the ability to read materials in each content field is dependent on reading activities holding unique and different relationships to a number of reading skills. Evidence has also been presented which suggests that proficiency in one content area does not necessarily predict successful achievement in another subject area. Furthermore, the results of one study demonstrate that proficiency at lower levels of comprehension is even less predictive of proficiency at higher levels of comprehension where more specificity exists.

These conclusions seem to indicate several implications for education. The fact that each content field requires specific reading skills uniquely related to the discourse of

that field implies that each subject teacher must assume direct responsibility for developing those skills pertinent to his particular area of instruction. It is apparent that if students are to pursue effectively their content area subjects provision must be made for developing those reading skills and abilities which are essential for adequate comprehension within each particular area of instruction. The fact that proficiency in one subject is not necessarily predictive of success in another subject presents further evidence to support the necessity for teaching applicable reading skills within each content area.

Teacher Preparation and Attitude Toward Teaching Reading Skills in the Content Areas

Research evidence presented previously demonstrates that, at the secondary level, reading instruction should be an integral part of content area instruction. However, as stated previously, secondary teachers have generally not received training in the teaching of reading. This has been partially responsible for influencing their attitude negatively toward the teaching of reading in content areas. Several of the following studies attempt to ascertain the preparation and attitudes of secondary school teachers in the field of reading while others are concerned with endeavours to assist these teachers to develop knowledge of and positive attitudes toward teaching reading in the content areas.

Harker (1973) designed a study to assess the provision made for the professional preparation of reading teachers

and specialists in undergraduate and graduate teacher education programmes of the forty-one Canadian universities and colleges offering such programmes. A questionnaire, designed to elicit information regarding the required and elective course offerings in the field of reading education, was sent to the dean or the head of the education department of each institution. The questionnaire was devised to assess the minimum standards, as determined by the International Reading Association, required by these institutions for prospective reading teachers and specialists.

An analysis of the responses revealed the following information pertinent to secondary education programmes. Of the twenty-four institutions, representing 60.0 percent of the respondents, offering secondary education programmes, 54.2 percent or thirteen institutions offered a course in developmental reading. This was a required course in only one institution. Only one institution offered preparatory training in reading instruction in a methods course. This finding indicates that secondary school teachers are inadequately prepared at present to teach the reading-study skills needed by students for effective study at the secondary level.

The above results are further substantiated in an earlier study designed by McGinnis (1961) investigating the training received by secondary school teachers in preparing them to develop students' reading skills and the instruction needed and received by high school students. To ascertain

the former, data was collected from a questionnaire sent to 570 Michigan high school teachers. The data indicated that approximately 30 percent of the participating teachers were expected to assume responsibility for reading instruction, 82 percent disclosed that college courses had taught them that reading skills could be improved, but less that 10 percent received any instruction on how to improve them. Approximately 75 percent were taught to anticipate a broad range of ability within their classes, but only one fifth were given any instruction in adapting their materials and teaching procedures. These results would appear to be substantiated by the responses of over one thousand college freshmen who were surveyed in order to determine the high school reading instruction they received. The responses revealed that 61 percent received no instruction in improving their reading skills and 90 percent reported that their teachers required the same text to be read and the same work to be done by all students in the same class. These findings led McGinnis to make two noteworthy conclusions. First, that there is a definite need at the secondary school level for improved reading instruction, particularly in reference to the effective use of textual materials, and that the responsibility for this instruction lies with the classroom teachers in their subject matter fields. Second, that teachers, at present, are not providing this instruction nor has their pre-service training adequately equipped them to do so.

This latter conclusion was supported by the findings of an investigation designed to determine the role played by classroom teachers in the improvement of students' reading instruction (Patterson, 1958). Thirty-one teachers in an eastern United States high school submitted responses to a two part questionnaire, the first part dealing with their reactions to twelve statements relating to teacher participation in a secondary school instructional reading programme and the second part assessing their reactions to twenty-three practical suggestions for classroom teachers' use in helping students improve in reading.

Analysis of the responses revealed that while teachers recognize the importance of effective reading they feel that the inclusion of reading instruction in the content areas means the addition of something extra to the teaching of course content. A lack of knowledge concerning improvement in reading skills was also evident as teachers did not feel competent in this regard stating that they did not have the necessary specialized training.

The results of this study were upheld in an investigation conducted by Otto (1969) to determine the direction and intensity of the attitudes of secondary teachers toward content area reading instruction. An attitude inventory was administered to eighty-seven secondary school teachers of a school system in a Wisconsin city. It attempted to reveal the teachers' perceptions of their preparation, role and abilities in teaching reading in the content areas.

Their findings revealed that the respondents realized the necessity for reading instruction at the secondary level, felt that it was an essential component of the content area curriculum and the responsibility of any teacher giving reading assignments and that reading instruction could be integrated with content courses without interfering with the major goals of those courses. However, they also felt that the teaching of reading depended on specialized training which they did not possess. Therefore, they did not feel competent in teaching the skills requisite to their subject areas.

The presence of qualified, trained personnel willing to assume the leadership and administration of a comprehensive reading programme at the secondary level is of vital importance. The absence of such supervisory personnel has frequently been cited as a major reason why secondary school reading programmes fail to materialize or are of questionable quality. In an attempt to ascertain the extent to which those occupying supervisory and administrative roles have any formal training related to secondary reading, Simmons (1963a) conducted a five state survey of one hundred twenty-seven United States schools. Analysis of the responses showed that sixty-four schools representing 50.6 percent of those surveyed employed personnel with no formal training in the teaching of reading, in leadership roles. While ninety-two schools representing 81.4 percent of those surveyed indicated that each teacher must assume responsibility for reading instruction in his

own curriculum area, sixty schools, or 53.1 percent of those responding assigned responsibility for the reading programme to the English department. As Simmons noted this reflects a naive belief that English teachers are qualified to handle the school's reading programme.

Olson and Rosen (1967), also concerned with the present practices regarding the teaching of reading, formulated a checklist to determine the extent to which teachers felt they were teaching some aspects of reading skill development. The checklist consisted of a list of twenty practices relating to reading. Responses were collected from 585 teachers. Their school principals were given the same checklist and were asked to respond as they thought the practices were employed by their teachers. The results of the study demonstrated that the teachers generally felt that text materials they used were suited for the reading levels of their students, that they grouped for differentiated instruction, that they knew the reading levels of the textbooks being used and that they knew the special reading skills pertinent to their subjects. The principals' responses indicated that they thought the teachers did not do as adequate a job as they said they were doing. A further analysis of the responses revealed several discrepancies between the teachers' judgments of their own effectiveness and their actual classroom practices.

The results of this study indicated that some teachers felt that they were doing an adequate job of teaching the reading skills related to content area curriculums.

This could provide a partial explanation for teacher resistance to suggestions for altering existing programmes. Teachers would hardly be amenable to changing a programme which they felt was adequate.

The results of the Olson and Rosen (1967) study supported one conducted earlier by Braahm and Rochm (1964). The authors, by means of a questionnaire, elicited information from secondary teachers regarding their cognizance and understanding of the reading skills necessary for effective reading of subject matter material, their awareness of the reading strengths and limitations of their pupils and the effectiveness of pre- and in-service reading programmes in familiarizing teachers with reading procedures. The responses revealed that a large discrepancy exists between the knowledge of reading skills possessed by subject area teachers and that possessed by the reading expert. On the basis of this finding the authors concluded that the knowledge possessed by the reading expert is not being effectively communicated to the classroom teacher.

Smith and Otto (1969) noting the questionable results of the typical methods used in attempting to increase teacher knowledge of and positive attitudes towards content area reading instruction, decided to experiment with a different method. They conducted a reading improvement course for nineteen secondary teachers, ostensibly designed to improve the reading abilities of the participating teachers, but based on the assumption that such a course would increase

their knowledge of reading procedures and convince them of the value of reading instruction at the secondary level. Comparison of results on a pre- and post-standardized reading test showed substantial gains on the post instructional test, but comparison of responses on a pre- and post- attitude inventory indicated no marked change in attitude toward content area reading instruction. However, the results of a follow-up questionnaire indicated a positive modification of attitude had occured in that some participants indicated either a willingness to include reading instruction as part of their regular instructional programme, or had already established such a programme.

On the basis of the research evidence presented in this chapter certain conclusions are warranted. Researchers have both stated and implied that if students are to pursue their academic subjects effectively they must receive instruction in the reading and study skills related to those subjects. Since these skills hold significant and unique relationships to each content field, and proficiency in one field is not predictive of success in another, then instruction in specific reading skills must be provided in the discipline for which these skills are required. In order to achieve this goal, content courses need a refocusing of emphasis toward needed reading instruction. It is therefore essential that the teachers responsible for subject area instruction recognize the need for such instruction and assume the responsibility for providing it.

The fact remains, however, that at present the need for such a programme is still neither universally recognized nor accepted. Even assuming that it was, the lack of trained personnel to develop such a programme, would be a major deterrent mitigating against its implementation. It is apparent from the research reported previously that only a relatively small percentage of secondary teachers have any pre-service training in reading instruction. Hence, there is a definite need to assist these teachers to acquire the knowledge of reading and study techniques necessary for the incorporation of reading instruction into content area curriculums.

CHAPTER IV

PROVISION OF INSERVICE EDUCATION IN READING FOR THE CONTENT AREA TEACHERS

This internship was primarily concerned with the development and implementation of a programme designed to improve the teaching of reading in the content areas. Inservice education provided the means through which the intern could assist the teachers of English, mathematics, science and social studies to improve their content area reading instruction. The inservice programme had, as its specific goals, the acceptance of the idea that courses in the content areas may provide for the simultaneous teaching of reading and course content, and the provision of practical information, ideas and suggestions relating to how teachers may assist students to develop skills needed for understanding content area materials.

As shown in Chapter II, there was no comprehensive programme of content area reading instruction established in the school, mainly because the teachers were unsure of what was involved in such instruction and how to go about implementing such a programme. However, it was apparent from the results of both the checklist assessing present reading practices, and the attitude inventory, that some reading instruction was taking place in the content areas, albeit somewhat incidental, and that teachers were interested

in making reading instruction a more integral part of their content area courses. It was evident, therefore, that the intern's task was two fold: to encourage and confirm present approaches in some areas and in others to initiate the establishment of appropriate procedures.

IMPLEMENTATION OF INSERVICE PROGRAMME

During the initial portion of the internship, the intern wished to ensure that the teachers were firmly committed to the establishment of a developmental reading programme in the content areas. Although these teachers had expressed their interest in such a programme, and had offered their full co-operation, there was some indication that they were somewhat uncertain as to the role of the intern, the format of the inservice programme, and the amount of teacher and classroom time that would be required.

Because of this concern, the intern spent the first two meetings with these teachers which consisted of one group meeting and one individual conference. She defined her role, established rapport, outlined the procedures the inservice programme would follow, and arranged schedules for working with each of the teachers. During these informal meetings it was stressed that the intern was there primarily to assist teachers become more knowledgeable about techniques to improve reading instruction. It was also stressed that classroom time would be required only to demonstrate particular lessons. The intern assured the teachers that

the programme would be conducted within the framework of the existing timetable, but that it would be necessary for the intern to meet with teachers during some of their unassigned time periods. A schedule was arranged so that the intern could work one day per week with the two teachers of each content area, thus leaving her one free day for the compilation of inservice materials. Spending one day per week with the teachers of each content area facilitated scheduling, but also proved valuable in that informal discussions could occur during recess and lunch times and at odd moments throughout the day.

These initial meetings resulted in the acceptance of the intern by the teachers and in a less cautious, more enthusiastic support for the inservice programme. Once this support was secured, the proposed inservice programme could proceed with more likelihood of success and also with more assurance that it would affect future planning in each of the content areas.

IDENTIFICATION OF READING-STUDY SKILLS IN EACH CONTENT AREA

The second portion of the internship was concerned with identifying the reading-study skills pertinent to each instructional area and the general reading-study skills common to the four content areas. In a group meeting with the intern, the eight teachers were provided with a xeroxed copy of pertinent sections of the article "Patterns of Writing in Different Subject Areas" (Smith, 1964: 31-36,

97-102) which identifies the writing patterns which are unique to the materials of each content area. In addition, the teachers also received a list of reading-study skills based on the skills typically enumerated by experts in the field of reading. Following the distribution of these written materials, the intern requested that the teachers use the materials as references to assist them in perusal of their content area textbooks and some related resource material. Then, using these sources as a basis for discussion, and aided by suggestions provided by the intern, the intern and teachers collectively defined the reading-study skills which the teachers perceived as necessary for effective study in their content area subject.

After the teachers had read the material and had tentatively identified the reading-study skills which they felt to be most applicable to their particular subject, the intern held individual conferences with the teachers of each content area. These meetings provided an opportunity for further discussion where teachers could raise any points in need of clarification. The result of each of these conferences was a finalized list of reading-study skills which the intern and teachers determined to be most relevant to each of the content areas.

It was decided during these meetings, that there would not be sufficient time to allow for indepth coverage of every reading-study skill in each content area. Therefore, rather than giving the teachers a superficial knowledge of

every skill, the intern requested that the teachers select the most important skills from their list. These skills could then be given top priority by the intern in the compilation of materials illustrating techniques for teaching them.

Throughout this stage, and at every stage in the inservice programme, the principal was kept informed of the progress achieved to date. Both the intern and the principal felt this to be absolutely essential, and weekly meetings were held to discuss all aspects of the inservice activities. As Otto and Erickson (1973: 19) point out:

> ... the principal is responsible for the reading program in a given school building. This responsibility entails knowledge of what constitutes an effective reading program; it includes the ability to provide competent supervision; and it implies that the principal has more than a superficial knowledge of the skills to be taught, the sequence from level to level, the ways which teachers can diagnose and adjust individual differences, and the effectiveness of the total program.

Providing inservice education in reading to the principal was a continuous process throughout the internship. To ensure that the principal was thoroughly familiar with the programme, and for his future reference, the intern provided him with copies of all inservice materials, discussed their purpose and suggested ways in which they could be used.

DIAGNOSIS OF STUDENT NEEDS

At this point, teachers had been given sufficient information to familiarize them with the reading-study skills

involved in the reading material of their respective content areas. However, before the intern could assist the teachers in developing techniques for teaching these skills, it was necessary to instruct the teachers in a method which would enable them to determine the particular reading needs of their students in each content area. If they were not able to determine the reading levels of their students, then they could not provide them with appropriate instruction and suitable materials.

Prior to this time teachers had relied on the information provided them by the elementary schools for incoming grade seven students, their own observations, the results obtained from students' work and unit evaluations for grades eight and nine students. The intern pointed out the inadvisability of adhering to only these methods and suggested that a more accurate measure of students' reading abilities was definitely necessary and would provide valuable information.

The intern chose to instruct the teachers in devising and administering informal group reading inventories for each content area. Instructing the teachers in devising and administering these inventories, in some cases, took several sessions. In the first of these meetings, written information demonstrating sample forms for each of the inventories was distributed to the teachers. After they had read this material, a second meeting was held with the teachers of each content area where a model inventory,

prepared by the intern, was provided and discussed. Each of these inventories was designed to test those reading skills identified by teachers as being most relevant to each of their content areas.

The English and social studies teachers decided that the inventory prepared by the intern was suitable for administration without revision. Therefore, arrangements were made for the intern to demonstrate the administration of the inventory in one of each of these four teachers' grade nine classes. The teachers observed the administration of the inventory, at the request of the intern.

It was decided that the English Group Reading Inventory would be administered to the middle or Vanguard groups of grade nine students. Since this was usually a team teaching situation, where both of the English teachers the intern was working with shared responsibility for large group instruction, it was possible to administer the inventory to both large groups consisting of approximately seventy students each. The Social Studies Group Reading Inventory was given to two heterogeneous grade nine classes totalling sixty-seven students.

The mathematics and science teachers decided that the inventories prepared by the intern needed some revision before they were administered. Arrangements were made for two further meetings with these teachers to make the necessary changes. After the inventories were revised, it was decided to administer them to grade eight rather than grade nine

students, as several grade nine students had already received both the English and social studies inventories. It was thought unfair to subject them to four inventories within such a short time period. Also, by administering the mathematics and science inventories to grade eight students, valuable information would be available on these students for next year.

The intern administered the mathematics inventory to two groups, for a total of ninety grade eight students. The science teachers wished to have their inventory given to all the grade eight classes, in all a total of approximately two hundred eighty students. It was arranged, therefore, for the intern to administer half of these and the science teachers to look after their administration to the remaining four classes.

After these inventories had been scored, and a class profile prepared to illustrate the results, the intern and teachers met again to discuss the interpretation of a reading inventory. The intern assisted the teachers in interpreting the results, and explained the kind of information which the inventory made available to them. Students in need of easier, or more difficult material were detected on each class profile, and the specific skills in which each of the teacher's students required additional assistance were identified. Then, using the results of the inventories as guidelines, the intern and teachers discussed grouping for differentiated instruction as one method of meeting

students' needs. Grouping was discussed, not only in terms of inter-class grouping which was already established in English, mathematics and science, but also intra-class grouping which was presently employed to a lesser extent. Each class profile provided the teachers with the necessary information for grouping according to need and for specific skill instruction.

The whole concept of grouping for differentiated and effective instruction was emphasized by the intern. However, little emphasis was needed as the teachers realized the necessity of grouping and several of them were presently conducting highly successful grouping arrangements. For example, mathematics students in one grade nine group, who had not demonstrated mastery of the concepts in a particular chapter, were provided with a set of tapes and accompanying worksheets, developed by their teachers, to reteach the topic step-by-step. During their mathematics periods they were directed to a seminar room where listening stations were set up by the librarian and they could proceed through the tapes and worksheets at their own rate. If they experienced difficulties a teacher was available for additional assistance. After they completed the tapes, a retest was administered to them.

It was obvious to the intern that these particular teachers needed little assistance in developing grouping techniques. However, in social studies, for example, where plans were presently being finalized to institute grouping

arrangements in the next school year, the intern could be of some assistance. The intern had provided these teachers with a means of obtaining valuable information about their students. She had stressed the importance of assessing students' needs as a first step towards effective instruction, and then grouping for differentiated instruction to meet their needs as an essential second step. Her next tasks, therefore, were to discuss with teachers the necessity of providing their students with appropriate reading materials and to instruct the teachers in techniques for teaching the reading skills the students would need to possess to read these materials effectively.

PLANNING AN INSTRUCTIONAL PROGRAMME

The teachers of mathematics and English had already established grouping and provided materials suited to the instructional level of each group. In both of these content areas, three groups were in operation at each grade level with a fourth group in English being presently planned for implementation in September.

In the science area two groups had been formed at each grade level and instruction was adapted to meet academic ability. While instructional materials were essentially the same for both groups, the teachers felt that due to the nature of their science programme, differentiated instructional materials were not absolutely necessary. As explained in Chapter II, the approach used by the science teachers primarily involves laboratory work and related

activities and students are not required to rely heavily on their textbooks. It was felt that in the near future textbooks would be used primarily as reference material only. However, as a fair amount of reading would still be required during laboratory procedures and project activities, the science teachers felt that the teaching of reading skills could, and should, be an integral part of science teaching. Both teachers expressed their desire to do what they could in their particular situation to assist their students in improving their ability to read science materials.

As was stated previously in this chapter, the social studies department was presently in the process of developing instructional programmes to meet the needs of various groups to be implemented in September. Problems were being encountered in locating suitable materials for some of these groups and the intern was asked by the department head to assist him in this regard.

The intern had already begun to compile a list of multi-level, topical reading material for the social studies and science programmes. The librarian at the school proved most helpful in directing the intern to additional sources for procuring further information. Locating sources of materials and compiling reading lists was found to be a very time consuming task. Since this material could not be utilized until September, as the school year was presently so far advanced, the intern decided to compile these lists in her spare time and proceed with the other inservice

activities she had planned.

The remaining portion of the inservice programme was devoted to developing techniques for teaching the reading and study skills pertinent to each content area. The intern reiterated the fact that little improvement would result from incidental teaching of reading skills, and she stressed the need for each teacher to plan a programme for next year to include the teaching of reading skills related to his subject.

Several activities were planned by the intern to familiarize teachers with techniques for teaching these skills. The activities the intern chose to illustrate these techniques for the teachers of each of the various content areas depended on several factors: the present degree of knowledge exhibited by teachers about these skills, the schedules of the teachers, the topics presently being covered in each of the teacher's classes, and the amount of time remaining before completion of the inservice programme. Activities included the presentation of sample lessons utilizing these skills to the teachers, opportunities to observe the intern teaching directed reading lessons to students, discussion of xeroxed material provided by the intern to provide further teaching suggestions, and many opportunities for teachers to formulate questions and to verbalize problems concerning the skills to be taught and teaching techniques to be employed.

The development of vocabulary was the first reading skill chosen by the intern for work with the teachers. This area was considered by the intern and the teachers to be most important in all four content areas. Each teacher was given resource materials compiled by the intern suggesting many ideas and much information about vocabulary development. These materials provided a source of ideas which teachers could refer to for varied activities. (See Appendix B, part III.)

Each teacher was encouraged to plan a regular programme of vocabulary development. The intern suggested that before their students read an assignment, the teacher should search through the assigned reading, select words that would cause difficulty, and teach them in advance--in the context in which they would be encountered. Students should be made aware of the methods the authors use in their textbooks to introduce them to key terms or concepts. The students should be led to make full use of any context clues that are present, and to reduce words into syllables for easier pronunciation. Teachers should encourage students to keep a record of newly encountered, important, terms. The "divided page" technique, where a key term is listed on the left of the page, and the glossary meaning(s) and an illustrative sentence are listed on the right, was suggested by the intern as an excellent method of recording new words. To assist students to retain new terms and their meanings, the intern provided several examples of vocabulary reinforcement

material. This material was in the form of games such as crosswords, matching exercises, scrambled words and word puzzles. These are easy to construct, take a minimal amount of teacher time, and students thoroughly enjoy doing them. Several of these activities were constructed by the intern to accompany a unit in history entitled "The Great Depression" which was currently being taught in grade nine. In working with one group of these students, the intern used these activities and found that they worked well.

All the teachers expressed positive opinions about the ideas, suggestions and materials on vocabulary development, stating that they would definitely devote more attention to this area and make use of some of the activities the intern had suggested. Several times during the remainder of the internship teachers stated that they were now far more aware of the need for vocabulary development, and on two occasions teachers reported that after our discussions they were attempting to make more use of the textbook glossaries.

Following the work on vocabulary development the intern and the teachers of English, science and social studies concentrated their efforts on techniques for teaching main idea and supporting details. Both of these reading skills are important as they are basic to several other comprehension skills. While some work was also done in this area with the mathematics teachers, other reading skills were considered to be more pertinent. Therefore, attention was devoted in mathematics to reading to interpret verbal

problems.

The intern suggested to the teachers that when teaching students to read to get the main idea several steps must be mastered first or poor comprehension will result. Each step must be taught, practised and mastered before students can proceed to the next step. These steps are as follows: (1) recognizing key words in sentences, (2) recognizing key sentences in paragraphs, (3) recognizing the main thought of a paragraph, and (4) application of the previous steps to continuous material in content area textbooks. Similar guidelines were also suggested for teachers to follow when teaching students to read for supporting details.

The importance of using good questioning techniques was also brought to the teachers' attention here, and when teaching other reading skills. Students become attuned to the type of questions their teachers ask, and tend to organize their reading in response to these questions. The intern used the results of the reading inventories to illustrate that the majority of students were quite proficient in reading for details (a reading skill that is perhaps over-emphasized throughout school), whereas a large majority of students are deficient when it comes to reading for main ideas. Both the intern and teachers felt that this may be due in part to more stress being placed on reading for detail, and less attention being given to reading for main idea. While the latter may be a more difficult reading skill both to master and to teach, it is perhaps also not given the

attention it deserves. Therefore, the intern stressed to these teachers the importance of developing good questions to set purposes for reading, to motivate students to think about what they have read, and to check the concepts which they have gained from their reading.

Examples of general questions which teachers could ask and sample activities which they could use were provided by the intern for their future reference.

Resource materials were compiled for the mathematics teachers to illustrate techniques for teaching students to read to interpret verbal problems in mathematics. These materials included overhead transparencies for the teachers and sheets which could be duplicated for their students to demonstrate a step-by-step procedure of attacking word problems and to demonstrate also an example of a data diagram to assist students in visualizing problem situations. Numerous other ideas were suggested such as holding "how-to-read-it" sessions, reading problems orally, and trying the "easy numbers" technique, to name but a few.

It was initially thought that the intern would be able to demonstrate some of these techniques in the teachers' classes. However, while problem solving was the next topic to be covered by the teachers, time did not permit its inclusion before the end of term.

Several of the teachers had expressed their concern to the intern that their students could not recognize the organizational pattern in what they were reading, nor could

they organize what they had read into a good summary. The intern pointed out to them that the first step to be mastered in learning how to organize material is to understand the relationship between main idea and details. Since the teachers had been provided with material, and discussions had been held regarding this skill, the intern followed this with material on organizational patterns. Several suggestions were provided which would aid teachers in assisting their students to find organizational patterns in what they were reading. For example, the intern constructed a study guide for grade nine social studies students who were assigned the chapter "The Depression Begins" for independent reading. This chapter was organized around a cause and effect pattern, and the study guide consisted of a list of effects and a number of causes. Students were directed to read the effect, then read the assigned page in their textbook to find the cause. A similar exercise required students to match statements to show a cause-effect relationship.

Material was then provided by the intern for the teachers to illustrate the steps which should be used in teaching the organization of materials, from recognizing the topic sentence in a paragraph to instructing students in learning the outline form.

One of the social studies teachers was quite interested in this particular skill. He was very concerned that some of his students appeared to have great difficulty in grasping

the organizational pattern of chapters in their geography textbook. Students were having problems in relating each piece of information into an overall concept. Yet this particular textbook was extremely well organized into topics and subtopics and the teacher had no difficulty in organizing each chapter into outline form which he then used for teaching. The intern made several suggestions which she thought might be helpful. First, that the teacher discuss with his students the way in which this particular text, and its chapters, were organized. Second, that the teacher provide his students with a copy of his outline for the initial chapter to be taught, and third, that he then assist his students, through a gradual process, into making their own outlines. In this way students would get an overview of the chapter, with its main topics clearly and concisely organized.

During the time remaining for the inservice programme discussions were held on techniques of teaching several other reading-study skills. As was explained in an earlier section of this chapter time did not permit an indepth coverage of all the reading skills. Discussions were held and resource material was provided to illustrate techniques for teaching some of the most important skills. Although material was not provided for all the remaining skills, suggestions were often made by the intern in response to teachers' questions or in the course of related activities. In this manner, some attention was paid to several other reading-study skills.

INSTRUCTIONAL AND RESOURCE MATERIALS

The results of the reading inventories demonstrated that in every group tested on their knowledge of parts of their textbooks, each group contained several students who were deficient in this skill. This came as some surprise to teachers who had assumed that this would be one area where all students should demonstrate proficiency. It was emphasized by the intern that knowing the parts of their textbook, and how to use them, were not skills which come naturally to the majority of students. The importance of teaching these skills when students first acquire their texts, and of providing additional practice in these skills, throughout the year needed to be emphasized. It was pointed out to teachers that if students could not make efficient use of parts of their regular textbooks, such as the table of contents, indices, chapter introductions and summaries they would certainly have difficulty in finding appropriate resource materials for assignments and projects.

A variety of material was compiled by the intern to assist teachers in acquainting their students with the general features of both their textbooks and library books. These materials consisted of an explanation of the parts of books, such as title page, table of contents, list of maps, charts and glossaries, a graphic aid entitled "The Anatomy of a Textbook" which visually presented and identified the components of books, and work sheets which teachers could

give their students for follow up activities.

In assigning independent work in the form of assignments, reports and projects, teachers should ensure that their students can find suitable reference material. Students, therefore, need to be familiar with the placement of library materials and able to make use of aids such as the card catalogue in locating materials. It is also essential that appropriate materials are readily available. Teachers at this school are particularly fortunate in having the services of a librarian who provides instruction to students on how to locate materials and assists them if they run into difficulty. Upon requests from teachers, he will also search out books on a related topic, and set them aside for students involved in a particular project. It was suggested by the intern that if the reading levels were known of these materials, it would be of great benefit to teachers and students. For example, if a science project on ecology was assigned to a group of students, and the teacher knew the titles of the available books relevant to this topic and their respective reading levels, students could be directed to those books appropriate to their reading ability.

To enable the librarian and teachers to determine a book's reading level, the intern instructed them in the application of the Fry Readability Graph (1972) to reading materials to demonstrate how it can be used in selecting appropriate instructional materials and classifying and

grading supplementary materials. In addition to this, the intern applied the readability graph to a representative selection of resource material related to science and social studies. The reading levels obtained for the seventy-eight social studies books were presented in Chapter II. It was found that 51.4 percent of these materials were written at or above a grade ten reading level. When the readability formula was applied to seventy-five science resource books, the results showed that, on the average, these materials tended to be written at a lower reading level. Of these seventy-five books, 16.0 percent were written at or below a grade six reading level, 58.6 percent from grades seven to nine, and 25.4 percent at or above grade ten.

The librarian was presently in the process of compiling lists of all available resource material contained in the library. When this was finalized, teachers would have a complete list of all the materials available to them and their students, with reading levels for some of the materials assigned by the intern.

It was suggested to the librarian and teachers that, if any funds were available for ordering library materials, a portion should be spent on books written at lower reading levels. To facilitate the ordering of such material, multi-level book lists were given to the librarian and the teachers of science and social studies. Book lists of high-interest, low-vocabulary materials were also prepared by the intern and distributed to the English teachers. The librarian was in

the process of ordering some of these materials before school closed in June. Suggestions were also provided by the intern for developing a professional library of materials related to reading and study skill development in the content areas. A partial list containing a representative selection of the previously mentioned materials is contained in Appendix C.

CHAPTER V

EVALUATION OF THE INSERVICE PROGRAMME

The inservice programme was concerned with assessing the school's present situation regarding reading in the content areas, developing teacher awareness that such a programme is worthwhile, necessary and feasible, and with providing teachers with the necessary knowledge for implementing such a programme. Evaluation of the inservice programme was in terms of how well these objectives had been achieved.

At the end of the inservice programme, to determine in part the extent to which the above objectives had been attained, teachers were requested to respond to an inventory designed to elicit their opinions on the practicality and utility of the programme in making their own teaching more effective. For each item, teachers were asked to choose the response, from Strongly Agree through to Strongly Disagree, which best conveyed their opinion of the value of the inservice to them in their teaching.

Table V shows the responses of the teachers (in percent) to each of the five categories for each item. The questionnaire is included in Appendix A.

Table V

Percent of Teacher Responses in Each Category of the Evaluation of the Inservice Programme

Item	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1	62.5	37.5	0.0	0.0	0.0
2	37.5	62.5	0.0	0.0	0.0
3	87.5	12.5	0.0	0.0	0.0
4	50.0	50.0	0.0	0.0	0.0
5	62.5	37.5	0.0	0.0	0.0
6	75.0	25.0	0.0	0.0	0.0
7	0.0	0.0	0.0	75.0	25.0
8	62.5	37.5	0.0	0.0	0.0
9	62.5	37.5	0.0	0.0	0.0
10	50.0	50.0	0.0	0.0	0.0
11	87.5	12.5	0.0	0.0	0.0

For discussion purposes Strongly Agree — Agree and Disagree — Strongly Disagree responses are collapsed.

The responses are indicative of the strong positive feelings which teachers displayed toward the inservice programme itself, and also toward the value of teaching reading-study skills in the content areas.

Strong trends, all in a positive direction, are evident in the responses to the following items assessing the effectiveness of the inservice:

1. The objectives of the inservice were clearly stated at the initial staff meeting. AGREE (100 percent)

2. The inservice achieved the objectives that were stated at the initial meeting. AGREE (100 percent)

3. The ideas, activities and materials presented during the inservice were relevant to your work. AGREE (100 percent)

4. There were sufficient guiding materials to give you a comprehensive view of what is involved in teaching the reading-study skills in your content area. AGREE (100 percent)

5. The inservice provided opportunities for adequate discussion and questions. AGREE (100 percent)

6. The intern provided as much guidance as you would have liked to receive throughout the inservice. AGREE (100 percent)

7. The amount of material covered was too great for the length of the inservice. DISAGREE (100 percent)

8. The inservice contributed to increasing your understanding of what is involved in teaching the reading skills pertinent to your content area. AGREE (100 percent)

9. The inservice was well organized--a definite plan was evident. AGREE (100 percent)

10. During the next school year, a conscious effort should be made to utilize the ideas presented during the inservice. AGREE (100 percent)

11. You would recommend that a similar programme be instituted in other junior high schools. AGREE (100 percent)

The results of the inventory appear to indicate that the teachers felt the inservice to be a worthwhile endeavour, that they now feel more knowledgeable about the teaching of reading-study skills in the content areas, and that they feel a conscious effort should be made to institute a developmental reading programme during the next school year. These results are certainly encouraging, and indicate that the inservice programme was successful in attaining its objectives.

Responses to a request for additional comments at the conclusion of the inventory provided further evidence that the inservice programme had positive value for the teachers. One teacher stated that the programme was valuable and provided material and ideas which could be used in the future. Another teacher wrote that he was pleased to be part of the project, that it had helped him in several areas, in others confirmed his approach, and that it should be of benefit to him in teaching in the future. Other comments ranged from "an educative enlightening experience" to "good programme, worthwhile for teachers and students".

Both the teachers and the principal stated their intention of implementing at least some aspects of a developmental reading programme in September, using the ideas, activities and materials provided for them during the inservice programme. Several of the suggestions proposed by the intern were already being implemented by some of the teachers. The principal requested that the intern organize complete files of all materials which she had provided, for the teachers of

each content area, to ensure his complete familiarity with the proposed programme and to assist him in determining the degree to which teachers were implementing it. To facilitate the implementation of a reading and study skills programme in September the following recommendations were suggested by the intern:

1. The programme should be instituted at the beginning of September.

2. As the first step, group informal reading inventories should be administered and interpreted in each content area.

3. Students should be grouped according to skills using as a basis the results of the inventories.

4. Students should be taught to use the major skills associated with each of the content areas.

5. Concentration on how to read the text should supplant drill on content.

6. Skills should be taught using the actual material of the textbooks.

7. Regular group reading inventories should be administered in each content area to determine if students are learning the skills and to specify the direction of any remedial assistance.

8. Meetings of teachers should be arranged to "compare notes" on various students and to plan a co-operative effort to overcome student difficulties where certain skills overlap in certain content areas.

9. One staff member, either an administrator or a regular teacher, should be appointed as co-ordinator of the programme.

10. Provision should be made for both continuous and final evaluations. Such evaluation could take the form of periodic staff meetings and a final close examination of the results of the programme.

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APPENDIX A. Questionnaires

Attitude Inventory

Teacher's Name: _____ Subject Taught: _____

The fourteen items listed below are designed to assess your attitudes toward the teaching of reading in the content fields. Indicate by circling the response which best indicates how you feel about the teaching of reading in your classes.

1 = Strongly Agree 3 = Undecided 5 = Strongly Disagree
2 = Agree 4 = Disagree

1. In the secondary school the teaching of reading should be the responsibility of reading teachers only.	1	2	3	4	5
2. Secondary school teachers can teach reading effectively without special university courses in methods of teaching reading.	1	2	3	4	5
3. The teaching of reading skills can be incorporated into content area courses without interfering with the major objectives of these courses.	1	2	3	4	5
4. Any secondary school teacher who assigns reading should teach his or her students how to read what is assigned.	1	2	3	4	5
5. With rare exceptions, students should know what there is to know about reading before they are permitted to leave the elementary school.	1	2	3	4	5
6. Only remedial reading should be necessary in the secondary school and that should be done by remedial reading teachers in special classes.	1	2	3	4	5
7. Teaching reading is a technical process that secondary school teachers generally know nothing about.	1	2	3	4	5
8. Secondary school teachers cannot teach reading without special materials designed for that purpose.	1	2	3	4	5

1 = Strongly Agree 3 = Undecided 5 = Strongly Disagree
2 = Agree 4 = Disagree

9. Teaching reading is a necessary and legitimate part of teaching any content course in the secondary school.	1	2	3	4	5
10. Teaching reading takes all the fun out of teaching at the secondary school level.	1	2	3	4	5
11. Every secondary school teacher should be a teacher of reading.	1	2	3	4	5
12. At the secondary school level students want to learn content, not how to read.	1	2	3	4	5
13. Integrating the teaching of reading with the teaching of specific content can be as exciting for the content area teacher as teaching content only.	1	2	3	4	5
14. Content area teachers in the secondary school are probably more competent to teach the reading skills needed for their subjects than special reading teachers.	1	2	3	4	5

Practices Related to Reading in the Content Areas

Teacher's Name: _____ Subject Taught: _____

The twenty practices listed below are often recommended in teaching effectively the special reading skills in the various content areas. Indicate the extent to which this practice applies to your classes.

	Almost Always	Sometimes	Seldom or Never
1. Text material used is suited in difficulty to the reading levels of students.			
2. Students are encouraged through assignments to read widely in related materials.			
3. At the beginning of the year, adequate time is taken to introduce the format of the text and to discuss how it may be read effectively.			
4. The teacher is aware of the special vocabulary and concepts introduced in the various units.			
5. Adequate attention is given to vocabulary and concepts introduced in the various units.			
6. Provisions are made for checking on extent to which important vocabulary and concepts are learned, and re-teaching is done where needed.			

	Almost Always	Sometimes	Seldom or Never
7. The teacher knows the special study skills involved in the subject and teaches them.			
8. The course content is broader in scope than a single textbook.			
9. The assignments are made clearly and concisely.			
10. Students are taught to use appropriate reference materials.			
11. Adequate reference materials are available.			
12. Plenty of related informational books and other materials are available for students who read below-grade level.			
13. Plenty of related informational books and other materials are available for students who read above-grade level.			
14. The teacher takes advantage of opportunities that may arise to encourage students to read recreational reading matter.			
15. The teacher helps the poor reader to develop adequate reading skills.			

	Almost Always	Sometimes	Seldom or Never
16. Readings from various textbooks are provided for those who cannot read the regular text.			
17. Students are grouped within the classroom for differentiated instruction.			
18. The teacher knows the reading level of the textbook(s) being used.			
19. The teacher knows the reading ability of the students from standardized tests, other evaluative materials, and/or cumulative records.			
20. The teacher illustrates the dominant writing pattern of a given content area.			

Evaluation of Inservice

The eleven items listed below are designed to assess your opinion as to the practicality and utility of the inservice programme on the teaching of reading in the content areas. Indicate by circling the response which best conveys your opinion of the value this inservice has been to you in your teaching.

1 = Strongly Agree 3 = Undecided 5 = Strongly Disagree
2 = Agree 4 = Disagree

1. The objectives of the inservice were clearly stated at the initial staff meeting.	1	2	3	4	5
2. The inservice achieved the objectives that were stated at the initial meeting.	1	2	3	4	5
3. The ideas, activities and materials presented during the inservice were relevant to your work.	1	2	3	4	5
4. There were sufficient guiding materials to give you a comprehensive view of what is involved in teaching the reading-study skills in your content area.	1	2	3	4	5
5. The inservice provided opportunities for adequate discussion and questions.	1	2	3	4	5
6. The intern provided as much guidance as you would have liked to receive throughout the inservice.	1	2	3	4	5
7. The amount of material covered was too great for the length of the inservice.	1	2	3	4	5
8. The inservice contributed to increasing your understanding of what is involved in teaching the reading skills pertinent to your content area.	1	2	3	4	5
9. The inservice was well organized — a definite plan was evident.	1	2	3	4	5

1 = Strongly Agree 3 = Undecided 5 = Strongly Disagree
2 = Agree 4 = Disagree

10. During the next school year, a conscious effort should be made to utilize the ideas presented during the inservice. 1 2 3 4 5

11. You would recommend that a similar programme be instituted in other junior high schools. 1 2 3 4 5

Additional comments: _____

APPENDIX B. Inservice Materials

I. ESTABLISHING READING-STUDY SKILLS IN THE CONTENT AREAS

An Estimate of Reading and Study Skills for the Content Areas.

Subject: _____

Skills	Relevance to the Subject				Status of my Students		
	Very Important	Important	Of Little Importance	Of No Importance	Superior	Adequate	Poor
WORD-MEANING SKILLS							
1. Understanding of technical terms							
2. Use of the dictionary							
3. Use of the glossary							
4. Use of new terms in speaking and writing							
5. Understanding of prefixes, suffixes and roots							
6. Understanding of figurative language							
7. Understanding of personal and general connotations of words							
8. Understanding of technical vocabulary related only to this subject							

Skills	Relevance to the Subject				Status of my Students		
	Very Important	Important	Of Little Importance	Of No Importance	Superior	Adequate	Poor
COMPREHENSION SKILLS							
1. Recognition and understanding of main ideas							
2. Recognition of relevant details							
3. Recognition of relationships among main ideas							
4. Organization of ideas in sequence							
5. Understanding of time and distance concepts							
6. Following directions							
7. Reading maps, tables and graphs							
8. Distinguishing between facts and opinions							
9. Judging and criticizing what is read							
10. Reading widely to seek additional evidence							

Skills	Relevance to the Subject				Status of my Students		
	Very Important	Important	Of Little Importance	Of No Importance	Superior	Adequate	Poor
11. Drawing inferences							
12. Listening attentively and critically							
STUDY SKILLS							
1. Using textbooks efficiently							
2. Using the library efficiently							
3. Taking notes							
4. Scheduling time efficiently							
5. Preparing for examinations							
6. Preparing for discussions and reports							
7. Using reference materials efficiently							
MECHANICAL SKILLS							
1. Adjusting rate of reading to suit purpose and content							

Skills	Relevance to the Subject				Status of my Students		
	Very Important	Important	Of Little Importance	Of No Importance	Superior	Adequate	Poor
2. Reading orally							
3. Reading selectively							
4. Skimming with a purpose							
INTERESTS							
1. Developing new interests							
2. Developing wide interests							
3. Shifting interests without losing motivation							

READING SKILLS IN ENGLISH

1. Vocabulary

   a. knowledge of structural and phonetic principles
   b. using context clues
   c. choosing the appropriate word meaning
   d. knowing the meaning of common prefixes, suffixes, roots and their relationship to the whole word

2. Comprehension

   a. finding the main idea of a paragraph
   b. recognizing important details
      (i) evidence to support main ideas
      (ii) answers to specific questions
   c. interpreting pictures, diagrams and cartoons
   d. comprehending material written in sequence and recognizing the organization of the material
      (i) recognizing the relationships of time, place, analogies and cause-and-effect
      (ii) recognizing the sequence of plot, argument and character development
      (iii) recognizing the patterns of organization: time, contrast, main idea, climax
      (iv) outlining material
      (v) recalling the author's pattern of organization
   e. recognizing the features of the short story, novel, poetry, drama, essay and biography
   f. inferring setting and anticipating events from clues
   g. recognizing the theme
   h. recognizing the mood of a selection and changes in mood
   i. reacting to the material
   j. interpreting the clues that reveal the personality of the characters
   k. interpreting shades of meaning
   l. interpreting figurative language
   m. distinguishing fact from opinion
   n. judging the validity of character portrayal
   o. evaluating the literary worth of material

3. Adjusting reading rate to the type and difficulty of the materials and to the reading purpose:

   a. gaining a general appraisal of the material
   b. skimming the contents of the material
   c. reading for memorization of general concepts and/or details
   d. reading carefully and critically

4. Locational Skills

   a. finding words quickly and efficiently in a dictionary or glossary
   b. using a table of contents and index effectively
   c. finding and selecting reference materials
      (i) card catalogue
      (ii) Reader's Guide to Periodical Literature

READING SKILLS IN MATHEMATICS

1. Understanding the specialized vocabulary

   a. technical, mathematical terms
   b. alphabetical, operational, grouping and relationship symbols
   c. roots, prefixes and suffixes that aid in understanding mathematical terms

2. Reading and interpreting verbal problems

   a. evolving procedures for problem-solving
   b. distinguishing between the important and irrelevant in problems
   c. apply graphic representations to problems

3. Grasping mathematical concepts and relating them to others or generalizing from them.

4. Recognizing equations as expressive in a manner similar to sentences in regular prose writing.

5. Acquiring meaning from the statements of rules and definitions so that they may be used with understanding.

6. Organizing details and processes to find solutions.

7. Translating a work statement into computation.

8. Following a sequence or operation.

9. Proofreading to verify solutions and/or to locate errors.

READING SKILLS IN SCIENCE

1. Adjusting reading rate to the type and difficulty of the material and the purpose for reading
    a. realizing purpose for reading
    b. realizing reading difficulty of material
2. Locating, selecting and using information from various sources: indexes, table of contents, glossaries, card catalogues, Reader's Guide to Periodical Literature, general references, newspapers, specialized books, manuals and pamphlets.
3. Understanding and using correctly the vocabulary of science
    a. understanding the meanings of non-technical words and phrases used in science context
    b. understanding technical words and the basic Latin and Greek roots and affixes from which many scientific words are derived
4. Understanding and using scientific symbols, formulas and equations.
5. Understanding and using specialized presentations such as graphs, charts, diagrams, scales and maps to get information.
6. Reading for exact meaning by noting main ideas and supporting details.
7. Organizing ideas obtained from reading.
8. Reading, understanding and following directions
    a. recognizing the sequence of steps
    b. recognizing the relevance of steps in sequence to the purpose of the directions
9. Using the problem-solving technique
    a. formulating hypotheses
    b. collecting evidence
    c. evaluating evidence
    d. organizing pertinent evidence
    e. drawing conclusions
    f. testing conclusions

READING SKILLS IN SOCIAL STUDIES

1. Acquiring the vocabulary of the social studies

    a. using thought processes as well as memory to develop an adequate social studies vocabulary
    b. having a systematic, continuing method of word study for social studies vocabulary building

2. Comprehending the material of social studies

    a. using graphs, charts, tables, pictorial presentations, including maps and globes and other social studies material
    b. using methods for organizing materials, locating specific facts and interpreting abstract ideas
    c. understanding the basic concepts of time and space
    d. understanding chronological order and the relationship between past and present
    e. comprehending sequence of events, groups of simultaneous events, cause-to-effect and effect-to-cause relationships
    f. staying within limits of information in reaching conclusions

3. Adjusting speed of reading to purpose and type of content

    a. determining purpose for the reading of particular items and appropriate speeds for reading them
    b. recognizing types of content, the relative difficulty of comprehension, and appropriate speeds for reading each type

4. Using library methods to locate materials

    a. knowing sources of social studies materials
    b. knowing how to locate and use sources to find specific kinds of social studies material

II. GROUP READING INVENTORIES

Vanguard (Galaxy)
Grade Nine

ENGLISH GROUP READING INVENTORY

Parts of book

1. "On what page does the unit entitled 'People and Problems' begin?"

2. "Where would you look in your book to find information about an author of a particular selection?"

3. "In what part of the book can you find the meaning of a word that you might not know?"

Introduce story

Explore student background of experiences on the story "Clever Hans", p. 470-474 and set up purpose questions such as the following:

a. "Who is Hans?"
b. "What made him clever?"
c. "Do you think Mr. Von Osten tricked everybody?"

Students read the selection silently and the time required for reading it is noted.

Vocabulary

4. "What is meant by the word 'cues' as it is used in the story (page 471, column 1, line 13)?"

Contextual meaning

5. "What is meant by the word 'eminent' (page 472, column 1, line 6)?"

Synonyms and antonyms

6. "What word means the opposite of 'tenseness'?"

7. "Use another word to describe Mr. Pfungst when he looked baffled."

General knowledge of meaning

8. "Select the proper meaning of the word 'endowed'."

a. provided
b. produced
c. provoked
d. propelled

9. "Select the proper meaning of the word 'detect'."

a. hide
b. respond
c. discover
d. decide

10. "Select the proper meaning of the word 'repetoire'."

a. copy
b. list
c. code
d. role

Word Recognition: syllabication, accents

"Divide the following words into syllables and show which syllable has the primary accent."

11-12. unexplainable
13-14. imperceptible
15-16. design
17-18. questioner

Prefixes and Suffixes

19. "What does the prefix 'im' mean as used in 'imperceptible'?"

20. "What is meant by 'pre' in the word 'predetermined'?"

21. "Change the noun 'arithmetic' to an adjective."

22. "Change the verb 'satisfy' to a noun."

23. "Change the adjective 'scientific' to a noun."

24. "Change the adjective 'mere' to an adverb."

Comprehension: main ideas, details

25. "What happened when Hans was blindfolded?"

26. "How was Hans able to answer the questions?"

27. "Why was Mr. Pfungst able to solve the mystery of Hans' cleverness when all other attempts had failed?"

28. "What nationality was Mr. Von Osten?"

29. "What type of horse was Hans?"

30. "How long did it take Mr. Von Osten to train Hans?"

Drawing Conclusions: inferences

31. "Was Hans really capable of thinking like a human being? Why or why not?"

32. "Would Hans be able to answer a question you asked him? Why or why not?"

33. "What do the findings of Mr. Pfungst make you think about such feats as performed by Kreskin?"

Skimming

"Turn to the selection 'House of Flying Objects' p. 463-469."

34. "How much did the metal cap installed on the chimney cost?"

35. "Where was the Parapsychology Laboratory located?"

MATHEMATICS GROUP READING INVENTORY

Restating verbal problems

Read the following problem carefully and answer the four questions which follow it.

Problem 1

The yearly production of crude petroleum in Canada increased from about 129,000,000 to 274,000,000 barrels between 1955 and 1964. The value increased from about $306,000,000 to $674,000,000. Did the value of a barrel of crude oil rise or fall in this period? By how many cents?

1. Rewrite the above problem in your own words.

2. Why are you given <u>two</u> amounts of petroleum and <u>two</u> amounts of money?

3. What are you asked to find? (two answers)

4. Which basic mathematical operations must you use in solving this problem?

Adjusting one's reading

Read the following problem carefully to answer question five which follows it.

Problem 2

The area of Alberta is about 255,000 sq. mi. For each province listed, select the number that you think best compares its area with the area of Alberta.

a. Manitoba: 9.8, .98, .098
b. British Columbia: 1.4, .14, 0.14
c. Nova Scotia: 8.2, .82, .082
d. Quebec: 2.3, .23, .023
e. Saskatchewan: 9.9, .99, .099
f. Newfoundland and Labrador: 1.08, .108, .0108
g. Ontario: 1.6, .16, .016
h. New Brunswick: 1.1, .11, .011
i. Prince Edward Island: 1.0, .10, .01

5. Would you read problem 2 faster or slower than problem 1? Why?

6. Would you read a problem in mathematics differently then you would read a story? Why or why not?

7. What steps would you use in reading any mathematical problem?

Translating words to symbols

8. Joe is z yr. old. Write an algebraic expression for each phrase.

a. 7 yr. older than Joe
b. 3 yr. younger than Joe
c. 2 times as old as Joe
d. 5 yr. less than 2 times as old as Joe
e. as old as Joe will be in 10 yr.
f. as old as Joe was 4 yr. ago

Knowing symbol meanings

9. What is meant by each of the following symbols?

a. $\neq$ c. $\{\}$ e. $\cong$

b. $>$ d. $\cap$ f. $x^{(n)}$

Understanding vocabulary

sum	area	difference
radio carbon dating	gallons	product
quotient	meter	eight squared
ratio	ten-thousandths	twelve
less than	decimal five	volume

10. Which of the above words represent ideas of quantity?

11. Which of the above words represent number figures?

12. Which of the above words represent operations?

13. Which of the above words represent kinds of measurement?

14. Define each of the following:

a. additive inverse
b. proportion
c. composite number
d. median
e. isosceles

Noting relationships in formulae and equations

Read the following problem carefully to answer questions 15, 16, and 17 which follow it.

The sum of three numbers is 10. (1) If you subtract the second number from the first, the result is 30, (2) and if you add the second and third, you get -8. (3)

15. Write an equation to express the first relationship in the above problem.

16. Write an equation to express the second relationship in the above problem.

17. Write an equation to express the third relationship in the above problem.

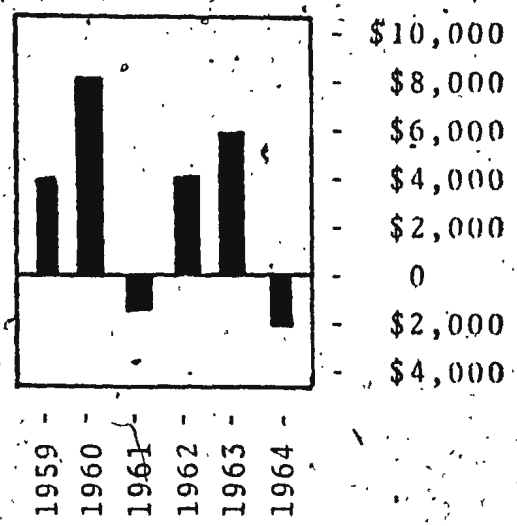
18. Write out the following equation in your own words.

$8x + 2 = 30$

Obtaining information from charts, tables and graphs

19. Read problem 9, page 235 in your textbook and draw a diagram to illustrate the problem.

20.



The graph above represents the net earnings of a company from the years 1959-64. Answer the following questions on this graph:

a. What was the difference between the net earnings for the years 1963 and 1964?
b. What was the total loss in income for the years 1961 and 1964?
c. What was the average earnings for the years 1960 and 1963?

Exploring Science
Grade Nine

SCIENCE GROUP READING INVENTORY

Parts of book

1. "On what page would you find the chapter entitled 'Supplying Our Cells'?"

2. "Of what value to you are the questions under the chapter section titled 'Review Questions'?"

3. "What section of the book would you use to find the page reference of the topic 'Flood Planes'?"

Library

4. "How are topics arranged in a reference book?"

5. "What is a biography?"

6. "Explain the difference between science fiction and science factual materials?"

"Read pages 434-437."

Vocabulary

7. "Turn to page 434, Section 'Radiation from Sparks,' line 8. What is the meaning of the word 'radiate' as used by the author?"

8. "What does the word 'oscillate' mean?"

9. "Use the phrase 'magnetic field' in a sentence."

10. "When electric and magnetic fields together radiate from an antenna they are known as _____."

Main ideas

11. "When a rubber rod is rubbed with wool, sparks are produced. When this is done near a radio why does the radio crackle?"

12. "What causes an electric spark?"

13. "What was the reason given for energy loss in a condenser?"

14. "What was the most important result of the suggestion that energy might be radiated by combined electric and magnetic fields?"

Pertinent details

15. "Why is the word 'waves' confusing in the term 'electromagnetic waves'?"

16. "Why must you not allow the switch on a dry cell to remain closed for a long period of time?"

17. "When making a simple oscillator why are the file and wire taped where they are to be held?"

18. "How is a crude condenser formed?"

Following directions

19. "What is the first step in setting up an oscillating magnetic field?"

20. "How do you reverse the current in an oscillating magnetic field?"

Drawing conclusions

21. "What happens when the charge on the two plates in a condenser is reversed?"

22. "What does an electric field have in common with a magnetic field?"

23. "Why are graphs used in studying electromagnetic waves?"

Application

24. "Name one result that came from the discovery and study of electromagnetic waves?"

25. "What would you have to do to a spring to make it oscillate?"

26. "Note the third diagram of the spreading fields of magnetism on the bottom of p. 436. What common thing in nature does this remind you of?"

Formulas, symbols

27. "What does the H refer to in the symbol H_2O?"

28. "Write using symbols 'forty degrees Fahrenheit'."

Canada: A New Geography
Grade Nine

SOCIAL STUDIES GROUP READING INVENTORY

Parts of book

1. "What section of your book tells you where to find the map that shows 'Economic Development Regions of Ontario'?"

2. "On what page does Chapter Eleven begin? What is the title of this chapter?"

3. "How can an introduction to a chapter help you in your study?"

4. "Of what value are the questions and activities shown on page 131 to you for understanding the material in the textbook?"

5. "In what part of the book would you look to find the page references of this topic: dinosaurs?"

Use of resources

6. "What library aid will tell you the library number of the book, Canada: A New World, so that you would be able to find it on the shelves?"

7. "What is a biography?"

8. "Name one set of encyclopedias. How are the topics in them arranged?"

Use of maps, charts, etc.

9. "What does the map on page 320 show you? Do not give the title."

10. "What do the green areas shown on the map on page 444 represent?"

11. "Turn to page 202. What three provinces represent the largest concentration of population in Canada in 1966?"

12. "Turn to page 213 (top picture). What is the Eskimo's house made of? Why is that type of building material used?"

"Read pages 420-423."

Understanding vocabulary

13. "Define free trade."

14. "What is meant by the term 'trade preference'?"

15. "What is a tariff?"

Noting main ideas

16. "Why was Windsor chosen as the site of Canada's first automobile factory?" (p. 422)

17. "What caused the Canadian automobile industry to expand?" (p. 421-422)

18. "Why did the Canadian Government impose a tariff on automobiles and auto parts that could be produced in Canada?" (p. 420)

Noting details

19. "Who established the first automobile factory in Canada?" (p. 420)

20. "How many people are employed in the Canadian automobile industry?" (p. 420)

21. "What province produces the most Canadian made automobiles?" (p. 423)

Drawing conclusions

22. "Why do you think the Canadian automobile industry will continue to expand?"

23. "Why are certain places chosen as sites of automobile factories rather than others?"

24. "Do you think automobiles will continue to dominate our way of life in Canada? Why?"

Organization

25. "Each author follows an outline in writing the information in your textbook. In looking through Chapter Eleven, if you were to outline the material, what would be the I, II, III main topics of your outline?"

III. DEVELOPING VOCABULARY IN THE CONTENT AREAS

Content area teachers can make an important contribution to the reading improvement of their students particularly in the area of vocabulary development. They can give their students self-help techniques for improving their vocabularies through their regular class instruction--and they need not necessarily take additional class time. Systematic instruction in the following five areas should constitute a sound programme of vocabulary development.

1. Pre-teaching "stopper" words. Teachers can take down the obstacle course before students read an assignment by pre-teaching selected words. They can search through the assignment beforehand, pulling out "stopper" words, and then introduce these in context.

2. Making use of context clues. Since context clues can be a tremendous help to students in learning the vocabularies of almost all their subjects, a strong case can be built for giving students all the help possible in the use of context clues.

3. Greek and Latin word parts. When we give students a working stock of common Greek and Latin word parts and teach them to use these in combination with context revelation, we are helping them acquire numbers of related English words.

4. Studying word origins. In any subject classroom, referring to a word's derivation may be helpful in strengthening

retention of the meaning.

5. Dictionary skills. Teachers can assist pupils to locate unknown words in a dictionary, pronounce them correctly, and search for the definition that helps them understand the unknown word in the particular context involved.

A Five-Part Strategy for Word Attack

Opportunities to encourage systematic word analysis abound in content area classrooms. Teachers can capitalize on these opportunities from day to day to help students build crucially important techniques for on-their-own habits. Students are frequently told that whenever they meet an unknown word they should immediately reach for their dictionary. But if they reach for it too soon, they will be overlooking other highly effective, often speedier means of coping with unfamiliar words. Rather, they should be equipped with a method for systematically attacking an unknown word. Such a method might be comprised of the following:

1. Launch your attack by searching the word's context for clues. Crack down on the word instead of reading right on past it without a try. Context is likely to be your most important single aid.

2. Look for word part clues. Take the word apart if you can. Do you recognize any part--a root? a prefix? a suffix? an inflectional ending? Words that at first look difficult can often be broken down into well-known building blocks.

3. Work through the word, syllable by syllable. Try to sound out the word by easy-to-manage syllables.

4. Try a shift in pronunciation. If you have not yet arrived at a word you know, attack it again by seeing if a change--perhaps in syllable division or accent--gives you a break-through.

5. Reach for the dictionary. If after Steps 1-4 the word still defies you, now is the time to turn to your dictionary.

Activities for Motivation and Enrichment

Teachers can use an assortment of "word play" activities, particularly for less mature students, to intrigue and stimulate. Even with more mature students, a lighter approach may sometimes be desirable. Such activities offer opportunity for the reinforcement of vocabulary learnings.

Activities for motivating students, easily adaptable to various subjects, are offered in this section. At times specific examples are given illustrating how these activities can be adapted by teachers for their particular content area.

1. Authority for the moment. Each student selects from his collection a word he considers especially useful to the class, makes himself an authority on this word, and becomes the "authority for the moment". He announces his word, explains the derivation (if helpful), uses the word in a sentence, and then challenges someone to give the meaning. Students often refine their knowledge of a word and devise sentences painstakingly when they are to be the authority.

2. Word-calling game. Students exchange collections and call the words to each other, counting the number of correct responses as the score. They are aware that words have more than one meaning and that their partner is supposed to give the meaning that fits the context recorded on his word slip.

3. Word charades. After certain words have been studied, selected ones that lend themselves to charades are printed on slips and dropped into a box. Each student pulls out a slip, then presents a pantomime that suggests the meaning of the word. Class members are to guess the word that is being dramatized.

4. What would you do with...? A particular teacher piques interest by writing on the board a question like this: "What would you do with a cortege?" Her students suggested, "Lock it in a cage," "Keep it in my locker," "Send it to a girl before a dance," and "March it in slowly." Curiosity prevailed--many looked up the word and knew its meaning the next day. They found the question still on the board, and some were amused by their guesses of the day before.

5. I'm thinking of a word... This drill is fast paced, many participate, and students practise and hear the pronunciations of their new words. Using words already studied, the teacher or a student leader supplies a double hint--the meaning of the word and its first and last letters. Students guess the word.

6. Match-ups. The teacher or a group of students compiles a list of useful new adjectives (in good taste) which can be used to describe the personality traits of classmates as well as other students and staff members around school. Using their dictionaries, students match adjectives and people they know, then compare the match-ups.

7. Fill the blank. This activity is fast-paced, all participate, and students practise and hear the pronunciations of new words. Using words from a group already studied, each student composes a sentence leaving a blank in which one of the new words is to be inserted. The student reads his sentence, then calls on someone. If the classmate fills the blank correctly, it becomes his turn to offer his sentence.

8. Browsing box. One teacher suggests a large browsing box. Students with an extra five or ten minutes at the end of the period can select a word activity from it. Compartments with standup flags and colorful folders catch the eye of the student. Activities include clippings of the "Wit-Twister" column in "Saturday Review", games like Perquacky, Jotto, Probe, and Scrabble, and word puzzles, including cross-words.

9. The "divided page". Have students set aside a section of each of their notebooks as a glossary. As they come across a new key term in their subjects encourage them to collect it for their glossaries. Using the "divided page" technique, they make a line down the middle of a page in

their notebook. In the "Key Term" column to the left, they record the new word. In the "Meaning" column to the right, they enter the meaning of the word with an illustrative sentence. The end of each unit is marked with a double line. Then when they want to go back and check on the new words they've studied in a certain unit, they'll know exactly where to find them.

10. Crossword puzzles. Develop crossword puzzles which involve the use of new concepts. Encourage the students to construct similar puzzles and to exchange them with others.

11. Categorizing (science). Present lists of words which pupils must classify under three or more headings. Example: Directions: Below are a list of words. Each is to be placed under one or more of three categories. Be prepared to defend your decisions.

ellipses	planetoids	corona
apogee	eccentric	mass
umbra	epicycles	perihelion
perigee	penumbra	lunar
aphelion	satellite	comet

Words Pertaining To Orbit	Words Pertaining To Eclipse	Objects in Space

12. Matching (science). Prepare a list of words and definitions based on newly introduced vocabulary and direct pupils to match the two. Example: For the following definitions place the number of a word to be found in the right hand column on the line before the definition which best fits the word:

1. perihelion	a. ___	an object which travels in orbit around a planet
2. aphelion	b. ___	a minor planet
3. planetoid	c. ___	the point at which the earth is closest to the sun
4. satellite	d. ___	the point at which the earth is farthest from the sun

13. Scrambled words (science). Students are given lists of words with their letters in scrambled order, followed by a definition that states the meaning of the word when put in its correct spelling. Students are directed to read each of the definitions and then unscramble the word to mean a word corresponding to the given definition. New words have to be written on the blank provided. Example:

mpenrbua	the gray region of a shadow	_____
tmoce	a small heavenly body with a long glowing tail	_____
tvolecyi	the speed of an object in relation to its size	_____
alxgay	a cluster of stars grouped in a lens-shape	_____

14. Classifying words (mathematics). Students are directed to eliminate the word that does not belong to a group of words and place the number of the group in the correct column. Example:

1. plane	2. line	3. meter
horizontal	point	foot
angle	oblique	precision
perpendicular	set	error
4. interest	5. diagram	
ratio	unlimited	
commission	oblique parallel	
decimal equivalent	betweenness	

Correct category is as follows:

GEOMETRY	MEASURE	PERCENT
_____	_____	_____
_____	_____	_____

15. Word analysis and meaning (social studies). A definition is given followed by the first letter of the correct word, the proper number of blanks for the remainder of the word and the appropriate syllable division(s).

Example: Follow these directions:

a. Give the two syllable word which means tax on imported and exported goods.
T _ _ / _ _ _

b. Give the three syllable word which means money.
R _ _ / _ / _ _ _

c. Give the five syllable word which describes one who loves his country.
N _ / _ _ _ _ / _ _ / _ _ / _ _ _

16. Word puzzle (social studies). The following is a puzzle of words which are defined below. Starting with number one, read the definition for one and think of a word that fits it, has as many letters as provided blanks, and has the letter "e" in the same blank as provided on the

line. Do the rest in the same way.

1. _ e _ _ _ _ _ _ _ _

2. _ _ _ e _ _ _

3. e _ _ _ _ _ _ _

4. _ _ _ _ _ _ _ e _

Definitions:

a. a time of falling prices, wages and little employment

b. not of one's nationality

c. pertaining to money

d. all the citizens of a place are moved from that place

IV. COMPREHENSION

Teachers can upgrade their students' reading comprehension in any classroom where reading is required. They can do this as they go about the everyday activities of the course--as they make the assignment, as they help students master a textbook chapter, as they formulate questions on their reading selections.

The following suggested guidelines should help teachers improve their students' reading comprehension. To help toward better reading, an assignment should have several of the components listed below. Not all of these, however, are called for in all assignments.

1. Capturing interest. An important component of a student's reading readiness for an assignment is interest caught up beforehand.

2. Relating the reading to the students' past experience or providing a background of experience. It is often of immense benefit in strengthening the reading power of students for an assignment not only to relate the new learning to their previous experience but also to provide them with background experience.

3. Helping the students have a purpose for their reading. If students are to read an assignment with adequate comprehension they must be provided with a purpose for reading it. Among the various ways teachers can encourage their students to read purposefully are: (1) providing them

with guiding questions, and (2) helping them formulate their own guiding questions.

4. Helping students know how to read to accomplish their purpose. Like other skills, reading skills are best learned in a functional setting, ideally in the very situation in which they will be used.

5. Pre-teaching vocabulary and concepts which would otherwise block students' understanding.

6. Providing, when appropriate and possible, reading materials on a suitable variety of levels.

The following pages offer ideas for developing some of the comprehension skills identified by teachers as necessary for effective reading of content area materials.

Techniques for Teaching Comprehension Skills

1. Reading to Get the Main Idea. This skill is basic to several comprehension skills such as reading to generalize or to differentiate between fact and opinion.

(A) Suggested Steps in Teaching the Main Idea.

Step 1: Recognizing Key Words in Sentences

a. Reducing sentences to telegraph form

b. Underlining key words in sentences

Step 2: Recognizing Key Words in Paragraphs

Step 3: Recognizing the Main Thought of a Paragraph

a. When the main thought is expressed in a key sentence at the beginning of a paragraph

b. When the main thought is expressed in a key sentence at the end of a paragraph

c. When the main thought is not explicitly stated but must be inferred

Step 4: Application of the Steps Above to Continuous Material from Content Area Textbooks

(B) Use the title and paragraph or section headings as clues in discovering the chief thought:

a. Have the pupils make questions for each heading. By making such questions for studying the section, the pupil has set up a purpose for his reading.

b. Have the pupils invent their own titles for the material being read.

c. Encourage pupils to write subject headings for reports and similar materials.

(C) Choose from material that is being read by the pupils several paragraphs that contain good key sentences. Write the key sentences on the blackboard. Have the pupils find the paragraph from which each was taken.

(D) Provide a series of paragraphs each followed by several possible headings, one of them correct, one too inclusive, and one or two which are misleading or contain misstated facts. Have the pupils select the correct heading and give their reasons for their choice.

(E) Write newspaper headlines that summarize paragraph contents.

(F) Suggest other titles for an article or selection.

2. Reading for Supporting Details. After the student has developed sufficient skill in determining the main ideas he will recognize for himself the need for skill in reading for details, for without these the general ideas will lack depth and the degree of meaning he needs to master the subject matter. After introductory work with paragraphs, students

practise with paragraphs in which the main idea sentence has various locations in the paragraph and is supported by clearcut details.

In paragraphs in which the main idea is expressed at the beginning, students are asked to anticipate what lies ahead in the rest of the paragraph. They discover that the main idea sentence often provides a strong clue about what is to follow: supporting details, a clarifying example or two, an explanation or reasons, the details of a comparison or contrast, a series of steps in time order, the steps in a process. They experience being able to grasp the details with less effort once they foresee the trend of a paragraph.

Activities such as the following can be used to help students develop skill in finding supporting details:

(A) Give specific questions that pupils can answer after reading.

(B) Have pupils determine the topic sentence of a paragraph and then find evidence to support the idea expressed.

(C) Secure class agreement on the main idea of a paragraph or whole selection and have pupils find evidence to support this idea.

(D) Have pupils jot down important details as they read and then rank them in importance according to criteria agreed upon by the class.

(E) Ask pupils to compose questions about details of the selection that they consider important.

(F) Assign pupils to write topic sentences with supporting details, then construct paragraphs.

(G) Guide pupils to determine details which are irrelevant or of no value and discard them.

3. Reading to Determine Organizational Patterns. There are two organizational structures by which any written material can be identified external and internal. External organization focuses on format and physical features, while internal organization is concerned with the organizational structure which authors use as they write. The internal organizational structures characteristic of expository material which appear with regularity in text materials used in content area classes are main idea/detail, cause/effect, comparison/contrast, time order and enumerative order. The main idea/detail pattern is so broad that it often subsumes each of the other patterns. It is also basic to other organizational patterns, and students should be thoroughly familiar with it before proceeding with work on the other four patterns.

Organizational patterns characterize entire works as well as single paragraphs. For example, a full chapter in history may be organized in an enumerative order, another in a cause/effect pattern. At the same time, single paragraphs within those chapters may be similarly organized. Often a mixing of organizational patterns occurs within both single paragraphs and longer selections. Though there is frequently such a mixture, we generally find a predominant pattern within paragraphs or longer selections. Students can be taught to focus on the dominant pattern and to use as an aid to understanding relationships within the material as well as an aid for recall after the reading has been

completed.

The following suggestions may be used by teachers to promote students' understanding of each of the organizational patterns:

(A) Cause/Effect Pattern. An excellent method of assisting students in understanding the cause/effect pattern is to provide them with a study guide which they can use as they read a selection based on this pattern. The following study guides were developed by the intern to illustrate the cause/effect pattern of a chapter of a grade nine history text. The chapter was entitled "The Depression Begins".

Study Guide I.

Directions: Read the statement. Read the page in your book to find the cause for each effect. Select the best cause from those listed at the end of the study guide. Write it on the line after the page number.

1. Cause: (p.182) _____

_____

Effect: The United States could not afford to buy back the things which they themselves produced.

2. Cause: (p. 183) _____

_____

Effect: A world economic crisis.

3. Cause: (p. 184) _____

_____

Effect: A "crash" on the New York stock exchange.

4. Cause: (p. 189) _____

_____

Effect: The Soviet Union had no problem of unemployment.

5. Cause: (p. 189) _____

_____

Effect: Individual farms were replaced by large collective or co-operative farms in the Soviet Union.

6. Cause: (p. 190) _____

_____

Effect: The rise of Hitler in Germany.

7. Cause: (p. 187) _____

_____

Effect: The defeat of Mackenzie King.

Causes to choose from:

1. To allow peasants to move to factories.
2. Most Americans were farmers, miners, fishermen and factory workers who made little money.
3. Americans stopped lending money across the Atlantic to other countries.
4. She had a planned economy not based on loans from other countries.
5. The businessmen could no longer sell their goods at a profit.
6. The people were looking for someone to blame for the depression.
7. The economic grisis in the United States.

Study Guide II.

Directions: When certain situations are true (cause), other situations result (effect). Below are listed causes and effects. Match them to show a cause/effect relationship.

Cause	Effect
1. a. Income tax was too high	American workers lost jobs
b. Businessmen decided to produce less	
c. There were no raw materials to make goods	
2. a. The deepening depression	The radical "ginger group" in the Canadian House of Commons
b. Disagreement with foreign policy	
c. Disagreement with the tariff system	

Now the cause is given. Find the effect.

3. System of collective or co-operative farms in the Soviet Union	a. Soviet Union becomes industrialized
	b. A shortage of workers
	c. Peasant farms were liquidated
4. The economic crisis hits Germany	a. Hitler rises to power
	b. Britain seeks Germany's friendship
	c. Germany becomes a great world power

(B) Comparison/Contrast Pattern. Study guides similar to those prepared to illustrate the cause/effect pattern could also be devised for the comparison/contrast pattern. A study guide could be given to students which lists sets of comparisons and contrasts. Students could be

asked to check each set they can find in the assigned reading selection.

(C) Time Order and Enumerative Order Patterns. Exercises such as the following may be used to develop proficiency with both of these patterns:

a. Guide pupils to the clues that authors provide to signal the order of events in a selection by writing first, second, third, etc., by using numbers (1), (2), (3), etc., and other signal words and phrases to meaning.

b. Construct a time line depicting the order of events as they occurred in a selection.

c. As students read a selection have them chart the events in their order of occurrence

d. Present a number of events in scrambled form and have the students rearrange them into correct sequence.

4. Reading to Interpret Verbal Problems in Mathematics. Perhaps one of the most important comprehension skills in mathematics is the ability to read word problems. The following suggestions are provided for teachers to assist their students in improving their understanding of word problems:

(A) Encouraging a step-by-step procedure may persuade superficial readers to give word problems a more deliberate reading.

a. Read the problem thoroughly, asking "What is this all about?"

b. Reread the problem, asking "What am I to find here?"

c. Ask yourself, "What facts are given?"

d. Next, plan your attack.

e. Estimate the answer.

f. Carry out the operations.

g. Check your work.

(B) The value of slow careful reading of each problem should be emphasized. While reading, the pupil should be concerned with the basic parts of each sentence including important words or word cues and facts and figures which are important ingredients in solving the problem.

(C) Teach the understanding and proper use of cues in verbal problems, such as, "is" may mean "equals" and "of" may mean "multiply" in specific situations.

(D) Show the pupil how the verb in a verbal problem often acts as the equal sign between two parts of an equation as, "Mary's age two years ago was 10 less than twice her age now." $(x - 2 = 2x - 10)$

(E) Work sample verbal problems with the class and list the steps used in the plan of attacking the problem.

(F) Use different types of diagrams to illustrate the steps in the solution of a verbal problem. For example: "How many nickels, dimes and quarters are there in $5.75 if there are twice as many dimes as nickels and two more quarters than dimes?"

Kind	Number	Value
nickel	x	$5x$
dime	$2x$	$10(2x)$
quarter	$2x + 2$	$25(2x + 2)$

$5x + 10(2x) + 25(2x + 2) = \$5.75$

$x = 7$

(G) Teach the pupil who has difficulty in interpreting mathematical terms to substitute synonyms that he can understand.

(H) Provide supplementary verbal problems for the class by listing problems of varying levels of difficulty on separate sheets.

(I) Give students a list of basic facts and figures and let them construct word problems which will require the reader to use any one of several arithmetical procedures to solve the problems. One should emphasize that all necessary information must be included in each problem if it is to be understood and solved in a reasonable length of time.

(J) Students could be encouraged to estimate the answer to a problem before they work out the solution. Problems can be dittoed with several estimated answers printed below each problem, and students are asked to indicate their choice of "guesses".

(K) Students could try the easy numbers technique by rewriting the problem substituting easy numbers for those in the problem.

5. Following Directions (science). The ability to follow directions was a skill identified by science teachers as having particular relevance to their subject. The following suggestions were provided for teachers to assist them in

promoting this particular reading skill:

(A) The directions for a given activity may be printed in scrambled sequence. Each student should be asked to place the statements in proper order.

(B) Have students make jottings in their own words of the steps involved in a procedure. Then, have them follow the procedure step-by-step.

(C) Require students to number the consecutive steps when reading directions.

(D) Discuss the reasons with the students for the particular sequence of steps they must follow in a given set of directions.

(E) Point out to pupils the value of reading the entire set of directions to first obtain a general understanding of purpose and method.

(F) Require the pupils in the second more deliberate reading of the directions to determine how the steps in a sequence, if followed, will achieve the purpose.

(G) Show, by demonstration, the value of rereading directions during the process of completing a long series of directions to be sure that they are followed exactly and in sequence.

(H) After completion of a project, when the purpose has not been achieved, restudy directions to see where the error has occurred.

6. Understanding Maps, Tables and Charts (mathematics, science, social studies). In the areas of mathematics, science, and social studies, there is a great deal of important information conveyed through the use of graphic aids. Yet, students often skip through this material with little appreciation of its importance or its relationship to accompanying explanations.

Teachers must instruct students in interpreting such material and provide carefully planned practice in reading

graphic aids throughout the year. The following activities could be used to provide students with the necessary practice:

(A) Bring in illustrations of various types of graphic aids and explain how they can be used and the type of information they provide.

(B) Discuss the purpose of specific graphic aids as they are met in the textual materials.

(C) Give practice problems for students to demonstrate graphically.

(D) Propose conclusions that might be drawn from a specific graphic aid and have pupils decide on their validity.

(E) Have students list as many conclusions as possible that may be drawn from a specific graphic aid.

7. Adjusting Reading Rate to Content (all content areas).

Students need to be made aware that their approach should vary according to the reading situation and that they must be given instruction and further practice in adjusting their reading rate to the materials of each content area and to their purposes in reading them. Methods that teachers could use to assist students in adjusting their speed of reading to the purpose and to the type of content are as follows:

(A) Point out that different material, different subjects, and different paragraphs within the same story have great variance in the degree of readability and comprehension.

(B) List purposes for which pupils might read and determine the possible speed of reading for each purpose.

(C) Compare the time necessary to read a section of a book when the reader wants to generalize with the time necessary to read the same section when he wants to find specific details.

(D) Set up time limit appraisals to determine the value of a quick look at table of contents,

titles, subtitles, and pictures to gain an overall idea of the contents.

(E) Set up time limit tests to see how much general content and/or details can be learned from looking at each paragraph quickly and noting italics, dates, and figures.

(F) Compare the time necessary to read sections of the same length in different types of writing: essay, novel, poetry, problems in mathematics, a technical explanation in science, and a section from a history text.

V. STUDY SKILLS

If secondary school pupils are to develop efficient techniques of study in many different content areas, it is the responsibility of every teacher to provide continuous guidance in using the textbooks and references that pupils use in their classes.

The study skills chosen for inclusion in this section are: (1) general features of books, and (2) organizing information.

1. General Features of Books. Students should be aware that there are specific skills which must be applied to any text in order for it to become a useful tool to increase their knowledge and use of the content. They need to learn that these parts vary according to the subject area which the textbook serves. The following materials contain a guide to assist teachers in acquainting their students with the various parts of their textbooks and related resource materials.

(A) Introduce textbook and assist students in recognizing aids to study in their text and how these may be used.

a. Give students an opportunity to look through textbooks. As they look through the books ask them to see how many parts of the text they can find that will help throughout the year in using this as a basic reference. Also look for parts of the text which should be used throughout the year.

b. After the students have looked through the textbooks, ask them to name the parts of the text that should help them in using the text. As these are mentioned, they should be listed on the board. The following should be mentioned

in class discussion, elicited by questioning on the part of the teacher, or added by the teacher:

1. Title Page
2. Copyright Page
3. Table of Contents
4. Table of Maps and/or Charts
5. Dictionary of Terms - Pronunciation Key
6. Index

Discussions should follow on each part of the textbook, the way in which each can be used and the information which each part makes available to the student. Probably these lessons would cover at least two days, maybe more, especially with slower classes. Divide the discussion of specific parts into two sections, covering A-C on one day and D-F on the second.

(B) For the slower students sample exercises should be given in class and in some cases an entire worksheet should be gone over in class. With average and above average classes, have them do these on their own, then discuss the findings later in class. For above average students, have samples of other texts on the same topic and have them compare these to each part of the outline and especially to the contents to see the difference in the topics and in the order used. Following are sample exercises suggested for use after having discussed each of the features of textbooks in class:

Exercise I

1. What is the title of your book?

2. When was it published?

3. Why should you notice the date of publication?

4. What study helps do you find in your book?

5. Where is the table of contents?

6. Where is the index?

7. Where is the word list or glossary?

   a. Why is it a good study habit to use the word list in a book?

   b. If a book does not have a glossary, what reference do you need to use?

8. Does your book have a preface or introduction?

   a. What does the preface usually tell you?

   b. When do you need to read the preface?

9. Does your book have an appendix?

   a. Can you find another book that has an appendix?

   b. In what part of the book is it found?

   c. What type of material is in the appendix?

   d. How does the appendix help you?

10. Does your book have a bibliography?

    a. If not, name a book that does have a bibliography.

    b. How does the bibliography help you?

11. Does your book have section headings?

    a. If so, of what value are they?

    b. What types of books usually have section headings?

12. Find a book that contains a type of heading different from a section heading?

    a. How does this heading help you?

    b. What is a side heading?

    c. Find two examples of a side heading and note the references.

d. How does a side heading help you in your study of a topic?

Exercise II.

Below are two columns of words or phrases. One phrase or group of words in the right-hand column means the same, or almost the same, as one in the left-hand column. In the space before each item of the left-hand column, place the number of the expression in the right-hand column which most nearly defines or describes its meaning.

_____ Index	1. Name of book
_____ Table of Contents	2. Part of a book giving additional information, as notes and tables
_____ Bibliography	3. Introduction
_____ Appendix	4. List of books for further reading
_____ Glossary	5. Alphabetical list of topics with the page on which each is found
_____ Preface	6. Year when book was published
_____ Title	7. List in front of book with chapter headings or topics in sequence and page on which each begins
_____ Date of Publication	8. List of words with their meanings

2. Organizing Information. Outlining is another way of organizing information. But it is impossible to outline without an understanding of organization and the relationship of details to a main idea. There are many students who find outlining an exercise in frustration and confusion because they don't see its purpose and don't know what they are doing,

or why.

Many of the problems students have with reading skills are the result of lack of information. A student cannot be given poorly organized or difficult paragraphs and be expected automatically to make a good outline. Initially, exercises should include simple, well-organized paragraphs that can be outlined easily and which follow a logical pattern of thought.

The following suggestions are offered to assist teachers in guiding their pupils to develop proficiency in outlining:

Step I: Teacher and pupils work together and select the main topics.

Step II: Pupils, unaided, select the main topics. Teach pupils to find the main topics and to place them in outline form. Use books with paragraph headings.

(A) Have pupils read the paragraphs and discuss the headings. Suggest other possible headings and have pupils decide why the author selected the headings he used.

(B) Match a given list of paragraph headings with numbered paragraphs.

(C) Have pupils read a paragraph with this question in mind, "What is the main idea in this paragraph?" Write a number of suggested answers on the blackboard. Choose the best one.

Step III: Teacher and pupils select the main topics, leaving space for sub-heads. Teacher and pupils then fill in these subtopics.

Step IV: Main topics are selected by the teacher and pupils and are written on the blackboard. Pupils then fill in

the subtopics unaided. Further practice in filling in subtopics should be provided.

(A) The teacher writes the main topics on the board or uses a text that has the main headings. Teacher and pupils then fill in the sub-heads.

(B) Have pupils skim other articles for more information and read carefully when additional material which is suitable for sub-heads is found. Add these new sub-heads. Do the same for new main topics.

(C) When pupils have gathered sufficient data, have them reread the complete outline and, if necessary, rearrange the order of the topics.

Step V: Pupils write the topics and sub-heads without help.

Step VI: Pupils organize, in outline form, data gathered from many sources. To accomplish this, pupils must be given instruction in making a standard outline form. Emphasize the fact that in a correct outline there must always be more than one item in the series under any subdivision. If there is an "a" there must also be a "b"; if there is a "1" there must also be a "2", etc..

Step VII: Have pupils use the outline form in preparing and giving oral reports.

Step VIII: To check pupils' ability to make outlines, prepare lessons based on the following suggestions:

(A) List main points and subpoints consecutively. Have pupils copy these, indenting to show subordination of subtopics and writing correct numbers and letters in front of each point.

(B) List main topics and subtopics in mixed order and have pupils rearrange and number them.

(C) List main topics with Roman Numerals. List subtopics (all one value) with Arabic Numerals.

Have pupils organize subpoints under correct main points.

(D) Present short paragraphs of well-organized material and have pupils write main topics and specified number of subtopics.

(E) Present part of a skeleton outline and have students complete it.

(F) Have pupils outline a problem without assistance. Class discussion is valuable in checking a lesson of this type.

APPENDIX C. Reading Materials

READABILITY LEVELS OF SCIENCE RESOURCE MATERIAL

Author	Title	Library Number	Grade Level
1. Amos	The Life of the Seashore	574.92	7
2. Antoine	Wonders of the Weather	551.5	7
3. Archer	Rain, Rivers and Reservoirs	333.9	9
4. Arnov and Mindlin	Wonders of The Deep Sea	551.4	9
5. Aylesworth	This Vital Air: This Vital Water	614	10
6. Baker	The Vital Process: Photosynthesis	581.1	10
7. Barr, Geis and Keen	The Wonders of Prehistoric Life	560	8
8. Bateman	How Man Began	573.2	7
9. Bell	Thunder-Storm	551.5	7
10. Berrill	The Life of the Ocean	574.92	9
11. Bova	Planets, Life, and LGM	523.1	8
12. Bowman	On Guard: Living Things Defend Themselves	591.5	8
13. Branley	Solar Energy	621.47	7
14. Branley	The Sun: Our Nearest Star	523.1	1
15. Branley	The Earth: Planet Number Three	525	9
16. Colbert	Millions of Years Ago	560.97	8

Author	Title	Library Number	Grade Level
17. Cosgrove	Wonders Under a Microscope	578	7
18. Dowden	Look at a Flower	582.13	7
19. Duffey	Conservation of Nature	333.7	12
20. Ehrlich	Population, Resources Environment	301.3	College
21. Farb	Ecology	574.5	11
22. Freeman and Patton	The Science of Chemistry	540	7
23. Freeman	All About Electricity	621.3	7
24. Frisch	Plants That Feed The World	581.6	8
25. Gallant	Exploring The Planets	520	9
26. Gamow and Stubbs	The Moon	523.3	10
27. Geralton	The Story of Sound	534	6
28. Glemser	All About Biology	574	7
29. Goldman	Controlling Pollution	333.9	College
30. Graham and Dersal	Water for America	333.9	8
31. Gramet	Sound and Hearing	534	8
32. Halacy	The Water Crisis	628	9
33. Hammond	The Riddle of Seeds	582	3

Author	Title	Library Number	Grade Level
34. Helfman	This Hungry World	338.1	7
35. Hirsch	The Living Community	574.5	8
36. Hogben	The Wonderful World of Energy	621	11
37. Hogner	Earthworms	595	4
38. Hogner	Conservation in America	333.7	10
39. Hutchins	Plants Without Leaves	588	9
40. Hutchins	The Amazing Seeds	582	7
41. Hyde	This Crowded Planet	333.7	10
42. Irving	Energy and Power	531	7
43. Irving	Volcanoes and Earthquakes	551.2	6
44. Joffe	Conservation	333.7	10
45. Kavaler	Dangerous Air	614	8
46. Kavaler	The Wonders of Algae	589	6
47. Lauber	Your Body and How It Works	612	3
48. Lavine	Wonders of the Anthill	595.79	7
49. Lerner	Who Do You Think You Are?	575	6
50. Lewis	This Thirsty World	333.9	12

Author	Title	Library Number	Grade Level
51. Lewis	Clean the Air	614	10
52. Ley	Inside The Orbit of the Earth	523.4	11
53. Lowenherz	Population	301.3	8
54. Marcus	The First Book of Glaciers	551.3	6
55. Marshall	The Air We Live In	614	7
56. Matthews	The Story of the Earth	551	8
57. Munch	What Is A Solar System	523.2	6
58. Niering	The Life of the Marsh	574.929	8
59. Ostram	The Strange World of Dinosaurs	568	8
60. Pearl	Wonders of Rocks and Mimerals	549	7
61. Perry	Our Threatened Wildlife	639	9
62. Pfeiffer	The Cell	574.8	College
63. Ross	Weather	551.5	11
64. Ruchlis	The Wonder of Heat Energy	536	8
65. Scott	Hunger	338.1	College
66. Silverstein	Bionics	001.5	9
67. Silverstein	The Digestive System	574.1	7

Author	Title	Library Number	Grade Level
68. Simak	Trilobite, Dinosaur and Man	560	10
69. Sollers	Ours Is The Earth	333.7	9
70. Sterling	The Story of Mosses, Ferns and Mushrooms	588	6
71. Sutton	The Life of the Desert	574.909	7
72. Victor	Magnets and Electromagnets	538	6
73. Yates	The Boys' Book of Magnetism	538	8
74. Young	Extraterrestrial Biology	523.1	College
75. Zim	Comets	523.6	8

READABILITY LEVELS OF SOCIAL STUDIES RESOURCE MATERIAL

Author	Title	Library Number	Grade Level
1. Appel	South America	918	8
2. Arno	The Golden Days of Greece	938	8
3. Asimov	The Dark Ages	940.1	12
4. Beck	The First Book of Aztecs	970.3	8
5. Bonner	Canada and Her Story	971	8
6. Bowen	The Land and People of Chile	918.3	9
7. Bragdon	The Land and People of France	914.4	8
8. Brown	The Land and People of Brazil	918.1	8
9. Bunnett	Physical Geography in Diagrams	910.02	8
10. Caldwell	Let's Visit Argentina	918.2	9
11. Cameron	Canada's Heritage	971	10
12. Careless	Canada: A Story of Challenge	971	College
13. Comey and Pearlman	Israel	915.694	10
14. Cook, Saywell and Ricker	Canada: A Modern Study	971	12
15. Coolidge	Winston Churchill and the Story of Two World Wars	921	11

	Author	Title	Library Number	Grade Level
16.	Copeland	Land Between: The Story of the Middle East	915.6	6
17.	Coughlan	Tropical Africa	916.7	College
18.	Creighton	Dominion of the North	971	College
19.	Creighton	The Story of Canada	971	College
20.	Dafoe	Laurier	921	College
21.	Dempster	Rich and Poor Lands in North America and Asia	910	8
22.	Dobrin	Italy: Modern Renaissance	914.5	10
23.	Duggan	The Romans	937	8
24.	Dupuy	Combat Leaders of World War II	940.53	12
25.	Dupuy	The Military Life of Adolf Hitler	943.086	12
26.	Eliot	Greece	914.95	9
27.	Fairservis	Egypt, Gift of the Nile	932	10
28.	Forester	Sink the Bismarck	940.54	10
29.	Garland	Canada Then and Now	971	6
30.	Gianakoulis	The Land and People of Greece	949.5	8
31.	Goetz	Tropical Rain Forests	910.09	8
32.	Goldston	Spain	914.6	12

	Author	Title	Library Number	Grade Level
33.	Gunther	Meet South Africa	916.8	9
34.	Hamilton	The Crusades	940.1	9
35.	Hornos	Argentina, Paraguay and Uruguay	918	9
36.	Hutchison	Mr. Prime Minister	971	10
37.	Karen	The Land and People of Central America	917.28	9
38.	Kensworthy	Profile of Nigeria	916.69	7
39.	Kirtland	One Day in Ancient Rome	937	6
40.	Knight	The First Book of Deserts	910.0915	8
41.	Kugelmass	Roald Amundsen	910.92	8
42.	Lamb	India	915.4	8
43.	Learmonth	The Eastern Lands	915	7
44.	Lindop	Understanding Latin America	918	8
45.	Loder	The Land and People of Spain	946	11
46.	Lower	Canada: An Outline History	971	12
47.	Lower	Colony to Nation	971	College
48.	Marsh	New Zealand	919.31	8
49.	Middleton	England	914	10

Author	Title	Library Number	Grade Level
50. Mills	The Book of the Ancient World	930	10
51. Mills	The Book of the Ancient Greeks	938	10
52. Moore	Canada	917.1	College
53. Murphy	Understanding Africa	916	College
54. McCourt	The Road Across Canada	917.1	10
55. McNeer and Ward	The Canadian Story	971	9
56. Nelson	Picture History of Canada	971	8
57. Nevins	Away To Mexico	917.2	11
58. Ondaatje	The Prime Ministers of Canada 1867-1968	920	12
59. Parkinson	The Origins of World War II	940.531	11
60. Phillips	Canada: Giant of the North	917.1	7
61. Quinn	Picture Map Geography of Canada and Alaska	917.1	8
62. Ritchie	Australia	919.4	College
63. Savage	The Story of the Second World War	940.53	9
64. Shirer	The Rise and Fall of Adolf Hitler	921	10
65. Silverberg	15 Battles That Changed The World	904	7
66. Snell	The Nazi Revolution	943.086	12

Author	Title	Library Number	Grade Level
67. Sperry	Captain Cook Explores The South Seas	910.092	6
68. Stryler	Physical Geography	551	College
69. Tait	One Dominion	971	College
70. Tolboom	People of the Snow	970.3	6
71. Trueman	The Knights Realm: The Castle	940.1	11
72. Trueman	The Merchants Domain: The Town	940.1	11
73. Unstead	Britain in the 20th Century	942.082	11
74. Williams	The Battle for the Atlantic	940.54	8
75. Wilson	Australia: Wonderland Down Under	919.4	11
76. Wohlrabe and Krusch	The Land and People of Germany	914.3	9
77. Wolfe	Hitler and the Nazis	943.086	12
78. Wood	~~The United States and Latin America~~	917.3	10

MULTI-LEVEL READING LIST FOR ENGLISH
REPRESENTATIVE SELECTION

Series	
Outdoor Adventure Series Interest Level 7-8 Reading Level 3-4	Benefic Press 1900 North Narragansett Chicago, Illinois 60639
Deep Sea Adventure Interest Level 8-12 Reading Level 1-5	Harr Wagner Publishing Co. 609 Mission Street San Francisco, California 94105
Morgan Bay Mysteries Interest Level 8-12 Reading Level 2-4	Harr Wagner Publishing Co. 609 Mission Street San Francisco, California 94105
Teen Age Tales Interest Level 6-12 Reading Level 5	D.C. Heath and Company 285 Columbus Avenue Boston, Massachusetts 02116
The Everyreader Series Interest Level 5-12 Reading Level 3	Webster Publishing Division McGraw-Hill, Inc., Manchester, Missouri 63011
Newbery and Other Award Winning Books Reading Level 3-8	Griffin House Griffin Press Limited 455 King Street West Toronto 135, Ontario

MULTI-LEVEL READING LIST FOR SCIENCE REPRESENTATIVE SELECTION

Griffin House
Griffin Press Limited
455 King Street West
Toronto 135, Canada

Author	Title	Library Number	Grade Level	Price
Life in the Past				
Corona	Earth Through The Ages	551.7	3-6	$2.75
Cosgrove	Plants in Time, Their History and Mystery	581.09	4-7	4.40
Dempsey	The Ages of the Earth	560	7-8	6.80
Epple	The Beginning Knowledge Book of Fossils	560	K-6	4.30
Fenton	The Fossil Book: A Record of Prehistoric Life	560	7-8	18.00
Matthews	Wonders of the Dinosaur World	568	4-6	4.40
May	They Turned to Stone	560	2-5	5.40
McCarthy	Giant Animals of Long Ago	560	4-7	5.00
Radiant Energy				
Adler	The Sun and His Family	523.2	6-8	4.90

Author	Title	Library Number	Grade Level	Price
Cooper	Gift From the Sun: The Mastering of Energy	531	6-8	$6.40
Edson	Worlds Around the Sun	523.2	6-8	6.10
Freeman	Light and Radiation	535	5-8	6.40
Kohn	Light You Cannot See	535	4-7	5.00

MULTI-LEVEL READING LIST FOR SOCIAL STUDIES
REPRESENTATIVE SELECTION

The following titles were obtained from:

The Elementary School Library Collection
A Guide to Books and Other Media
Phases 1-2-3; 6th. ed., 1970

1 -middle grade interest level (4-6) and at grade 4 and 5 in reading difficulty.

1-A -middle grade interest level but grade 6 in reading difficulty.

A -middle grade interest level but grade 7+ in reading difficulty.

930	Mills, Dorothy. The Book of the Ancient World for Younger Readers: an account of our common heritage from the dawn of civilization to the coming of the Greeks. 2d. ed. Putnam c1951, 218 p., $3.33.	1-A
930	Unstead, Robert John. Looking at Ancient History. Macmillan 1966, 112 p., $4.50.	1-A
932	Asimov, Issac. The Egyptians. Houghton Mifflin c1967, 256 p., $3.02.	A
937	Duggan, Alfred. The Romans. World c1964, 125 p., $4.28.	1-A
938.	Mills, Dorothy. The Book of the Ancient Greeks: an introduction to the history and civilization of Greece from the coming of the Greeks to the conquest of Corinth by Rome in 146 B.C., Putnam c1925, 420 p., $3.80.	1-A
940.1	Sobol, Donald, J. The First Book of Medieval Man. Watts, F., c1959, 66 p., $1.99. A brief account of life in 12th. century England, during the reign of Richard the Lion-Hearted (1189-1199): the feudal system, the manor, the castle, the church, knighthood, arms and armor, towns and trade, food, medicine, and recreation.	1-A
940.1	Suskind, Richard. Cross and Crescent: the story of the Crusades, Norton c1967, 82 p., $3.54.	1

940.1 West, Anthony. The Crusades. Random House c1954, 185 p., $2.88. 1-A

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