University of Manitoba

A Role for Microcomputers in the Teaching of Social

Studies in Manitoba

by

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A Thesis

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in Partial Fulfillment of the Requirements for the

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A ROLE FOR MICROCOMPUTERS IN THE TEACHING OF SOCIAL

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ABSTRACT

A Role for Microcomputers in the Teaching of
Social Studies in Manitoba is a library study into
applications for microcomputers in the teaching of
social studies combined with a survey of Manitoba
social studies teachers regarding their perceptions and
recommendations on the use of microcomputers in the
teaching of social studies.

Literature was reviewed on the various modes of
Computer Assisted Learning (CAL) and their
appropriateness for the teaching of social studies.
This research helped provide insight into the more
effective applications at the present time as well as
the background information required for developing a
survey on the use of microcomputers by social studies
teachers in Manitoba schools.

The survey consisted of forty-nine questions
catagorized into three sections. Demographic data were
collected on the divisions in which the respondents
were employed ascertaining support for computer
education and the degree and mode of computer use
within social studies programs. Several questions were
designed to poll the respondents on their attitude
towards the use of computers in the classroom.

The last section related to recommendations that the respondents might have regarding the development of courseware for their programs as well as support that they would like to see from their divisions and Education Manitoba.

The survey indicated that curriculum relevant courseware was inadequate especially with respect to traditional modes of Computer Assisted Instruction including drill and practise, tutorials and simulations. Most experiences with American material was not positive and social studies teachers in Manitoba remain skeptical towards CAL for their programs as they presently perceive it. This reflects a need for computer literacy by teachers especially with regard to using the microcomputer as a problem solving and research tool. These applications are not heavily courseware dependant and would compliment information gathering activities in most social studies programs. Respondents indicated a willingness to attend inservices on computer applications for their programs and saw the need for social studies teachers to provide input into the develpment of courseware for the Manitoba Social Studies Curriculum.

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Lastly, but most important of all, I gratefully thank my wife Sue, and daughter Christy, for standing by me through the very long time that it took to complete this work.

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CHAPTER ONE

WHAT ROLES ARE THERE FOR THE MICROCOMPUTER AND ITS RELATED TECHNOLOGIES WITHIN THE K-12 SOCIAL STUDIES CURRICULA OF MANITOBA SCHOOLS?

Introduction

Within the last decade or so computer technology has evolved in such a manner that a learning and research tool that was once the domain of the more affluent institutions or corporations is now readily available to the public school classroom. In part, there has been pressure from our society as a whole to incorporate this technology into our classrooms although with uncertainty as to the specific purpose. Ronald Ragsdale presented this position in his introduction to Computers in the Schools (1982) when he referred to the parents demanding that we use them and as a necessity for paving a way to an electronic future. Educational Institutions, hardware and software publishers, and many educators succumbed to this pressure and within an incredibly short period of time, teachers have been inundated with a wealth of arguments as to why they should be using a microcomputer in the classroom. A dilemma that confronted educators during the early years was the inappropriateness of much of

the educational software that was available. Many early computer programs written for classroom use were in fact prepared by computer specialists who had little understanding of sound pedagogic principles. Thus, many of the first experiences that teachers had with the computer discouraged them from experimenting with this potentially valuable and multifaceted tool. Yet, the microcomputer has persisted and as educators get involved in software development, quality software is becoming available for many of the disciplines.

One has only to look through the Directory of Courseware Evaluations published by the Manitoba Department of Education to realize that an inventory of educationaly sound software is growing, especially in the areas of mathematics, language arts, science and general problem solving. However, the social sciences have lagged behind the other disciplines. This position was taken by John Sylvester (1986) in an article prepared for the June '86 issue of ManACE. In providing an overview of the goals of the Manitoba Computer Assisted Learning Consortium, Sylvester emphasized the point that the Manitoba Computer Assisted Learning Consortium was one of the major sources of Canadian courseware for a range of computer systems in our schools and that a continuing objective of the consortium would be the development of courseware for

Canadian Studies. Manitoba social studies teaches are
presumably aware of the technolgical changes that are
taking place within the education system, but do we
know what their reaction has been to these changes?
Their perceptions are critical as without the support
of the educator in the field, the courseware
developers' efforts may prove to be in vain.

Significance

This study was designed to examine applications
for the microcomputer in the teaching of social studies
and the perceptions of Manitoba social studies teachers
regarding the use of microcomputers for the purpose of
determining a "role for microcomputers within the scope
of the Manitoba Social Studies Curriculum". The
incubation stage may be over for the computerization of
the educational process in Manitoba. Microcomputers
have been in many of our schools for over half a
decade. If educational leaders in Manitoba are
committed to esatblishing a place for this technology
in our schools there is a need to become familiar with
the perceptions of teachers of specific disciplines in
order to develop policy and priorities for future
implementation. I also believe that if they haven't
already done so, social studies teachers should be
making a critical assessment of this innovative

learning tool. This could be achieved through the examination of quality courseware relevant to their programs or the review of literature related to other educators experiences with computers in education. This need is emphasized in a statement by Walter Koetke.

> "Living in a society that is so steeped in technology requires that every citizen understand the basics of technology so that he (she) can make informed decisions regarding its applications." (Koetke, 1983, p.169)

Problem Statement

The purpose of this study is to determine the role(s) of the microcomputer in the teaching of social studies in Manitoba schools through research into established applications for microcomputers in the classroom combined with a study of the perceptions of Manitoba social studies teachers regarding microcomputer use.

Questions Relating to the Problem

In order to attend to this problem statement several questions need to be considered. Microcomputers are being used in our schools for Computer Assisted Instruction and Learning, for teaching about computers and for administrative purposes. The 1984 report on educational computing by Manitoba's Educational Technology Program supports this, especially with respect to computer awareness. However, to what degree have Social Studies teachers accepted this transition within our education system in Manitoba? Is there adequate courseware and hardware for use within the scope of Manitoba Social Studies Curricula? At the present, the perception of Social Studies educators with respect to computer use is unknown. Is there a need for Social Studies teachers to be shown what

computers, with the appropriate pedagogically sound courseware, can do for their programs? Also, within in the short span of courseware development it has become evident that the best programs result from a cooperative venture between the computer expert and the curriculum expert, specifically the classroom teacher. (Staples, 1985) Are Manitoba Social Studies teachers able to provide input into the way that computers are integrated into their schools, both in terms of software needs and hardware accessiblility? The following questions will be considered in this study as they relate to what has been happening in general as well as what needs to be done here in Manitoba for our social studies programs.

1. How can microcomputers be used in the teaching of social studies? (CAI and CAL)

2. How are microcomputers and educational courseware viewed by Manitoba Social Studies teachers?

3. What use is being made of microcomputers and related technologies by Manitoba Social Studies Educators?

4. What are the recommendations of Manitoba Social Studies teachers with respect to courseware development for their programs?

5. What are the recommendations of Manitoba Social Studies teachers with respect to professional developement for teachers in the use of CAI?

6. What recommendations do Manitoba Social Studies teachers have with respect to accessibility to courseware and hardware for their classes?

7. Will social studies teachers who are aware of computer applications in education as a result of their professional development, including workshops, courses and reading literature, be making some use of computer assisted learning (CAL) within their programs?

8. Is courseware for CAL more accessible to urban teachers than rural teachers as a result of budgetary considerations, administrative commitments and access to resource centers?

9. How aware are social studies teachers of the resources that are available to them for developing CAL in their programs?

10. Do social studies teachers perceive a continued need for professional support through consultants, workshops, courses, etc. in the area of CAL for the social studies in Manitoba Schools?

11. Do social studies teachers desire input into the development of courseware for Manitoba Social Studies curricula?

Theoretical Assumptions

Consideration is being given to ideas presented by Seymour Papert in his book Mindstorms (1980) with respect to his view that the computer with the appropriate programming can act as a learning stimulant or catalyst and that the underlying aim of any education system should be to "help children learn how to learn...this, ..., is what should be the base of any pedegogical endeavour." Although Papert is referring to math concepts in this statement, with the appropriate software, the argument might be transfereable to some aspects of social studies learning, particularly when higher order thinking skills are involved.

Limitations

1. Software development and computer technology are continually evolving. It is next to impossible to keep abreast of these developments or predict what will be available in the immediate future.

2. Educational software studied for the purpose of this paper is confined to that available from MECC (Minnesota Educational Computing Consortium), the Department of Education, and that in use in the Agassiz

School Division #13 as well as miscellaneous software the author has encountered.

Delimitations

1. The author has completed several courses of study on Computer Applications in Education and during 1985/86 was working in part as a computer education coordinator in Agassiz School Division. Experience as a programmer is limited to that related to the expertise required for teaching the current Computer Awareness 105 and Computer Science 205 course in Manitoba highschools.

2. Software examined during this study was for either the Apple II family of computers or the Radio Shack (Tandy) TRS 80 Model III/IV's.

Operational Definitions

1. Pedagogically Sound Software: "When we say that a program must be pedagogically sound, we mean that it must teach or drill facts and concepts worth knowing in a manner that is consistent with proven educational techniques."(Staples, 1985, p. 62)

2. Microcomputer: The microcomputer is an electronic device that stores, processes or retrieves information in digital form. A microcomputer has the same components as larger computers but in a

more compact package. Microcomputers have evolved rapidly in the last few years but generally they have less memory and and process information at a slower rate than their larger counterparts (mainframes and minis). Their chief advantages are their compactness, portablility and their ability to interact with the operator while executing a program. It is this last feature that has made microcomputers suitable for educational computing. Because of their popularity there is also a wealth of relatively inexpensive software (computer programs) available for most microcomputers.

3. <u>Related Technology:</u> The microcomputer interacts with a wide range of devices to enhance its power or flexibility for use in a classroom. These peripheral devices might include modems for telecommunicating with other computers or databases, printers, a wide range of input devices and voice and music synthesizers. Related technology could also include the latest programming methodology enabling the computers to seem more and more "user friendly".

4. <u>Computer Assisted Learning/Computer Assisted Instruction:</u> Computer Assisted Learning and Computer Assisted Instruction are often used

synonymously. The latter should be considered a subset of the first. CAL relates to teaching through computers as well as with computers. With CAL the computer might be used as a tutor, presenting information or concepts to the learner, or as a tool, assisting the learning with a problem solving process. With CAI the computer actually presents the lesson either through a drill, tutorial or simulation. (Ragsdale, 1982)

5. Computer Managed Instruction: When using a computer for Computer Managed Instruction the computer takes the role of an administrative assistant rather than a teacher. The computer may be used to diagnose or prescribe learning sequences, keep student progress records, prepare tests, etc. but does not actually present new material or concepts to the student. (Willis, Johnson and Dixon, 1983)

6. Courseware: Courseware refers to the print and non-print materials related to a Computer Assisted Learning package. This is often a floppy disk containing the computer program and a manual or guide for the teacher that not only outlines operation procedures for the program but suggests methods for integrating the program into specific curricula.

7. <u>Social Studies</u>: As the Manitoba Social Studies
   curricula is to be the focus of this paper I have
   selected a definition for social studies from the
   Manitoba Department of Education K to 12 Social
   Studies Overview (1985):

".....social studies may be defined as those areas of
   knowledge that deal with the interrelationship
   between people and their environmnets, both
   physical and social. The three main areas of
   content identified within the social studies are:
   -knowledge of the individual.
   -knowledge of the physical environment; and
   -knowledge of the social environment."

CHAPTER II

A REVIEW OF LITERATURE

Introduction

This study involved an examination of established roles for microcomputers within the social studies as well as the perceptions of Manitoba social studies teachers regarding the use of microcomputers within their programs. Thus, it was necessary to review literature relevant to two areas. The first related to methodologies relevant to survey design and information gathering from a population and the second related to computer applications for social studies programs. To design an instrument for gathering information on teacher perceptions regarding computer applications I would have to be well versed in established modes of computer assisted learning or CAL. This background would also be useful for analyzing the results of the study and any recommendations that might follow. The intent was to ultimately outline the needs and priorities of social studies teachers with respect to uses for computer technology within the range of their programs. In assessing the needs for the social studies curriculum in Manitoba through the surveying of a representative population of social studies educators

it was also critical to consider the attitudes of the respondents to the study with respect to computer related technologies. Attitude will bias the results of a needs/perceptions survey and must be considered in the design and interpretation of such an instrument. In designing the study a rational for attitude assessment was also considered.

Literature Relevant to Determining Perceptions

An investigation of the perceptions of educators regarding computer use in education has been conducted in Manitoba. In 1983, Yue Shum Lai completed a thesis for the Faculty of Education at the University of Manitoba on the perceptions of educational leaders regarding the use of microcomputers in Manitoba schools. Lai's study involved the interviewing of a relatively small number of educational leaders using a free form questionaire. There have been several studies conducted in Manitaba schools with respect to the effectiveness of specific modes of computer assisted learning. In 1976 Catherine Hill conducted a study on the effectiveness of Computer Assisted Learning for learning mathematics with physically handicapped elementary students. This study indicated some promise for CAL as the study group retained the skills that they had acquired for a longer period of time. A

similar study was conducted a year later by Onofrio Fiorentino. This study focused on junior high students with learning disorders. The CAL activities were for arithmetic and spelling. As in the early study the results indicated a longer retention of the skills drilled by CAL. Little has been done ,however, that is directly relevant to the perceptions of social studies teachers in Manitoba although Cheryl Prokopanko (1986) of the Educational Technology Program component of Infotech developed a database package for the classroom that included social studies activities along with other subject areas and at the time this study was being completed the Manitoba Computer Assisted Learning Consortium was conducting a needs assessment study amongst social studies teachers in the province.

Within the realm of the social sciences, questionaires have become acceptable modes for gathering data although there have always been many reservations regarding their use.

"Although questionaires have certain advantages other methods lack, such as low cost per subject surveyed, constructing reliable and valid questionaires and ensuring non-biased responses are challenging and time consuming tasks......." (Galfo, 1983, p. 82)

However, the questionaire has been accepted as a research instrument and inspite of its short falls was selected as a component of the research methodology of

this study. The questionaire appeared to be the most practical method of surveying a population sample selected from the broad base of the Manitoba school system.

> "Questionaires are used to obtain factual data, opinions, and attitudes in a structural framework from respondents not contacted on a face to face basis." (Galfo, 1983, p. 83)

Attitude, as defined by Clinton Chase (1974, p. 228) of Indiana University, is considered a "predisposition to accept or reject, in a consistent manner, groups of individuals, social systems, or other social objects." For this study the computer and Computer Assisted Learning (CAL) are considered the social objects. Another definition that might be more applicable to this study was proposed by H. H. Remmers (1955).

"The term attitude is merely a convenient way of referring to the preparedness that exists within the organism (individual) for some future activity." (Remmers and Gage, 1955, p. 373)

In assessing needs and perceptions of Manitoba educators it was also necessary to assess the preparedness of these individual for change or "the future activity" of this definition.

A REVIEW OF THE LITERATURE ON THE USE OF MICROCOMPUTERS

IN SOCIAL STUDIES EDUCATION

Views on Computer Assisted Instruction

The computer has been revolutionizing many classrooms not so much because of an innovation in the methodologies of instruction but because the courseware that has been developed often permits a more effective delivery of conventional modes of instruction. As an aid to instruction, computers are being used for drill and practise, tutorials, managing learning and in simulations or gaming. All of these activities are not new to the education scene. Several arguments have been made for using the computer for these modes of learning. Christine Doer summarized several of these in an early study of microcomputer use:

1. CAI provides inividualized self paced instuction.

2. CAI can significantly upgrade student performance.

3. CAI can highly motivate even the underachievers.

4. CAI can permit an increase in student teacher ratios.

5. CAI helps a teacher better diagnose the areas of student weakness as well as ascertain exactly where a student is in a course.

6. The role of the teacher might be shifted from that of an adversary to ally as the teacher is now more a coach than evaluator.

7. CAI guarantees the application of proven teaching methods to all students at all times as the computer can't get tired or discriminate.

8. The computer can provide the student with immediate feedback. (Doer, 1979, p. 121)

These arguments might be considered somewhat idealistic as they are determined largely by the quality of the software available as well as the distribution and quantity of computer hardware within the school. However, the potential is there and "instead of an instructional gimmick the computer and its related materials must be considered an integral part of the instructional process. (Glenn, 1978, p. 176) With the development of pedagogically sound software for the range of disciplines the computer may play more of a didactic role in the classroom (the transference of information to the learner). This would allow the teacher "to play the heuristic and philetic one. Teachers can begin to develop their coaching skills in

order to help students work creatively with an ever increasing amount of information."(Popp, 1983, p. 35) Suzanne Zempke, a supporter of Seymour Papert, suggested that the computer can also play a heuristic role. She feels that with the appropriate interactive programming the student can be presented with "the opportunity to make choices, discover alternative solutions to problems, and to develop logical thinking skills through interaction with the computer."(Zempke, 1983, p. 43) In other words, the microcomputer, with the appropriate programming, can help young people learn how to learn.

Dr.Carol Chomsky, a linguistics specialist from Harvard University, has spent the last several years researching and developing software for use with microcomputers for teaching language proficiency. She recently demonstrated two such programs, Missing Links and Word Quest at a ManAEDS (now ManACE) conference on software at the University of Manitoba (Apr. 85). In her presentation Dr. Chomsky outlined several characteristics that quality educational software should have. The best educational software usually results from a team effort between programmers and educators. To develop software there is a need to understand the computer in terms of what it can or can not do, to be knowledgeable of the educational process

(pedegogy) according to the subject area that you are developing software for. Some general criteria for all software are:

1. Programs should involve several students at a time, encourage discussion and should expand other activities.

2. To justify the use of computer programs in the classroom the activities should be different than those that can be done by paper and pencil. For example, a word processing program can provide a student with enhanced editing capabilities.

3. Teachers must be able to customize the program to meet the individual needs of the student.

4. Teachers or students must be able to insert their own passages or text.

5. Educational programs must be reusable with the same group.

6. The pace should be set so that students have time for reflection as they work through the program.

7. Programs should be satisfying to the user. Sound and graphics have a place but should not take over. The gratification should come from the content and not the razzle dazzle.

8. The user must be able to escape from the program at any time returning to the menu or backing up a frame.

9. There should no surprises in the program.

10. The program should tie into books and encourage reading.

In general Dr. Chomsky believed that computers were well suited for use in teaching language but noted that this was dependant on the quality of the software to be used.

Regardless of the view that the social studies teacher might take with respect to an instructional strategy (information transference or creative problem solving) , it becomes apparent that the complexity and multifaceted nature of the computer makes it necessary to thoroughly research and possibly experience its uses before a fair assessment can be made. Many educators, including teachers of social studies, realize that "computers can only be useful instructional tools if quality software is available."(Robinson, 1983, p.1) Considering that computers were initially the domain of mathematicians it seems only natural that by the 1980's ninety-five percent of educational software available was for mathematics instruction. At the Annual General Meeting of the Social Science Education Consortium

(U.S.) in 1983 John Napier (1983, p.3) stated, "The professional literature in social studies is, relatively, devoid of information on the history of computers and related technologies, as well as the skills necessary to utilize these technologies in the classroom." Early computer programs for the social studies tended to be fact oriented drill and practice routines and contributed little to stimulating the Higher Order Thinking Skills (HOTS). The availability of appropriate software continues to be a concern. In an early 1985 editorial for "Creative Computing" Betsy Staples commented; "Now that most of the hardware hurdles have been overcome, the primary barrier to effective utilization of computers in education is the lack of high quality software." (1985, p.65) We continue to read about the potential of the microcomputer in the classroom. This potential, to a large extent, cannot be realized without pedagogically sound software. Within the Canadian educational market for software one of the reasons for this difficulty might be the reluctance of software publishers to invest the tens of thousands of dollars necessary for program development knowing that the education system is rampant with software piracy (making copies of computer programs without license from the publisher). The Canadian market is small especially with respect to

specific Canadiana. A solution currently being negotiated by many school divisions involves the purchase of licensing rights of a divisional scale allowing as much duplication of software as is required by that division.

In spite of this issue, improvements are being made and it seems that a modest inventory of social studies instructional software is accumulating. It must also be realized that for some applications within the teaching of social studies, software becomes a tool for teacher/student directed learning activities and can be of a general utility nature. This is especially true with respect to word processing and database management. It is also in these areas that the microcomputer may contribute the greatest to enhancing the quality of social studies instruction in the short run.

"The research across all subject areas indicated that CAI contributed to higher student achievement when it supplemented traditional instruction and students had positive attitudes about classroom use of computers." (Robinson, 1982, p. 3)
If one considers that higher order thinking skills include those that require students to analyze and synthesize information then recent research in southern California seems to indicate that students in an experimental program that included three schools did improve their thinking ability. These were intermediate

students in grades four to six. Language ability was a
key factor combined with the use of quality software
which included programs such as Kidwriter and The
Marketplace.

> "The HOTS project suggested that it is possible to
> improve the higher order thinking skills of upper
> elementary students while improving their basic
> skills."(Pogrow, 1985, p. 79)

This study also indicated that the key to effective
computer use ,either in the area of drill and practice
or HOTS development, is to determine the conditions
under which the computer becomes more advantageous to
use than good teaching and also that bad teaching can
have a negative impact on computer use.

The following is an overview of applications that
social studies teachers can consider with respect to
the use of the microcomputer in the teaching of social
studies including some research findings although
little social studies specific research seems to have
been done to date or is on going.

Drill and Practice

Drill within any discipline has been the time
honored approach to inculcating the detail that is
required for learning the higher order cognitive
concepts. "Whether one agrees or disagrees there are
facts, concepts and generalizations that are important
antecedants to higher level learning."(Glenn, 1978, p.

176) The computer lends itself well to drill and practice. The programming required for this application is not complex and much software has already been developed. There are also many authoring languages available for teachers such as Pilot or Author I that allow teachers to generate their own tailor-made learning resources for their students. Unfortunately, using the computer for drill and practise is actually an underutilization of the potential of the computer as an aid to instruction. Nevertheless, studies have indicated that this application for the computer, because it permits individualized learning, has been a particular boon for the underachieving student. Students, especially at the elementary level, having difficulty developing basic skills, are able to progress more rapidly given some time with an interactive drill and practise routine on a computer. The courseware is usually designed to provide a conversational level of interaction with built in positive reinforcement for success and of course tremendous patience for the student encountering learning difficulties.

Computer Managed Instruction

"Computer Managed Instruction or CMI uses the computer to provide tests, develop assignmnents and

keep records, but it does not involve the computer in the actual teaching of material."(Willis, Johnson, and Dixon, 1983, p. 13) In using the computer for CMI it is assumed that there are learning goals that are better achieved by the teacher and not the computer. The computer is used primarily to relieve the teacher of much of the managerial and clerical burdens. In fact, the computer can be programmed to diagnose and prescribe for a student depending on his/her progress monitored by the computer. Many quality tutorials developed in recent years incorporate this feature (tutorials are not CMI). CMI requires traditional learning methods to carry out the actual teaching. The student and/or teacher utilizes the computer for feedback. The teacher must organize the learning material into assignments or modules. The rationale for Computer Managed Instruction can be summarized in the following four points:

1. the computer can score and administer tests.

2. the computer can provide feedback to students as they take tests.

3. the computer can diagnose information and prescribe remediation after each testing.

4. information can be stored on performance records or learning plans. Scores and remedial suggestions can be made available quickly to the teacher and student in a variety of formats. (Willis, Johnson and Dixon, 1983, p. 14)

One of the more significant aspects of computer assisted instruction is the individuality that is made possible for the student which permits a student-paced and not teacher-paced approach to learning. Michael Hiscox, the director of Interwest Applied Research of Portland, Oregon suggests that learning aptitude difference is not necessarily because of the varying degrees of difficulty in what is to be learned but because of the variances in time required by different individuals to learn a skill or concept. Microcomputer technology has developed now to the point where we can take full advantage of the diagnostic/prescriptive model of learning, one of the attributes of CMI. However, this model goes well beyond the definition of Computer Managed Instruction provided earlier and assumes that the computer takes over the entire responsibility for transfering knowledge. "Any instructional system that allows students all the time required to learn a concept, while avoiding wasting time after the concept is learned will enhance

learning."(Hiscox, 1981, p. 5) Such a system must be able to build on each individual's knowledge base. To implement the model a tremendous amount of information must be stored, analyzed and be made available quickly. Constantly expanding memory capabilities, faster microprocessors and more efficient information storage and retreival devices are making this possible. Programmed interaction can allow for constant assessment during instruction. Time is not wasted on assessment after the mastery of each concept or skill as this is managed by the computer and not the teacher. A well prepared instructional package could provide a large data pool, a wide range of tests scored by the computer, an efficient record keeping system and present the optimum next learning segment based on the test scores of the learner.

The greatest drawback to this model at this time is not the technology but the availability of software. The programs require considerable programming time by a programmer who is not only proficient as a programmer but has a foundation in educational principles. Comprehensive evaluation of this approach is required and traditionaly eduacational funding is not readily available for such undertakings, although in Manitoba the use of such technology within the education system has taken a fairly high profile in the last few years.

Tutorial

The computer tutorial is a self contained lesson or series of lessons including the content, the re-enforcement and the evaluative procedure used to monitor the progress of the learner. Tutorials are readily available today, most utilizing the traditional programmed intstruction format where some content is presented to the learner immediately followed by short quizzes to determine whether the learner is acquiring the key facts or concepts required to master the lesson objectives. The simplest of the tutorials utilize the computer as little more than a page turning device. However, when the graphics and interactive capabilities of the computer (especially a high resolution color computer) are taken advantage of in a tutorial program the computer can become quite an enhancement over the text or workbook for presenting information. This is combined with the fact that each student in a computer lab could be working on a different tutorial and progressing at his or her own rate. This factor alone is tremendously valuable when working with a group of students with diverse learning problems as you would find in a special education program.

An early problem with these programs related to the limited memory of microcomputers available for

classroom use. Again, rapid technological development has overcome this handicap. The authoring languages mentioned earlier in this paper also make it possible for teachers to custom design tutorials for their particular discipline and grade level. Developing the tutorial can be tedious. To overcome this, teachers could share their expertise through timesharing and allowing the distribution of their work through a distributive network such as is available in Manitoba through the Cybershare computer and the telephone system.

Simulation and Gaming

A simulation is "the manipulation of a simplified situation that is analagous to the real situation you wish to study...the learner can make low risk decisions and receive harmless but informative information."(Doer, 1979, p. 71) Many teachers have integrated the simulation game into their range of teaching strategies as they have been proven very effective for the development of a wide range of cognitive as well as affective skills. In a social studies classroom a simulation provides the opportunity to study "self contained environment in which the student or the class can study the cause and effect rel tions in a model of a complex real life

situation."(McGrath, 1978, p. 181) The computer is a
very effective medium for the delivery of a simulation
as it relieves the teacher of many of the
administrative problems that have plagued and often
inhibited the use of simulations. The computer can make
the classroom simulation more rewarding because its
strengths match exactly the weaknesses of the
conventional simulation. More variables can be handled
by a computer and the teacher can be relieved to
perform more valuable tasks than tedious calculations.
Computerized simulations also permit repetition of the
simulation experience with relative ease which is often
required before object of the strategy is realized.
Alfred Bork believes that it is this use of the
computer that is best suited for developing intuition
in the learner. Computer Simulations may allow for
individualized instruction but they are also well
suited for group instruction. Indifferent students may
be motivated and already responsible students have
additional stimulation. The simulation may introduce a
sense of realism into abstract topics increasing
cognitive development through discovery. The student is
most definitely not a passive recipient of knowledge
but is encouraged to experiment and participate. In a
good simulation the computer should not be the center
of attention. Students usually will be working in teams

and rely on sources of information other than the computer. The computer is used as a tool to process this information.

The simulation also provides a stimulus for meaningful discussion in debriefing sessions. These are in most cases mandatory as the simulation does not emulate the real world and this factor must be stressed by the teacher. An opportunity is provided for increased socialization as students have often acquired their results through a team effort. "Simulations at bottom are games-good, thought provoking , educational games. They should be fun-and create more oportunities for the "Aha!!s" to come."(Snyder and Dockterman, 1984, p. 28)

Computer Based Simulations for the Social Studies

The value of computerized simulations was recognized in the U.S. during the mid seventies. The Huntington Two Project resulted in the creation of several programs relevant to the social studies. One of these, USOP, allowed students to experiment with projecting America's population growth rate by manipulating such variables as fertility, age of the mother, sex ratio, etc. Other simulations developed in this project permitted students to experiment with the

factors that contributed to election results and pollution.

"Simulations teach constructs, combinations of concepts and generalizations, which explain the real world...No other single instructional device can run simulations as well as computers." (Rooze, 1983, p. 6) These statements by Gene Rooze imply two factors with respect to simulations for the social studies. Simulations are an excellent instructional strategy but a computer is not required to run a simulation. The advantage of the computer is in the management of the simulation. "For simulations, computers can accept input from students, make decisions according to some underlying model and report results without the time consuming work of calculating performed in the traditional simulations." (Napier, 1983, p. 5) As a result of its processing speed the computer can handle many more variables than a traditional teacher managed simulation. "Microcomputer based social studies simulations can provide the laboratory experiences that social studies has usually lacked." (Berg, 1983, p. 21) According to Roger Berg, a computer based simulation developer and user, studies conducted in several American states indicate that non-computerized simulations are worthwhile for social studies teachers

to use. However, little research has been done or published on the effectiveness of computer based simulations. Nevertheless, Berg believes simulations are worthwhile to use for the following four reasons:

1. Simulation games increase motivation and interest.

2. Simulations are no more or less effective in

   enhancing cognitive learning. (some studies do indicate greater cognitive learning does take place)

3. Simulations produce better retention than other

   strategies.

4. Simulations are reported to influence attitudes in some instances. (Berg, 1983, p. 7)

Rooze stresses that the computer with its simulation software must be integrated into the social studies classroom and not expected to stand alone. There are at least three aspects to simulation use with students. Students must first be prepared as to what a simulation is and how to run it on the computer. There is the actual execution of the simulation by the student(s) and then there is the critical discussion or debriefing of what they have actually seen. To generate the required inferences from the simulation it is usually necessary to run the program several times. After each trial students need to draw conclusions and a testable hypothesis for the next time that they run

the simulation. The teacher should also be able to control or manage the variables in the educational simulation in order to make the model relevant to current conditions. This would especially be the case in economic or political simulations.

Berg outlined several social studies relevant learning activities and objectives where the computer based simulation would be suitable. These included:

1. Information processing requiring the analysis, planning and gathering of information.

2. Making proposals and lawmaking that involve opposing proposals, voting on proposals and writing proposals.

3. Groups activities involving debate, discussion or problem solving.

4. Human relations where competition, interviewing, coalition forming and persuading are required.

5. Role playing as an individual or in a group.

6. Resource management relating to survival, the maximizing of resources or the trading of resources.

7. The evaluation of ones self or by peers. (Berg, 1983, p. 10)

Each of these activities/objectives involves both cognitive and affective skill development.

Several social studies simulations have been developed with these objectives in mind, although few specifically for Canadian Studies. In Civil War the player commands either the Union or Confederate Army and makes decisions with respect to tactics and utilization of resources in order to rewrite History. In Fur Trade the player is journeying throurh the Great Lakes area with a shipment of furs encountering the dangers of travel during the eighteenth century. Oregon Trail is similar in that the players are journeying westward during the mid nineteenth century and must make critical decisions as to the provisions that they must carry and the routes that must follow. During the fall of 1982 James Hodges produced a working draft of social studies related software which included quite a number of simulation games with American History related themes. Other social studies relevant simulations involve running small businesses, manageing resources as ruler of an ancient civilization, running a farm in the American Midwest, negotiating a collective agreement, east/west tensions, political elections, etc.

The simulation game is an ideal vehicle for introducing the cause and effect thinking that should be a component of social studies classes. Once students have worked with several simulations and begin to

understand the model and how a simulation works they can design their own computerized simulation. This has become quite practical in recent years with the development of Micro-Dynamo a software package that allows students to write their own simulations without having to learn a general high level programming language such as BASIC.

Simulations are justifiable learning activities as:

"unlike games, simulations do not result in winners or losers, they tend to emphasize the process, the interaction of variables, and the effects of human decisions." (Davis, p. 10)

"The use of simulations exposes students to a broader range of phenomena than before, it also enhances and intensifies their learning experiences while contributing to the developing of social skills and team effort that they will need in adult life." (Doer, 1979, p. 72)

Using the Computer to Statistically Analyze Research Data, as a Problem Solving Tool or to Generate Reports

Marshall Mcluhan's statement that "computers are extensions our brains as tools are extensions of our bodies" underlines the point that computers are great problem solving devices. Students of social studies are often expected to gather and organize information from which they can draw their own conclusions. Computers can provide a more sophisticated analysis and many

general utility programs exist for these tasks. Data analysis programs allow for multiple retesting of hypothesis. An example of a Data Analysis program is found in R. G. Ragsdale's (1977) work Programming Projects Across the Curriculum. This program by Jim Breadner allows students to analyze the results of a survey. Applications for the program include a correlation of socioeconomic status and voting patterns; advance poll tabulation; community analysis surveys; a cross tabulation of leaders and politics, population surveys; transportation surveys; land use analyis and puplic opinion surveys.

The computer can be used to gather and store large amounts of data that might have resulted from a historiographic research project. Programs to perform these tasks do not have to be prepared by the user but are readily available commercially. There are a wide range of database programs that would be useful for this purpose. Social Studies teachers that might like to use the computer for such a role could work with computer teachers in their schools. This would "allow Social Studies teachers to become more comfortable with using a computer, hastening the time when they can fully integrate the computer into their classes." (Roxenweig, 1985, p. 16) Teachers often assign data gathering projects to their students in ord r for them

to make inferences and draw conclusions by analyzing data gathered on different countries, states, provinces, etc. Such programs usually permit the generation of a range of graphs to display the statistics that have been gathered and analysis in a more useable form.

Graphic displays open another parameter to the teaching of social studies. Diagrams and pictures have long been used to dispay information with more clarity or reinforcemnt. The newer high resolution microcomputers are enhancing CAI programs with their graphics capabilities. However, an element that is only possible with an interactive computer system is the dimension of animation. Many concepts are difficult to explain verbally and models have been used to backup a narrative description. One concept that has been difficult to convey is the lunar phases. A program has been prepared "Luna"(Bork, 1981, p. 27) which can illustrate the evolution of the moons phases as it circumnavigates the earth.

As the computer is an excellent device for the storage, retrieval and organizing of information through database management statistical analysis of the data that has been collected could be a included in a student research project. "Once statistics is justified as the missing dimension in social studies, the

acquisition of a microcomputer is strongly warranted."
(Rooze, 1983, p. 11) By adding the additional dimension
of word processing, students have at their finger tips
a tremendous tool for generating reports or essays.
Programs for Apple and Tandy computers such as PFS
file, Appleworks, Applewriter, Scripsit, Superscripsit
or Bank Street Writer, to name a few, are easy to learn
and could be used by students from elementary grades
upwards to assist them with their research assignments.
Barbara Pannwitt suggests that "The most effective tool
for writing since 1780, when steel point pens were
invented, is wordprocessing software for
microcomputers." (Pannwitt, 1984, p. 3) Because of the
editing and text manipulation capabilities of such
software students' creativity is not stiffled by
laborous correcting of errors. There are also
complementary programs available that can assist in
spelling, grammer and punctuation correction if so
desired.

In working with the databases that they have
created students may be "formulating hypotheses and
questions and developing strategies for retreiving
selected information. "(Abelson, 1983, p. 42) For
example, if students had created a data base on
American states they might be interested in finding the
five states that had the greatest population increases

over a specified period of time. From there they might proceed to determining the common factors that might have contributed to this growth. Similar studies could be conducted in Canada or any country for that matter. In building databases and using database software students are also learning the strengths and weaknesses of the computer as well as some of the significant societal issues. In accessing databases students may come to understand the problem of the general intrusion of institutional databases by private individuals or organizations without license. In this regard Robert Abelson feels:

> "Our only hope for making wise and beneficial uses of the technology and avoiding some of the potential disasters is to have an educated citizenry with an attitude of responsibility and a sense of control."
(Abelson, 1983, p. 45)

Computer Assisted Instruction for the Social Studies: A Summary

With respect to the delivery of content and the building of skills, the rationale for the use of CAI, specifically drill and practise and tutorials, can be supported as a compliment to other instructional strategies in our schools. With the appropriate software computers can facilitate learning through immediate feedback, motivation and learning management (time on task and progress monitoring). In general,

research seems to be indicating that their is higher student achievement when CAI is used to supplement, but not replace, traditional instruction. The individualized and self-paced quality of tutorial and drill and practise software complements the classroom teacher well. Within the social studies, the development of map reading skills and the acquisition of geographic facts are ideally suited for computerization. Programs listed in Hodges bibliography such as Continent, Country, Country Guess, European Capitals and Countries, Direction and Distance, etc. attest to this. It is difficult to imagine that tutorials will replace the teacher in the classroom, as Rooze suggests, by the very nature of their time consuming development plus constant need for revision in the social studies areas. Workbook exercises could be replaced by the computer with the computer monitoring mastery of the skills objectives of the program.

Gene Rooze certainly believes that "Once social studies specialists have decided on the nature, skills and values to be taught in a social studies program the computer can play a significant role." (Rooze, 1983, p. 17)

CHAPTER III

RESEARCH METHODOLOGY

Survey Design

A questionaire to be distributed by mail was selected as the data gathering instrument for this study. Two hundred Manitoba social studies teachers were randomly selected from the membership of the Manitoba Social Science Teachers' Association which had a population of seven hundred and ninety-one in 1985. Permission was received from the executive of MSSTA to use its membership for this study in early January of 1986 (see Appendix C). A random number generator program on an Apple IIc microcomputer was used to select the sample from this population (see Appendix E for program listing). The sample was large enough to permit a significant representation of rural and Winnipeg based teachers thus permitting some group comparisons in the analysis. Some selections had to be omitted as they represented members who were not currently teaching or were from out of province. To maximize the returns an introductory letter was included with the survey along with a stamped return addressed envelope (see Appendix C). The letter briefly outlined the significance of the study as well as the

interest of the Manitoba Computer Assisted Learning Consortium and MSSTA.

The survey questions and the format for the survey were developed in consultation with Dr. L. Sandals of the Manitoba Computer Assisted Learning Consortium, D. Tataryn a research assistant with the Faculty of Education and the University of Manitoba and Dr. D. King my faculty advisor at the Faculty of Education of the University of Manitoba. Dr. Sandals suggested methods for grouping the questions of the survey into categories that related to the intent of the study while D. Tataryn suggested wording and formatting that would ease the respondents completion of the survey, insuring accuracy as well as formatting for analysis by the mainframe computer at the University of Manitoba. The questions were developed through my familiarization with modes of computer assisted learning and experience as a teacher of computer literacy and computer education consultant.

The style for this survey was free form with a range of questioning styles. The questions related to each of the identified concerns of the study. The respondents of the sample population would react to these questions through yes/no answers, multiple choice or a statement of their opinion or perception on a five point Likert Rating Scale. The demographic data is

entered on a Nominal or Ordinal scale while questions relating to perceptions and opinions are entered on an Interval scale. Respondents recorded their answers on a standard University of Manitoba IBM form for subsequent transfer to a datafile in the university's mainframe. This was converted for access by Mantes (Manitoba Text Editing System) and analysis using a SAS (Statistical Analysis) file created under my Mantes file.

In developing the questions for the survey I decided to include some that reflected an attitude assessment as well as the stated needs purpose of the study. I believed that the attitude of social studies teachers in a positive or negative context would impact on the effectiveness of programs developed to integrate the computer in Manitoba Social Studies programs.

A frequency distribution was generated for all of the items in this survey. Data that has been weighed (interval scales) was tested for central tendancy, including the mean and standard deviation. Nine of the questions in the survey related to the attitude of social studies teachers towards computer assisted learning. These were grouped for analysis first to assess the attitude of social studies teachers in general towards Computer Assisted Learning and secondly to determine whether there is a difference between

urban and rural teachers. An F ratio was to be generated to determine the latter.

Groups were identified for comparison, the principle ones being the urban and rural teaching environments although the professional background of the teacher is also of interest in this study. The intent is to determine whether these are factors that influence computer use.

Summary

Inorder to conduct a descriptive analysis of the data in this study the statistics required included the calculation of frequency distribution, mean and standard deviation for the total sample. As groups were also being compared a further analysis of each of the groups was required. Attitudes, Computer Training and Teaching Environment (urban/rural) were studied with the assistance of charts and the comparision of means via the F ratio.

CHAPTER IV

A DESCRIPTION OF THE SURVEY RESULTS

Of the two hundred surveys mailed in early March 1986, fifty six were returned within the two week time limitation. Twenty-four of the respondents included personal comments on the last page of the survey. A summary and discussion of this is included in the las chapter of this paper. One of the IBM data records had to be rejected as the forty-ninth item had not been entered. This suggested that the respondent had missed a question and thus had shaded in answers in the wrong places on the IBM form. The data from one of the returns was entered manually as it had been shaded in pen instead of pencil. There were also a few multiple entries for some questions which had to be rejected. In general, the data was entered correctly and once converted and transferred to my Mantes file was readily available for analysis.

A frequency distribution routine was run through the data which generated a summary of the distribution of the data for each question in numeric and percentile form. The survey questions follow with the variable used to identify the question and a description of the distribution.

A: Demographic Data

Variable

Name:

GRADE   1. Indicate the grade level range that best represents the social studies program(s) that you are responsibe for:

1	2	3	4
(K 1 2 3)	(4 5 6)	(7 8 9)	(10 11 12)

Three of the respondents shaded in two or more of the grade parameters outlined in this question and thus are not included in the distribution. The results indicate a fairly good cross section of teachers from all grade levels with a noted preponderance at the highschool level.

POPUL   2. Indicate the student population of your school.

1	2	3	4
(0 - 199)	(200 - 499)	(500 - 999)	(Over 1000)

The majority of respondents teach in medium sized schools ranging in population from 200 to 999 students.

URBRU   3. Would you classify your school as urban or rural?

1   2

Urban   Rural

Although surveys were sent out to urban and rural teachers on a fairly even distribution, the returns from the urban teachers were far more numerous. Of the fifty-five returns analyzed, thirty-eight were urban.

POPDI   4. Indicate the approximate size of your school division/district on the basis of student population.

1   2   3   4

(0 - 1999)   (2000 - 4999)   (5000 - 9999)   (Over 10000)

A fairly even cross section of school divisions was represented with a slightly larger representation of divisions ranging from 5,000 to 9,999 students. (30%)

COMRE 5. Does your school have a designated computer resource person (or equivalent)?

1 2 3

Yes No Uncertain

Support for CAL seems to be fairly well established with seventy-five percent of the schools in which the respondents teach having a designated computer resource person. Only three of the respondents were uncertain.

COCON 6. Does your school division employ a computer education consultant/coordinator (or equivalent)?

1 2 3

Yes No Uncertain

At the division level support for CAL is also fairly strong with almost sixty persent of the divisions represented employing a computer education consultant.

TIME   7. If your answer to No. 6 was yes how much equivalent teaching time is allocated for this function?

1	2	3	4	5
(Less 1/4)	(1/4)	(1/2)	(3/4)	(Full Time)

Almost fifty percent of the teachers were unaware of the time allocation for their computer coordinator. Of those responding, the time allocation for a coordinator ranged between half time and full time for seventy-five percent of the divisions.

PROFQ   8. Indicate the Professional Qualification that best represents your circumstances?

1	2	3	4	5
Class 1 - 3	Class 4	Class 5	Class 6	Class 7

The professional qualifications of over seventy-five percent of the teachers responding to this survey were either Class 4 or Class 5. The rest held higher qualifications.

COURS   9. I have completed professional course(s) in Computer Assisted Learning.

1   2

Yes   No

Eighty-five percent of the teachers responding have not completed a course in CAL.

WORKS   10. I have attended workshops/inservices on Computer Assisted Learning.

1   2

Yes   No

Slightly greater than one quarter of the respondents had attended an inservice or workshop on CAL.

PRCAL   11. I have completed professional course(s) in Computer Assisted Learning for the social studies.

1   2

Yes   No

Only one social studies teacher had completed a professional course in CAL for social studies.

HARDW   12. Which computer hardware best represents the system(s) in use in your school?

                    1   2

    (Radio Shack Model III/IV's)   (Apple II or equivalent)

                    3   4

    (Commodore Pet Family)   (Commodore Vic 20/64)

                    5

    (Other)

Most of the schools represented in the returns (seventy-two percent) are using the Apple II family of computers. Five teachers were in schools where there were several systems in use. Commodore Pets and Radio Shack Model III/IV's were equally represented with ten percent each.

MECC   13. Our division/district is a member of MECC (Minnesota Educational Computing Consorium).

        1   2   3

      Yes   No   Uncertain

There was a fair represntation of MECC courseware users with forty-one percent of the schools represented being members of the consortium. However, almost one half of the respondents were uncertain.

MCALC   14. Our division/district is a member of MCALC (Manitoba Computer Assisted Learning Consortium).

<div align="center">

1   2   3

Yes   No.   Uncertain

</div>

Only one quarter of the respondants stated that they were members of MCALC but as in the case with the last question a very large proportion was uncertain (sixty-one percent).

EXPER   15. Indicate your teaching experience.

<div align="center">

1   2   3   4

0 - 4 yrs. 5 - 9 yrs 10 - 19 yrs. Over 20 yrs.

</div>

The overwhelming majority of social studies teachers have been in the classroom for five or more years with over seventy percent having greater than ten years experience.

CATAL   16. I have access to a catalogue/inventory of courseware that exists in my school/division.

1   2   3

Yes   No   Uncertain

Most of the respondents can determine whether there is courseware relevant to their programs in the division through a catalogue that they have access to.

BULK   17. Our division enters into bulk purchasing agreements with suppliers/publishers of computer courseware.

1   2   3

Yes   No   Uncertain

Twenty-seven percent of the respondents are aware of their divisions having bulk purchasing agreements with software suppliers. However, over one half of the respondents were uncertain.

DIWOR   18. My school division has taken the initiative to provide a workshop(s) for teachers on the uses of computers in the classroom.

1   2   3

Yes   No   Uncertain

Most divisions have recognized the need for professional development for teachers in the area of CAL with eighty percent having provided workshops for teachers.

B. Perceptions and Needs Identification

a. Present Perceptions and Status of CAL (Computer Assisted Learning)

JOURN   19. Professional Journals and periodicals have provided me with valuable information of Computer Assisted Learning for social studies.

SA   A   U   DA   SD

A small representaion of teachers have gained an insight into CAL for social studies with only fifteen percent agreeing with this statement.

TOOL   20. The advent of microcomputers in our schools has provided Social Studies teachers with a powerful new tool that enhances their effectiveness as teachers.

    SA   A   U   DA   SD

Social Studies teachers remain skeptical with respect to computer applications for their programs with only slightly over twenty percent agreeing that microcomputers might enhance their effectiveness.

FRIEN   21. With the development of effective, user friendly courseware, professional development is becoming less of an issue.

    SA   A   U   DA   SD

Only eleven percent of the respondents believed that either computer courseware was more user friendly or that professional development was unnecessary. This question could have been viewed as ambiguous.

AWARE 22. I am aware of the modes of Computer Assisted Instruction and view CAI as useful within the scope of the Social Studies Curricula for Manitoba.

SA A U DA SD

Seventy-five percent of the respondents were either undecided or disagreed that CAI could be useful in the teaching of the Manitoba Social Studies Curriculum.

DEJOB 23. The Department of Education has done a good job of providing Social Studies teachers with information on uses for the microcomputer in their programs.

SA A U DA SD

Most teachers perceive the Department of Education doing an inadequate job of keeping them informed regarding computer applications for their programs.

COMCO 24. Commercial Courseware is readily available in my school division.

SA A U DA SD

A much stronger representation of the respondents believed that commercial courseware was available to them with slightly over forty percent agreeing with this statement.

BUGET   25. Teachers in our school division have an adequate budget for purchasing courseware for their subject/grade level.

     SA   A   U   DA   SD

respondents were evenly split regarding monetary support for courseware acquisition. Approxiamately one third agreed that there was adequate funding and one third disagreeing.

ADMIN   26. I currently find the computer useful for administrative functions such as recording student progress, test and assignment preparation, etc.

     SA   A   U   DA   SD

A reasonable representation of social studies teacher (twenty-five percent) have found the microcomputer useful for administrative applications.

COSTL   27. At the present time I find that computer courseware is too costly to justify using the computer in my program.

SA   A   U   DA   SD

The largest proportion of respondents (thirty-eight percent) are undecided on this statement while the rest are fairly evenly split regarding the justification of courseware purchases because of cost.

USING   28. I am currently using the microcomputer for Computer Assisted Learning in my programs.

Yes   No

Eight returns did not have an answer to this question. Of the remaining, thirty-five social studies teachers were not using the microcomputer for CAL while twelve indicated that they were. The following seven questions were to be answered by those teachers who were using CAL. The number of respondents that did not participate in this section remained constant at thirty-five while twenty were indicating a position on computer use. I

am thus assumming that the eight respondents who did not answer this question are computer users.

Note: Answer the questions 29 to 36 only if you are using computer courseware to some extent in your programs. If you do not answer these questions procede to question 37 making sure that you enter your responses in the correct spaces of the IBM form.

INSTR   29. Indicate the percentage of instructional time that best represents computer use by your students.

1	2	3	4	5
(0-19%)	(20-39%)	(40-59%)	(60-79%)	(80-100%)

Those teachers using the computer for CAL use less than twenty percent of their instructional time for this purpose. There were a few interesting exceptions. One teacher indicated that students spent between sixty and seventy-nine percent of their time on the computer. This teacher might be invovled in a computer awareness/literacy program.

SETTI 30. Indicate the setting that best describes your situation.

1. I have access to a computer lab where students can work with selected courseware in small groups or as individuals.

2. I use the computer(s) as I would audiovisual equipment, signing out the machine from a resource center.

3. A computer(s) is permanently assigned to my classroom to use at my discretion.

4. other

Forty-five percent of the computer users have access to a lab for Computer Assisted Learning for their students. Thirty percent are signing out the equipment as they need it.

RECEN 31. Our school/division has established a computer software resource center from which I can borrow courseware for my programs on a sign out basis.

1	2	3
Yes	No	Uncertain

Almost one half of the respondents indicated that their division had developed a resource center from which they could borrow courseware for their programs.

DRILL   32. Computer courseware best compliments my program when used for drill and practice in a specified skill area.

SA   A   U   DA   SD

Slightly over sixty percent of the teachers using computers indicated that CAL was most effective for drill and practise in their programs.

TUTOR   33. Computer courseware best compliments my program when used for a tutorial on a specified topic or theme. (ie. a self contained unit of instruction including content, pre and post testing)

SA   A   U   DA   SD

Tutorial applications were positively viewed by slightly over fifty percent of the computer users.

SIMUL   34. Computer courseware best compliments my
          program(s) when used for simulating real life
          situations that students can manipulate and
          experiment with to determine cause and effect
          relationships. (ie.   economic   principles,
          negotiations,   international   relations,
          environmental issues)

     SA   A   U   DA   SD

          Simulations were also positively viewed by
          approximately fifty percent of the computer
          users.

PROBL   35. Computer courseware best compliments my
          program when used as a problem solving tool.
          (ie data base utilities used to create an
          inventory of information on a specified theme
          or in the use of a statistics package for
          analyzing data gathered by students in a
          research project)

     SA   A   U   DA   SD

          Only slightly better than one third of the
          respondents found effective uses for problem
          solving within their programs. It should also
          be noted that in responding to the questions

on modes of Computer Assisted Learning, between twenty-five and thirty-five percent of the teachers remained undecided.

NOCOR   36. I am using the computer for CAI to a degree but I find that there is not adequate courseware available for the Manitoba Social Studies Curricula.

SA   A   U   DA   SD

Only one teacher believed that there was adequate courseware available. The rest were either undecided or believed that there was a need for courseware tailored to the Manitoba Curricula.

b. Recommendations for Future Implementation

ETPPR   37. The Manitoba Department of Education and the Educational Technology Program should play a major role in the development of courseware for the Manitoba Social Studies Curricula.

SA   A   U   DA   SD

Over eighty percent of the respondents agreed that these institutions should play a major

role in the development of courseware for the Manitoba Social Studies Program.

APPRO   38. If the appropriate software and hardware were available I would be enthusiastic about using the computer in my Social Studies classes.

SA   A   U   DA   SD

Seventy-five percent of the respondent suggested that they would be enthusiastic about using the computer within their programs if the appropriate software were available. It should be realized that adequate hardware would also have to be available.

COMME   39. The Manitoba Department of Education should initiate bulk software purchasing agreements with commercial software suppliers for school divisions.

SA   A   U   DA   SD

About one half of the respondents believed that the Department of Education should enter into bulk software purchasing agreements with

the major suppliers. However, this was offset
by forty-percent who were undecided.

40 - 42. Social Studies Courseware is required under
each of the following instructional
strategies:

DRPRA   40. Drill and Practice:

   SA   A   U   DA   SD

      Over sixty percent of the returns indicated a
      need for courseware in the area ofdrill and
      practise.

TUT   41. Tutorial:

   SA   A   U   DA   SD

      Seventy percent indicated a need for
      computerized tutorials.

SIM   42. Simulation:

   SA   A   U   DA   SD

      Almost eighty percent believed that there was
      a need for simulations for their social
      studies programs.

It should be noted that for each of the questions on courseware needs only about twenty percent remained undecided.

TRAIN   43. Adequate training is available for interested teachers in the area of CAI through inservices, professional courses at the universities, and workshops provided by the ETP (Educational Technology Program).

SA   A   U   DA   SD

There was a fairly even split between respondents who believed that adequate training was available and those that were unsure (thirty-eight percent each). However, an additional nine percent strongly agreed that there was adequate training available through either the universities or ETP.

WILLI   44. I would be willing to take a course on the use of computers in the Social Studies if one were offerred in my area.

1   2

Yes   No

Just under eighty percent indicated that they would be willing to take courses in Computer

Assisted Learning if they were offerred in their areas.

NEED   45. There is a need for consultants and coordinators to assist teachers (of social studies) with the intergration of computers into thei classrooms.

SA   A   U   DA   SD

A strong representation of eighty percent of the respondents supported the need for consultants in their divisions or school to assist with the integration of CAL.

SHOUD   46. Manitoba Social Studies teachers should have input into the development of courseware for thier curricula.

SA   A   U   DA   SD

Almost all of the respondent believed that social studies teachers should have input into the development of courseware for their programs. Only four teachers were undecided and nobody disagreed with this statement.

FEW

47. I would prefer to have a few computers permenantly located in my classroom than have access to a computer lab on a regular basis.

SA A U DA SD

Most teachers (sixty percent) would prefer to have a few computers permanently assigned to their classrooms rather than take their students to a computer lab.

LAB

48. I would prefer to have access to a computer lab on a regular basis than to have a few (one or two) computers located in my classroom.

SA A U DA SD

The responses were consistent with the last question with only thirty percent of the respondent preferring the lab setting.

INVEN

49. A catalogue or inventory of social studies relevant courseware should be made available to each school in Manitoba.

SA A U DA SD

Almost all respondents supported the need for an inventory of software to be supplied to each school in Manitoba. (both commercial and ETP sources would be catalogued)

Survey Results - Frequency Distribution Summary

Demographic Data

Teachers represented by the survey returns appear to be well qualified and experienced professionals working in typical Manitoba schools. Although surveys were sent to urban and rural teachers on a fairly equitable basis, the majority of returns came from urban teachers. It appears that most divisions are attempting to meet the challenge of the new educational technology. Most schools and divisions have designated computer resource personnel. At the division level, coordinators are allocated one half or more time computer resource work.

Few of the social studies teachers responding to this survey appear to be computer literate, with only one having completed a professional course in computer applications for social studies. Only twenty-five percent had attended workshops and these were probably conducted at the division level, as over three quarters

of the divisions represented had provided computer literacy workshops for their respective staffs.

The vast majority of the schools represented by the returns are using the Apple II family of microcomputers. This is probably the result of the preponderance of educational courseware available for this system. Many of the school divisions have taken advantage of the MECC membership that licenses schools to dub MECC software through the Manitoba Educational Technology Program. Only twenty-five percent of the respondents were aware that their divisions were members of MCALC. Apart from these sources of courseware, several of the divisions enter into bulk purchasing agreements with suppliers and provide their staffs with a catalogue of courseware available in their division.

Perceptions and Status of CAL

Questions nineteen to twenty-seven of the survey were included to gain some insight into the attitutes and perceptions of social studies teachers in Manitoba towards Computer Assisted Learning. I was also interested in determining whether there was a significant difference in attitude between urban and rural teachers. In general, the responses to these statements were negative or undecided. Approximately

ten to twenty percent were consistent in supporting CAL as potentially useful within the Manitoba Social Studies Curriculum. Interestingly, a larger representation believed that courseware was available with adequate funding for its purchase. These individuals might have been considering courseware for all subject areas. In all cases, it was believed that the Department of Education could be doing a more effective job of providing information in the area of CAL for social studies.

Questions twenty-nine to thirty-six were to be completed by social studies teachers who were computer users. Twenty respondents consistantly answered these questions with a slight majority supporting all of the modes of CAL outlined with the exception of problem solving. Almost one half of the respondents have access to a computer lab while most of the balance sign equipment from a resource center as required. Of those using CAL within their programs, almost all believed there was a need for courseware support for the Manitoba Social Studies Curriculum.

Summary

Given that they received adequate support with respect to professional development and appropriate courseware, respondents to the survey appeared quite

willing to consider the integration of Computer Assisted Learning into their programs. It was felt that the Department of Education through the Educational Technology Program should play a major role in software development and/or acquisition as well as in the professional development of teachers. Social Studies teachers would like to have input into the development of courseware for their programs and displayed an interest in all modes of CAI with a specific emphasis in the area of simulations. These teachers would take courses in CAL if offerred in their area and support the need for consultants and resource people at the divisional level to provide direction and support for the classroom teachers. There was a fairly significant preference for a small number of computers assigned to the classroom instead of being scheduled into a computer lab. A catalogue of social studies relevant courseware should also be made available to all schools throughout the province.

Survey Results: Group Identification and Comparison

In designing the survey items were included that would permit a comparitive analysis. In particular I was interested in determining whether there was a difference between urban and rural teachers with respect to computer use as well as attitudes towards Computer Assisted Learning. I was also interested in determining whether teachers with some form of computer training might be more inclined to use computers for CAL within their programs. For this analysis four charts were generated that displayed the distribution of responses for each of the groups being compared. Following is a description of the information displayed in these charts:

Table One: Urban/Rural Teachers and Computer Use

Eight of the respondents did not answer the question on computer use but had gone on to complete the questions on how they were using computers. Of these, six were urban and two were rural teachers. Of those responding, eight urban teachers and four rural teachers identified themselfs as computer users. As a proportion of each group, however, there is little difference. Twenty-five percent of the urban respondents are computer users and twenty-seven percent

of the rural respondents are computer users, although the latter is based on a much smaller representation.

Table One

SURVEY RESULTS

TABLE OF URBRU BY USING

URBRU   USING

FREQUENCY PERCENT ROW PCT COL PCT	.	1	2	TOTAL
1	6 . . .	8 17.02 25.00 66.67	24 51.06 75.00 68.57	32 68.09
2	2 . . .	4 8.51 26.67 33.33	11 23.40 73.33 31.43	15 31.91
TOTAL	. .	12 25.53	35 74.47	47 100.00

Tables Two, Three and Four: Computer Training and Computer Use

Three items were included in the survey that monitored the degree of computer training that the respondents had received. It appears that few had received training beyond a workshop or inservice session. Of the seven who had completed a professional course in Computer Assisted Learning, three were using CAL in their social studies programs which is forty-six percent of the group. Of the thirty-nine who had not, nine were using CAL in their social studies programs which is twenty-three percent of the group.

Of the thirty-five respondents who had attended a workshop, ten or twenty-nine percent were computer users. Of the twelve who had not attended workshops, only two or seventeen percent were computer users.

Only one respondent had completed a course in CAL for the social studies. Although a response hadn't been entered in the computer use item this indiviual is probably one of the group that went on to respond to the questions on how they were using computers in their programs.

Teachers who had attended workshops seem more inclined to use CAL within their programs.

Table Two

SURVEY RESULTS

TABLE OF COURS BY USING

COURS USING

FREQUENCY PERCENT ROW PCT COL PCT	.	1	2	TOTAL
.	0 . . .	0 . . .	1 . . .	. .
1	2 . . .	3 6.52 42.86 25.00	4 8.70 57.14 11.76	7 15.22
2	6 . . .	9 19.57 23.08 75.00	30 65.22 76.92 88.24	39 84.78
TOTAL	. .	12 26.09	34 73.91	46 100.00

Table Three

SURVEY RESULTS

TABLE OF WORKS BY USING

WORKS USING

FREQUENCY PERCENT ROW PCT COL PCT	.	1	2	TOTAL
1	5 . . .	10 21.28 28.57 83.33	25 53.19 71.43 71.43	35 74.47
2	3 . . .	2 4.26 16.67 16.67	10 21.28 83.33 28.57	12 25.53
TOTAL	. .	12 25.53	35 74.47	47 100.00

Table Four

SURVEY RESULTS

TABLE OF PRCAL BY USING

PRCAL   USING

FREQUENCY PERCENT ROW PCT COL PCT	.	1	2	TOTAL
1	1	0	0	0 0.00
2	7 . . .	12 25.53 25.53 100.00	35 74.47 74.47 100.00	47 100.00
TOTAL	. .	12 25.53	35 74.47	47 100.00

Urban/Rural Attitude Comparison:

A component of this study was intended for determining whether or not there was a significant difference in attitude towards Computer Assisted Learning by urban and rural social studies teachers. A problem with the data related to the uneven distribution of urban and rural respondents. Only seventeen of the fifty-five returns represented the rural respondents. In order to determine whether there was a significant difference in attitude, an F ratio was generated for each of the attitude items included in the survey. F ratios, which compare the standard deviations of two groups, can be used for this purpose when the data is interval scaled and gathered from a normally distributed random sample. The analysis was conducted by running the ANOVA SAS routine through the relevant data in the Mantes data file. The result of this analysis appeared to indicate that there is little significant difference between urban and rural teachers regarding their attitude towards CAL. There was an exception regarding the attitude of teachers towards the Manitoba Department of Education and the job that it was doing with respect to keeping them informed on CAL developments for social studies.

CHAPTER FIVE

DISCUSSION AND RECOMMENDATIONS

This study involved research into views of educators regarding Computer Assisted Learning for social studies. The intent was to determine a role for microcomputers within the Manitoba Social Studies Curriculum. To achieve this, I reviewed relevant literature and surveyed a random representation of Manitoba Social Studies teachers. The literature review provided me with an overview of the modes of Computer Assisted Learning along with some pros and cons for each. The survey allowed me to determine current perceptions of social studies teachers regarding CAL as well as make some recommendations regarding the integration of CAL within social studies programs. Many of the respondents to the survey included personal comments on the last page of the survey form. As many of these contributed to the findings of this study I have included them in the this discussion along with my own comments.

Survey Results: Respondents Comments

1. Since I am an elementary classroom teacher, teaching most subjects, and tending to stress the basics, I am not terribly aware of computers in Social

Studies. I use computer programs in Math and Language Arts and, of course, Computer Awareness for beginners. I think your research is worthwhile because in using the present Social Studies curriculum, I feel I need all the help I can get. Materials to supplement the curriculum are sparse. I hope you have the time to pursue your interest. Good luck and BRAVO!

Comment: This individual is in general support of CAL and computer literacy but is looking for support and guidance from the Department of Education. Time to take on a new program or learn about a new technology is a serious problem for any teacher. Although the inservicing is being provided through the ETP there continues to be a perceived need for support. This respondents position certainly reflects the survey results that indicate strong support for consultants, inservicing and catalogues of relevant software.

2. I am a principal and do not teach Social Studies. That's why I left out #29-36. (survey questions) I have a serious interest in Computers and Social Studies. We have initiated a Canada Studies Database project in our school division. Cheryl Prokopanko' told me about your work. Contact me if you'd like to discuss our project.

Comment: This is another strong supporter of computer use in the schools. In this case the individual recognizes the value of the computer as a research tool. This is one of the applications that is not dependant on a large library of courseware as a variety of data base utilities exist suitable for a range of grades. Teachers, depending on the hardware and software available to them can create their own information storage and retrieval systems or can access already existing information data bases. This is an Technology Program. With more schools participating in the remote micro facility an information distribution system for the social studies would be a valuable service to provide. Social studies teachers would not have to wait for the software to be developed as may be the case with some of the other modes of CAL.

3. I have not used the computer to teach Social Studies because I have not yet come across software that dealt specifically with the topics in the curriculum. I have used the computer for Math and Language Arts.

Comment: This comment reflects a lack of awareness as well as a reality. In reviewing software for this research I came across over sixty titles suitable for the social studies. Canadiana is limited as pointed out by John Sylvester earlier in this paper but there are

drills available for map skills and simulations for climate study, political issues, etc. There certainly are not enough of these to plug into the existing curriculum at the appropriate level.

4. We will never get anywhere in this area with computers unless two things happen:

A. computers are more available.

B. We write our own material, appropriate to our courses, and not simply try to shove in expensive American programs.

Comment: This respondent points out another reality as well as a recommendation that might be unrealistic. Inspite of the tremendous increase in the amount of hardware in our schools over the last few years the ratio of computers to students is still quite small. One computer per classroom is still a goal to be realized in many divisions and schools or divisions may have priorities for computer use that do not include their social studies programs. Developing software is both time consuming and even with an authoring language requires some expertise. As pointed out in the literature it would probably be more effective if a team of social studies teachers proficient in curriculum development and instructional design worked with a team of skilled programmers.

5. If computer training is important for schools, then the inservicing necessary should be on school time.

The whole emphasis of the new Social Studies. curriculum is on getting kids to think, not to learn facts. Therefore, I think that if computers are used primarily for drills and practises then the computers will be working against the curriculum goals.

Comment: A need for computer literacy on the part of the teacher is reflected in this comment. Drilling is important in social studies as well as other subject areas. However, there are many other ways to use computer that encourage "kids to think". The need for inservicing is well taken and reflects a need for commitment both from the school divisions integrating CAL and from the Department of Education promoting CAL.

6. I hope your research takes into consideration a one-room, Hutterite School. I have access to one computer at my home school, MacGregor Elementary School. I am currently not using the computer at all. I really feel that my contribution to your survey will distort your figures so please fell free to discard my responses.

Commnent: Although this teacher certainly could use a computer for CMI or general administrative functions

our education system must reflect the needs of the community. In this case, computer technology may not be considered a priority at all.

7. At this time I am unfamiliar with available software because I do not have access to hardware for my classes.

I am skeptical about the value of department involvement in software development because I am unimpressed with recent curriculum developments by the department.

Comment: I could only speculate as to why this individual is "unimpressed with recent curriculum developments" however this concern does reflect a professional develpment priority with respect to teacher computer literacy and courseware for the social studies.

8. Most teachers of Social Studies throughout the province lack even the awareness that CAI is useful in the classroom. There is still a general "fear" or ignorance of computers in the Social Studies. I would also like to see the Correspondance Branch use computers for correspondance course where the student has access to the computer.

(A word of caution: teachers are worse than students for filling out long surveys, so you may be disappointed at the number of these that you get back.)

Comment: This individual makes a statement that is judgemental without being based on fact. Yet, the survey results support the concern especialy in light of the attitude assessment which displays a large degree of skepticism towards computers in the classroom. The use of computers for correspondance courses is an interesting recommendation as the technology exists to provide this service in Manitoba.

9. Proper and effective teaching involves a close and "human" relationship between teachers and student, not between a computer and student. (Social Studies-History)

However, I am sure that there are a range of possibilities that computerware could provide for the Social Studies teacher. Courses, workshops and professional development in this area are a necessity.

Comment: Again there is a lack of awareness and a preconception that students become automatons before a computer monitor. Although students respond well to interactive drills on a microcomputer other computer assisted learning activities may require a group

approach that includes considerable teacher support. Simulations may require outside research on the part of the students and the teacher is usually required in a debriefing after the execise to help relate the model in the simulation to the real world. This person is open minded enough to consider possiblities but recognizes the need for teacher training in the area.

10. I have absolutely no knowledge of, or experience with computer assisted learning for Social Studies. From general computer courses that I have taken, I have learned only one thing. I don't need one!

Comment: A closed mind is difficult to penetrate. From this statement it is difficult to determine what aspect of CAL has frustrated this individual. The technology is not for everybody and because of limited hardware in the field should not be an immediate concern.

11. I am not a reliable source of information as I do not presently teach Social Studies, and have not since 1980-81.

No Comment.

12. I am a former intensive user of Program Library Users' System but due to restructuring of school computer allocations, have lost my access to computers

in general. These machines can assist, if available, and if material appropriate to the programs of study is available. Far too much of what I have seen is "mickey mouse" or too American to be of use in high school here.

Comment: Access to hardware became a problem for this computer user. However, the respondent recognizes the potential of the computer in the classroom inspite of some exposure to inappropriate courseware. The need for continued PD is supported by this response. Some American courseware can be adapted to the Manitoba Curriculum and more Canadian material is becoming available. Grolier has a Canadian series and MCALC has released a few Canadiana packages and continues to develop social studies courseware.

13. If there were sufficient appropriate programs available then computers could be permanently stored in a classroom. (comment on questions 47 and 48)

Comment: Computers can only be useful in the classroom if the courseware exists to support their use on an ongoing basis. This also depends on how the computer is being used. If this respondent believed that wordprocessing and data base activities were

appropriate for his program the computer could be justified on an ongoing basis.

14. I think that at present time in Social Studies, teachers are designing their own integrated units. These units touch base with the curriculum and current research information.

I think we need formats that we can use and then program our information into.

Comment: This respondent seems to be implying a need for an authoring language, probably for tutorials, that a teacher can use for developing their own courseware packages related to their interpretation of the curriculum.

15. Time! On a full time job of teaching it is difficult to have time to find relevant courseware. Question 49 certainly would help me. (provide teachers with a catalogue of Social Studies relevant courseware)

Comment: This is confict with the last comment that suggested that teachers have time to develop their own courseware. Again, this individual emphasizes the need for support especially with respect to suitable classroom materials.

16. I have done some work with a computer, but I am somewhat leery about its use for Social Studies. Its value, if it has any, would be its ability to store information and for drill and practise. However, I am of the opinion that this has little to do with Social Studies. Social Studies, I think, deals with possibilities, not with absolutes. If I want to give my kids busy work, I don't think I need a computer. We are all anxious to jump on the bandwagon. My opinion is probably a minority one. I would be interested in knowing what other Social Studies teachers think. Maybe you could send me some information at a later date.

Comment: This respondent recognizes that there has been pressure on teachers to jump on the computer "bandwagon" without often understanding why. The literature indeed supports this position but there are many sound applications for the computer in the social studies classroom. This person, although skeptical, admits some possibilities and an interest in what other teachers think. Some workshops on the use of data bases and simulations would benefit this person. Computers can be used to experiment with possiblities.

17. Philosophically disagree (strongly) with CAI. No thinking involved! Social Studies is not a "yes/no" pick the correct answer subject!

Comment: A lack of understanding of the variety of modes of CAL is demonstrated in this remark. Computers do not have to be used for '"yes/no" pick the correct answer' activities.

18. As new courses are being brought in at the senior high level, there is not enough time to spread out into computers at this time. Secondly, commercial materials are either Ontario or USA developed, neither of which fit our curriculum. Also, most courseware is so simple.

Comment: Ontario based materials can support the Manitoba curriculum as well as some American material. However, this does backup the argument for more "home grown" courseware and certainly supports the work being done be MCALC and ETP.

19. Comment on Question # 30 - I said "other" as we have one computer shared between two classrooms.

Being a grade two teacher, I haven't found any suitable computer programs for Social Studies.

Good luck! I hope someone will listen to your findings.

The text book bureau should offer more courseware and list ETP materials as well.

Comment: This teacher supports the need for this sort of study but also demonstrated a lack of awareness of

support already being provided by the Department and ETP. For example, and ETP catalog was sent around to all schools early during the spring of '86 as well as in the latter part of the fall of '85 the change in courseware distribution procedures was announced.

20. The new Social Studies program that we teach is for teenagers who are very slow academically, with reading levels ranging from grade's two to three.

Comment: This is more of a statement than a suggestion but CAL has found strong support from special education specialists and again with the appropriate courseware could be used in a special education social studies program.

21. I use the computer to help students learn to organize and write essays through our resource teacher.

I do not know how to use it myself nor do I know of specific Social Studies programs available unless they are remedial or in the form of games.

Comment: With wordprocessing and tutorials on essay writing the computer becomes a valuable tool for creative writing. This respondent recognizes this tool aspect of CAL and the mode could be readily transferred to report and project preparation for social studies. This person is unfamiliar with specific social studies

courseware and thus verifies the need for professional development and the distribution of catalogues, etc. on social studies relevant material.

22. I feel that at my level (Gr. I) the use of a computer is not important. We have enough of a workload without adding anymore. If a computer was in my room I would make an effort to set up a simple activity for my students. I feel at the Gr. I level we have more important things to cover than the use of computers, Gr. III is soon enough.

Comment: Time and priority are the issue in this remark. A teacher must be willing to look at CAL with an open mind. In many cases CAL can help a teacher become more efficient with their time although this involves the initial effort.

23. Although the Social Studies Program is very well laid out, especially at the primary level, the Department of Education has not looked into the particulars as to how the program can be implemented adequately. Some of the topics that need to be covered are beyond the grasp of the child's stage of development. Expecting a seven year old to think back, look into the past and predict the future are rather unrealistic. We have very few resource materials. Our

curriculum is one year behind that of Ontario. I would like to know why. Computer Assisted Learning in all subject areas would be very useful. I realize that I was off topic but I hope you can see my frustration in trying to do a good job in a subject that lacks resources.

Comment: Frustration in coping with the new curriculum is reflected here. This is not relevant to the study as the respondent indicates but a statement is included that is supportive of CAL.

24. I teach Computer Literacy for Grades 7 - 9. I find that the novelty of CAL is wearing off. A good teacher can do better than rely on poor programs and C.A.L.

Comment: Unfortunately many poor programs are already in the system. It is only in the past few years that review guides have been available for courseware selection. Budgets for these programs have been very tight in most school divisions. Thus, early courseware continues to be used inspite of its disadvantages or neglected leading to a underutilization of the hardware.

25. I don't understand most of this because I've had only minimal introductory training on a computer. I can see some value in using computers to assist with some

Social Studies teaching, but I feel that the human touch is still the mainstay of this course. Although my major teaching load is Geog. 100 and 101, I also teach Grade IX Social Studies.

Comment: This is a healthy attitude for any teacher. The myth the the computer will replace the teacher completely is just that, a myth. Viewing the computer as a tool or extension of the classroom teacher is an appropriatte outlook.

26. I am totally unfamiliar with this Computer Assisted Learning for Social Studies. I would be interested in finding out more information regarding this program.

Comment: This open minded statement demonstrates a willingness to learn given the opportunity and supports the survey results that indicate the need for and willingness to participate in professional development in the area of CAL for social studies.

Summary

In general the comments from the respondents reflect a lack of awareness in terms of the broad range of applications for computers in education and there are some strong negative feelings, partly because of this lack of awareness or because of a few frustrating experiences with some courseware. It is interesting

that some are using computers as a tool within their programs either for information storage and retreival or for wordprocessing. Many of the statements supported the need for this study and reflected an interest in the results. Although uncertain as to the value of CAL many of the respondents were willing to attend workhops or look at courseware for their programs if made available to them.

Computer Assisted Learning

As would be expected of any instructional methodology, Computer Assisted Learning must be pedagogically sound. Facts or concepts must be taught that are worth knowing and in a manner consistent with proven educational techniques. The setting or context for CAL must also be appropriate, as a potentially useful courseware package can become ineffective through the lack of preparation on the part of the teacher. Computerization of the education system includes both traditional methodologies as well as innovative modes that are often impossible without the computer. Carol Chomsky had stressed that the computer must take us beyond paper and pencil type activities or it can't be justified in the classroom. Simulations which are readily justified because of their ability to help students learn cause and effect relationships are

improved when computerized. More variabales can be controlled in the model and because of the computer's processing speed the hypothesis can be tested several times before drawing a conclusion.

Drill and practice activites as well as tutorials are certainly not new as instructional techniques. However, with the microcomputer, new dimensions are added. These include: immediate feedback for the student in a supportive mode; computer monitored progress, permitting a teacher to assess the learning stage of each student; entertainment through an interactive game format and built in pretests and post tests. These modes of CAL permit the classroom teacher to extend themselves in the classroom through individualizing programs for their students. Proven programming formats for the above are well established today. However, Canadian content is difficult to find, particularly for the Manitoba Social Studies Curricula. This has been frustrating for teachers who realize the potential of a microcomputer but on examining available courseware find that they must adapt American material or programs that are not quite relevant to their grade level. The market might be too limited or the content range too great for commercial software developers to pay much attention to social studies. It is more realistic for these people to develop math, language

arts and science courseware that can be distributed in both the Canadian and U.S. educational market place. John Sylvester used this argument when defending MCALC as one of the chief developers of Canadian content courseware. Canadian Studies material for our social studies curriculum was also given a high priority in this report.

As stated, the advent of the microcomputer has provided teachers with an excellent tool for administering simulations. More variables can be controlled and students can receive immediate feedback after making choices. They can run the simulation several times in order to fully comprehend the cause and effect relationship being studied. Simulations definitely have a place in the social studies classrooms of the 1980's. The Manitoba Social Studies Curriculum has as its basic premise, the need to help young people understand the physical, political and social forces that contribute to their lifestyles and the lifestyles of other peoples of the world. Comparative analysis is stressed as a one of the means for attaining these goals (Appendix A). Well designed simulation games can be developed that allow students to come to grips with these forces. Many are already available that help students understand the principles of business, trade, settlement, agriculture, etc.

although the content is often more relevant to the United States.

The methodolgies outlined above are courseware dependant. In order to integrate them into a Manitoba Social Studies program the teacher must first determine whether or not the courseware is appropriate for the unit of instruction from a content orientation as well as learning level appropriateness. Manitoba teachers already have access to a wide range of computer software that can be integrated into most levels of instruction for language arts, mathematics and science. This is not the case for the social studies but there are many ways to use the computer that are not heavily courseware dependant. The computer is a great problem solving device and given the appropriate utility program can be used to store and retrieve information for comparison or other analysis. Students from the intermediate level upwards can be shown how to create databases or access already existing databases. With a modem and the correct software students can conduct research activities for a social studies program that would be otherwise impossible. Utilities have been developed for classroom use that permit students to take surveys, generate statistical diagrams and prepare polished reports. For example, computer technology played a major part in the production of this paper

through word processing, statistics generation and diagram generation. Database, wordprocessing, spreadsheet and statistics packages are available for every grade level from elementary to senior highschool. For these applications it is not necessary to wait for the appropriate software to be developed. It already exists.

Although these comments support a role for the microcomputer in the social studies classroom they are dependant on two areas of consideration. The first involves access to the resources. Without the hardware and courseware they are only ideas. The second relates to teacher preparation. Although the microcomputer has been in most Manitoba schools for half a decade, many divisions in Manitoba continue to have as a priotity, computer literacy for teachers (not students). This need is certainly reflected in the survey results of this study.

What are Manitoba Social Studies Teachers Saying about Computer Assisted Learning?

The social studies teachers responding to the survey were fairly representative of the Manitoba teaching environment. Few were computer literate beyond a workshop or inservice although twenty of the fifty-five respondents were using CAL to some extent

within the programs that they were responsible for. However, the class time allocation for this integration was consistently under twenty percent.

Manitoba social studies teacher have yet to be convinced that their is a place for computer assisted learning in their programs. Responses to the attitude questions in the study reflected little support for the CAL as it is currently perceived. Only twenty percent believed microcomputers might enhance their programs and even fewer (11%) saw courseware as being adequate. A strong representation also were disatisfied with the support they were receiving from the Manitoba Department of Education. There was considerably more indecision when it came to monetary support and the availability of courseware. This might have been because these teachers believed that computer education was already receiving too much funding and did not want to support the addition of funding to something that they were having difficulty justifying. Many of these frustrations were also demonstrated in the personal comments included at the end of the survey. The more critical remarks, however, reflected a lack of computer literacy on the part of the respondent as outlined in my comments in that section of the paper.

Inspite of skepticism regarding the current role of microcomputers for social studies the survey results

indicated a willingness on the part of the respondents with respect to learning about CAL. Seventy-five percent would use computers in their programs if the appropriate software were available and there was almost unanimous support for teacher input into courseware development. The study demonstrated the need for the Department of Education to play a major part in courseware selection as well as develpment and teachers would like to see direction provided right down to the school level via consultants and coordinators.

There was a preference for permanent computer placement in the regular classroom although this would probably depend on what the hardware was being used for. One computer with a large screen monitor might serve an entire class adequately for a simulation or demonstration but a lab would be necessary for some word processing activities.

Urban divisions don't appear to have an advantage over the rural divisions with respect to hardware and software accessiblility. This might reflect the much stronger representation of urban respondents in the returns. Also, as only a small representation of the respondents had formal training in CAL, particularly for social studies, the results are inconclusive regarding training as an influencing factor on computer use. However, teachers with formal training would be in

a better position to assess the worth of CAL for their programs.

Recommendations

Some social studies teachers have accepted the challenge of the electronic age that we live in and have explored uses for the new technology within the scope of their programs. It is a potpourri however, and there are a wide range of applications to choose from. Manitoba educators may be limited in some areas because of courseware content and design problems. Yet, there are some applications that are readily available to them. This is especially the case when using the microcomputer as a research tool. It is apparent from this study that computer literacy for educators should continue to be a concern for the Department of Education. Inspite of their skepticism, responents in this study demonstrated not only a willingness to learn about CAL for the social studies but a willingness to assist in the development of courseware for their programs.

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APPENDICES

APPENDIX A

Data Distribution - Summary Figures

Data Distribution - Summary Figures

The following figures depict the distribution of of responses to questions in the survey that are relevant to conclusions being drawn in this study. The question is included followed by a bar graph that illustrates the data distribution.

Figure One

3. Would you classify your school as urban or rural?
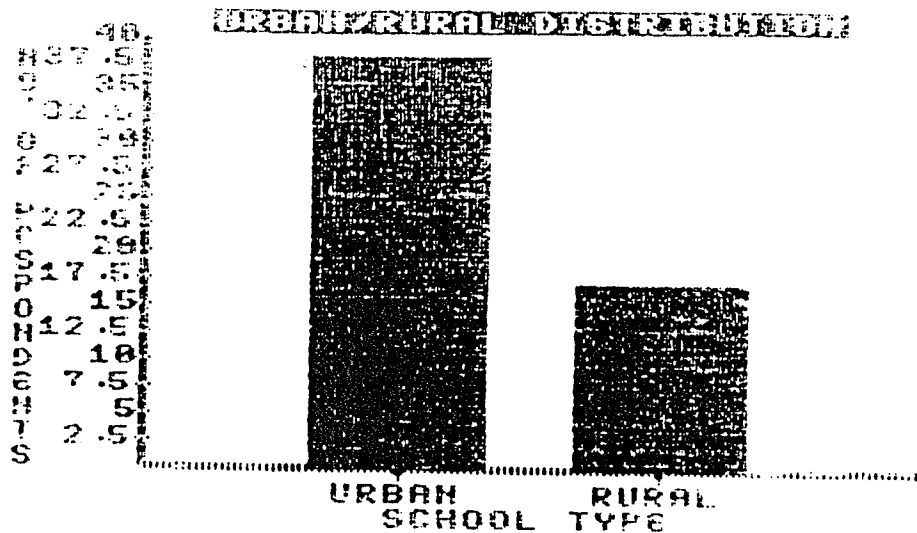
Figure Two

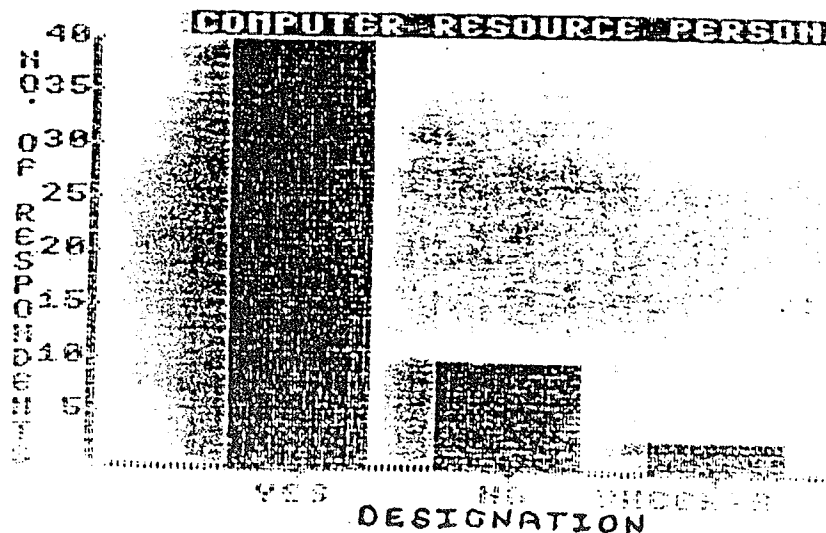5. Does your school have a designated computer resource person (or equivalent)?

Figure Three

6. Does your division employ a computer education consultant/coordinator (or equivalent)?
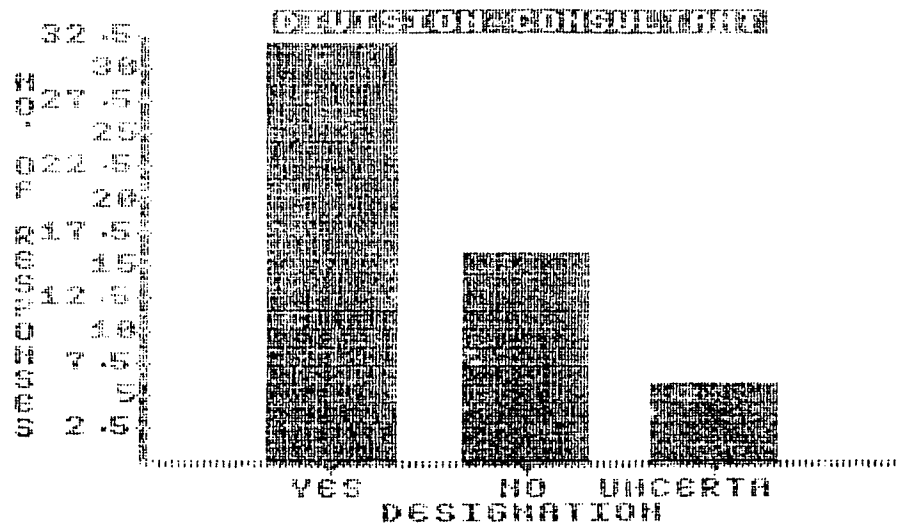

Figure Four

9. I have completed professional course(s) in Computer Assisted Learning.
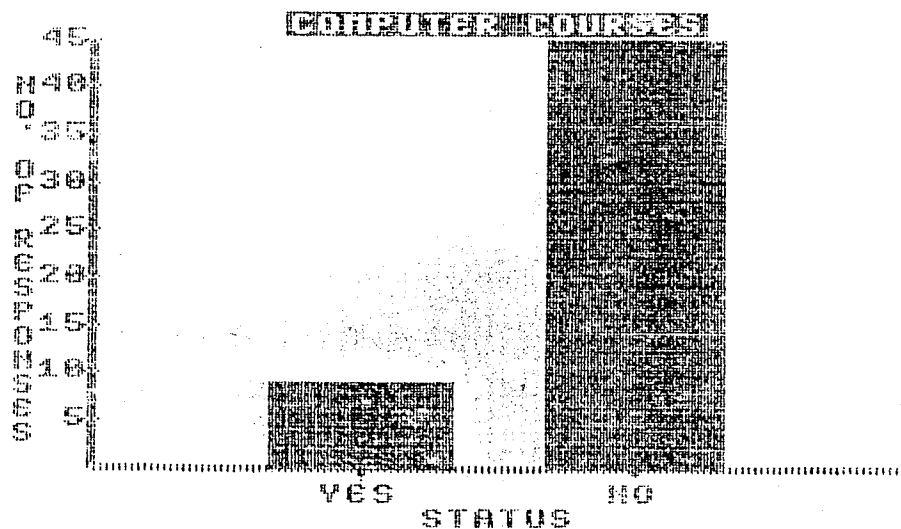
Figure Five

28. I am currently using the computer for Computer Assisted Learning in my programs.
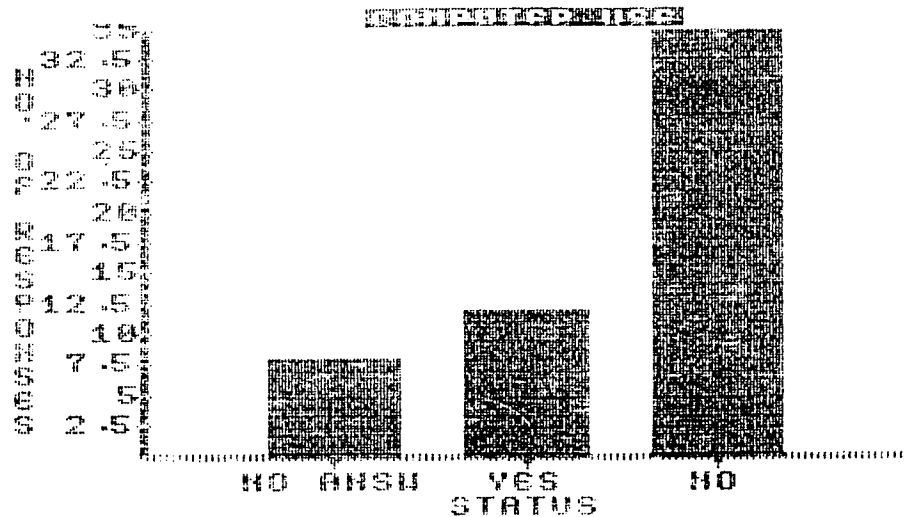
Figure Six

29. Indicate the percentage of instructional time that best represents computer use by your students.
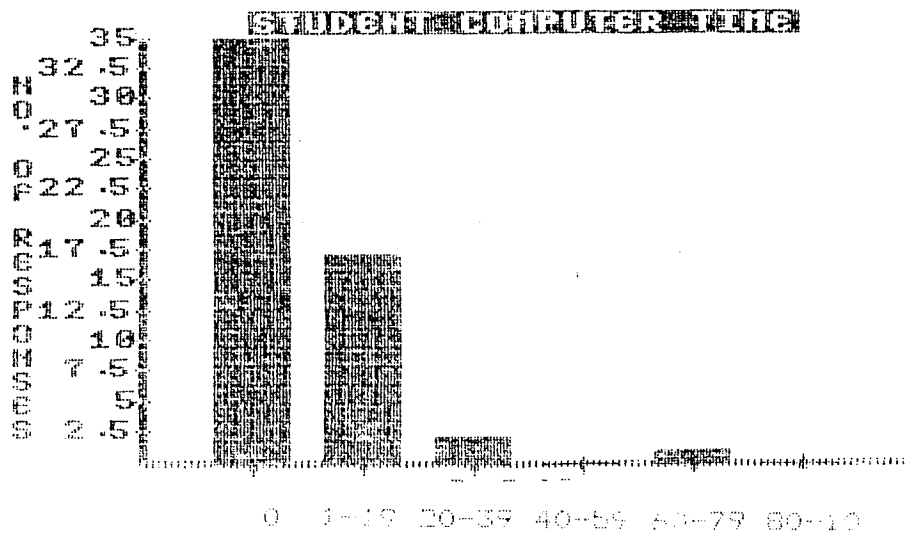
Figure Seven

38. If the appropriate software were available I would be enthusiastic about using the computer in my social studies classes.
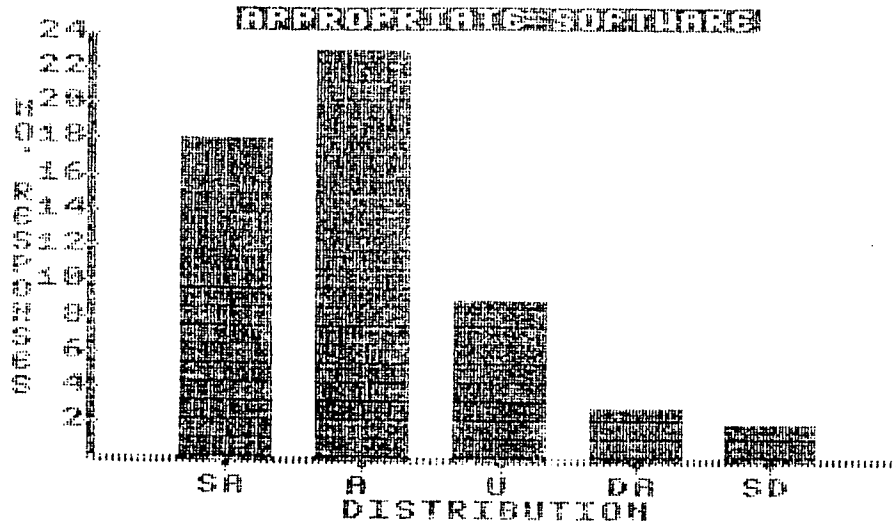
Figure Eight

39. The Manitoba Department of Education should intitiate bulk purchasing agreements with commercial software suppliers for school divisions.
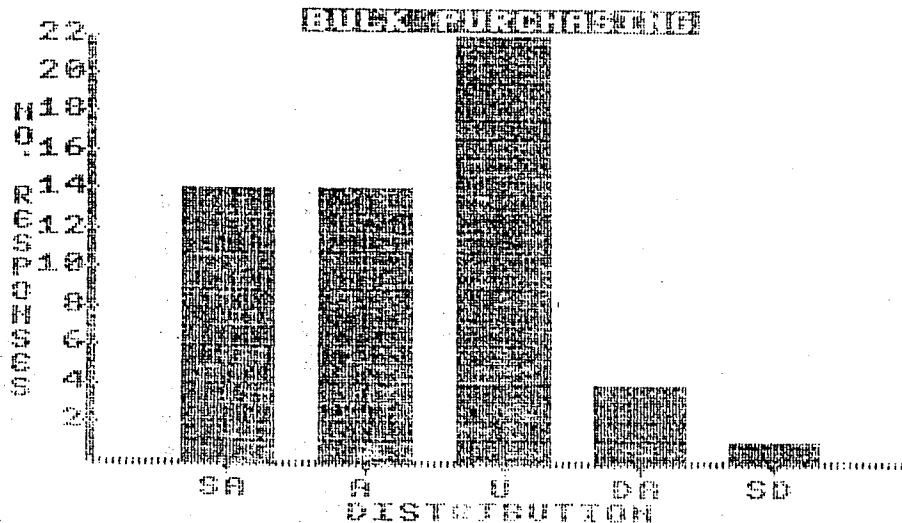
<u>Figure Nine</u>

46. Manitoba Social Studies teachers should have input into the development of courseware for their curricula.
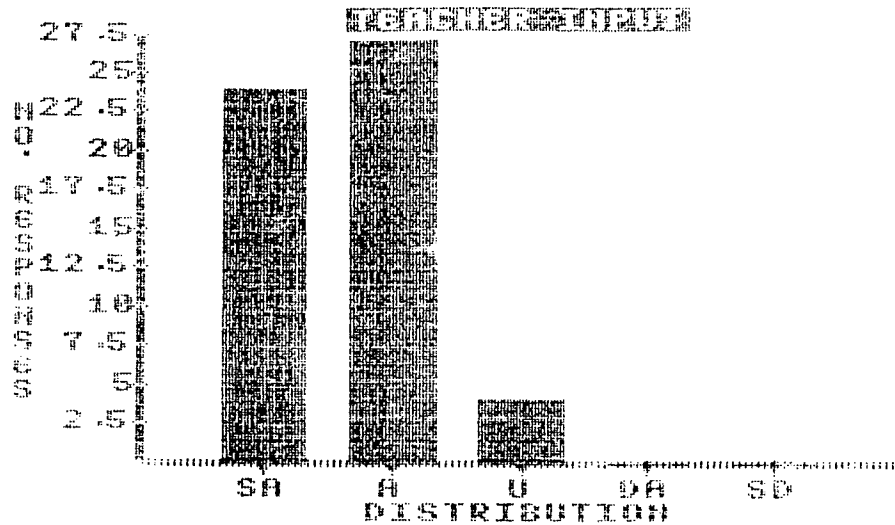
<u>Figure Ten</u>

49. A catalogue or inventory of social studies relevant courseware should be made available to each school in Manitoba.
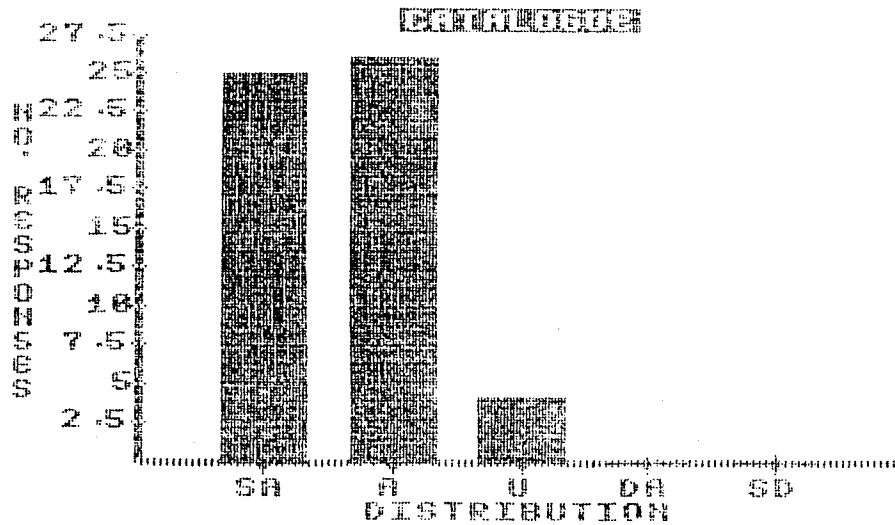
Figure Eleven

This graph illustrates the range of scores for the nine questions that tested for attitudes and perceptions regarding computer use. A score that represented strong support for computer use would be nine as the respondent would have selected the strongly agree choice for each question wihich was weighed at one point. A score that represented strong opposition to computer use would be forty-five as the respondent would have selected the strongly disagree choice for each question which was weighed at five points. An undecided position would be a score of twenty-seven or three points for each undecided response.
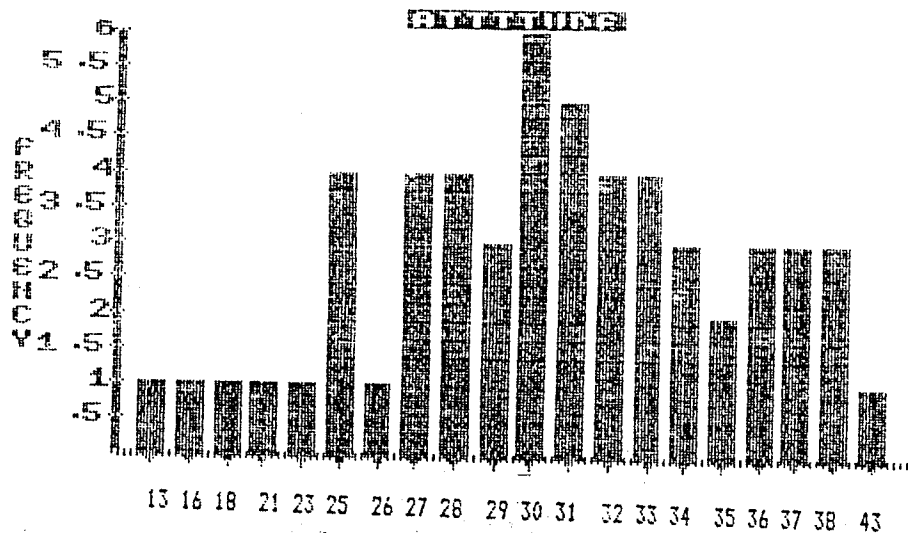
Appendix B

A Summary of the 1985 K - 12 Social Studies Overview from

the Manitoba Department of Education

Appendix B

A Summary of the 1985 K-12 Social Studies Overview

from the Manitoba Department of Education

This summary is included to provide a reference for the implementaion of Computer Assisted Learning within the context of the Manitoba Social Studies Curricula. For a more detailed outline of Social Studies Curricula for Manitoba Schools, readers are directed to the subject/grade curriculum guides which are also available from the Manitoba Department of Education.

Social Studies curricula in Manitoba Schools have been under revision since the latter part of the 1970's. Most of the new programs have been piloted and are currently in the implementation stage in most Manitoba schools. Thus, this curriculum overview should present the latest philosophy with respect to Social Studies instruction in our schools.

Thrust:

"The major thrust of the K-12 Social studies program is to explore the ways of life of people." (1) The emphasis is on understanding and awareness. The program stresses comparative analysis but not necessarily the passi ng judgement. Young people need to understand the physical, political and social forces that mold their lifestyle and the lifestyles of people in other parts of the world. The new program is less Canadiana and more Canada and the world,

stressing an interdependance in the international community. The disciplines of History and Geography are less clearly defined although the historial and geographic perspectives are ever present. Within the K-12 spectrum the trend is to commence with the local community, including the family, and expand outward to encompass the world on reaching junior high levels with more indepth studies in the highschool programs.

The two compulsory courses at the highschool level are intended to entrench an understanding of Canada stressing its diverse nature economically as a result of historical and physiographic factors. National unity is not to be taken for granted and students are to understand that we are strongly influenced by external forces, especially from the United States.

The program also stresses critical thinking on the part of the student. Course content is to be taught within the context of relevant issues and students are expected to be able to formulate defensible viewpoints as well as be aware of courses of action that citizens can exercise. In other words students should also gain an understanding of the political system in Canada and how they are a part of it.

The K-12 curriculm is intended to be developmental with clearly defined objectives for students graduating from highschool. These include:

-an awareness of the disparity between developed and undeveloped nations

-interdependance in the world as a result of limited resources, trade and alliances

-the impact of science and technology

-rapid and inevitable change

-lack of human rights in many parts of the world

-ideological issues in the modern world

-trends towards international organizations

-the threat of war in relation to nuclear arsenals and friction between superpowers

The Social Studies curiculum draws on a broader base than the disciplines of Geography and History and is in reality very interdisciplinary. It is also accepted that Geography and History have tended to draw on the other Social Sciences in recent years. The content of the overall program is organized around a collection of interdisciplinary concepts. These include:

location - place in space as well as distribution

causality - cause and effect relationships

interdependance - reliance of one thing on another

power - authority or control of one over another

time - measurable periods during which an action, process or condition exists or continues to exist

change - quantitative or qualitative over time

resources- things in the environment useful to man

group - assembled individuals for a common purpose

decision making - examining alternatives and making a choice

technology - how have natural products of the world been
used to alter the way that people live

culture - how people work and live to satisfy their basic
needs

identity - the perception people have of themselves

interaction - reciprocal action between individuals or
groups with others or the environment

diversity - the condition of being different when comparing
groups

needs - the identification of those things needed for the
health and well being of individuals

In understanding these content organizers (concepts)
individuals should be able to understand an issue that spans
several disciplines.

Content:

In selecting content for the social studies an
accepatable definition must be considered. For the purposes
of this overview, social studies is defined as the areas of
knowledge that deal with the interrelationship between
people and their environments, both physical and social. the
three main areas of content are identified as the knowledge
of theindividual; the knowledge of the physical environment

and the knowledge of the social environment. In selecting
the content for each level Hilda Taba's criteria were
considered and include: appropriateness for student
developmental level; significance withing the context of the
contemporary world; durability in terms of addressing issues
of lasting importance; balance in scope and depth and
validity in terms of relelevance to the discipline (social
studies).

The themes or titles for the Manitoba K-12 program are:

K - Exploring My World

1 - Human Needs and Human Interdependance

2 - Changes

3 - Communities today

4 - Communities Around the World

5 - Life in Canada Today

6 - Life in Canada's Past

7 - Spaceship Earth

8 - People Through the Ages

9 - Canada Today - Canadian Studies

10 - North America - A Geographic Perspective 100/101

11 - Canada - A Social and Political History 200/201

12 - World Issues 300/301

Each grade guide follows the same format and includes the
following topics:

1. A grade overview with the major iseasand generalizations

2. Unit overviews with unit topics and focusing questions

3. Four categories of objectives

4. Teaching strategies and learning objectives

The four categories of objectives are learning objectives and are outlined below:

Kowledge objectives which include concepts, ideas and generalizations to be emphasized and developed.

Thinking and Research Skill objectives which include gathering data, interpreting data, drawing conclusions and critical thinking.

Attitude and Value Skill objectives that help students to develop attitudes, feelings, sensitivities, interests and values which enable them to become effective and responsible citizens.

Social Participation Skill objectives help develop informed people who can participate in and work towards achieving mutual goals for an informed world.

These learning objectives are critical to consider for the teacher or administrater who is looking at the purchase and use of computer software for use in a social studies program. In considering these factors the computer using

teach is accepting the need for pedagically sound software (as defined earlier in this paper).

The developers of the Manitoba Social Studies Curriculum support intellectual development process outlined by Piaget and others which consider a series of phases or stages that are progressed through by children as they mature. These include a pre-operational for ages 2-6, a concrete operational for ages 7-12 and a formal operational for ages 13 and up. It is interesting that the developers of the curriculum recognize that there can be a variety of stimulants that contribute to the development of these learning processes including hands on activities, peer interaction as well as questioning and discussion. Papert, in Mindstorms, also presents us with the concept of a stimulant or catalyst that might trigger certain learning processes. In his case it is the programming language LOGO which is the catalyst for developing mathematical concepts.

Teaching strategies that attend to these learning processes are also outlined in the Overview and include the following:

-Students are encouraged to see meaning and significance in what they are doing.
-New learning should be based on what has been learned before.

-There contact established with concrete reality or experience.

-Frequent interchange of thought and ideas should take place.

-Questions, problems and dilemas should be as open ended as possible.

-Students should be active as opposed to passive learners.

-Thought provoking problems should be presented for which there are not ready made solutions.

-Inquiry and discovery should be emphasized for students.

-Teachers should be viewed as inquirers and resource persons along with the students.

-Activities and actions of people should be given more importance than objects or stand alone facts.

-Cognitive and affective outcomes of student learning rather than accumulation of detailed facts is to be stressed.

-There should be a variety of source materials in the program icluding pictures, books, records, paintings, audio-visual materials. (should computer database be considered here?)

-questions should come out of studying history, geography and the other social sciences.

The final note on instructional strategies stresses integration. Communication is paramount in the teaching of social studies and thus improvement of a students language

capabilities should be a continuous day to day process in the teaching of social studies.

In evaluating student progress the teacher is also expected to evaluate their own program delivery in terms of meeting the curiculum and lesson objectives. Testing should consider all aspects of learning (as outlined by Benjamin Bloom, Appendi A) and should be diagnostic, formative (during instruction) and summative.

K - 12 Social Studies Curriculum

Unit Topics

Kindegarten: Exploring My World

Unit I   Myself and Others

Unit II   My School and Its Neighborhood

Unit III   Changes in Me and My World

Grade One: Human Needs and Human Interdependance

Unit I   What I Need to Grow: Physical Needs

Unit II   What I Need to Grow: Emotional and Social Needs

Unit III   Families and Human Needs

Grade Two: Changes

Unit I   When I Was Little, When I Grow Up

Unit II   Families Long Ago, Families Now

Unit III   Families in the Future

Grade Three: Communities Today

Unit I   Our Community

Unit II   A Manitoba Community

Unit III   A Canadian and/or World Community

Grade Four: Communities Around the World

Unit I   Locating People and Places Around the World

Unit II and III   World Communities

Grade Five: Life in Canada Today

Unit I   Canada Today: A Physical and Political Overview

Unit II   The Prairies

Unit III   The North

Unit IV   British Columbia

Unit V   Ontario

Unit VI   Quebec

Unit VII   Atlantic Canada

Grade Six: Life in Canada's Past

Unit I   The First Inhabitants

Unit II   The Coming of the French

Unit III   The Coming of the British

Unit IV   Life in the Late 19th Century Western Canada

Unit V   Life in Canada During the Twentieth Century

Grade Seven: Spaceship Earth

Unit I   The Planet Earth

Unit II   The Physical Environment and Its Resources

Grade Twelve: World Issues

Appendix C

Correspondance

Whitemouth School
January 14, 1986

re: Ethics Review Materials

Dear Dr. King,

 Enclosed you will find three sets of information required by the Ethics Review Committee for your forwarding. Along with the survey is a revision of the research methodology and correspondance required to acquire permission to use the MSSTA membership as a population for my sample. I have not enclosed a complete copy of my thesis proposal as this would require a considerable amount of photo copying and I am not certain if the information contained within is necessary for the approval of the survey by the Ethics Review Committee. If further information is required please let me know.

 Also enclosed with this package is some material for Dr. Sandals. This includes the latest revision of the methodology and the survey as well as an acceptance of his offer to assist with the printing and distribution costs of the survey if the offer is still open.

 Your assistance and perseverence is always greatly appreciated.

    Sincerely,

    Craig Mackenzie

Whitemouth School
Box 187
Whitemouth, Manitoba
R0E 2G0
January 14, 1986

Dr. L. Sandals
President
Manitoba Computer Assisted Learning Consortium

re: assistance by MCALC in conducting research into computer
applications for the social studies in Manitoba

Dear Dr. Sandals,

    Enclosed you will find a copy of the latest revision of
the research methodology of my thesis proposal including the
surveying instrument. Dr. King has presented this along with
other pertinent information to the Ethics Review Committee
and I am currently waiting for their decision. During our
meeting in early December you suggested that MCALC might be
willing to assist with my survey distribution costs. If this
offer continues to be open I am certainly willing to
gratefully accept it. Of course, I understand that MCALC
would like access to the raw data generated as a result of
the study.

    I look forward to hearing from you on this regard.
Thank you for your consideration in this matter.

                        Sincerely,

                        Craig Mackenzie

Craig Mackenzie
Box 1527
Beausejour, MB
R0E 2C0
December 6, 1985

Brian Osborne
President
Manitoba Social Science Teachers' Assoc.
Box 20, Group 320, RR3
East St. Paul
R3C 2E7

Dear Mr. Osborne,

I am currently conducting research on computer applications for the social studies curriculum in Manitoba Schools. This research is a part of my Master's program (A Role for Microcomputers in the Teaching of Social Studies in Manitoba Schools) with the Faculty of Education at the University of Manitoba. A component of my work involves the surveying of a representative sample of Manitoba Social Studies teachers on their perceptions and recommendations with respect to computer assisted learning for their social studies programs. I would like the permission of the Manitoba Social Science Teachers' Association to use your membership list for the selection of my sample. I can be contacted by mail at the inside address of this letter or by phone at 1-348-2595 (school) or 1-755-2919 (home). Your assistance on this matter would be greatly appreciated. I look forward to hearing from you.

Sincerely,

Craig Mackenzie

January 3, 1986

Dear Craig,

Enclosed is a MSSTA membership list requested for your research. Would it be possible to let us know your findings.

Yours Truly,

Brian Osborne

(author's note: This document has been recopied from the hand written original.)
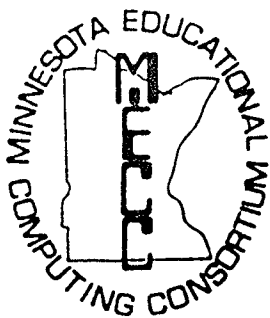
MINNESOTA EDUCATIONAL COMPUTING CONSORTIU

2520 Broadway Drive · Saint Paul, Minnesota 55113

January 18, 1983

Mr. Craig Mackenzie
Whitemouth School
Box 187
Whitemouth, Manitoba, Canada ROE 2GO

Dear Mr. Mackenzie:

Thank you for your inquiry regarding the MECC Computer Literacy Research Project. This project, supported by grants from the National Science Foundation, has been in progress since the fall of 1977. The project began with a survey of teachers concerning the nature and scope of computer instruction in Minnesota schools. A set of computer literacy objectives was then developed, and an instrument, the Computer Literacy Questionnaire, was designed to measure these objectives. This instrument was used in a field study comparing various forms of computer instruction, and also in a field experiment on computer mystique.

Revision of the Computer Literacy Questionnaire yielded the Minnesota Computer Literacy and Awareness Assessment. There are two forms of this instrument: Form 1, which has been administered to a statewide sample of eleventh-graders, and Form 8, which was given to a statewide eighth-grade sample. Current work is concerned with analyzing the statewide data collected.

Enclosed are several publications related to the project: Highlight Report, Project Precis for CLIM (Computer Literacy Instructional Modules), Annotated Bibligraphy on Computer Literacy, MECC Publications Price List, and a MECC brochure.

Should you have any further questions regarding the Computer Literacy Research Project, write or call Ron Anderson, Principal Investigator, at 612/373-0177. If you have specific questions about the project to develop instructional modules for computer literacy or any questions of a general nature, please feel free to contact me.

ETHICAL APPROVAL OF RESEARCH AND EXPERIMENTAL DEVELOPMENT PROJECTS

INVOLVING HUMAN SUBJECTS

This form is to be completed in the light of the Faculty of Education policy on ethical review. This policy requires that Committee members take into account the relevant standards of the discipline concerned as well as, where appropriate, the standards specified by certain external funding bodies.

Project identification

(to be filled in by investigator)

Investigator(s) CRAIG MACKENZIE

Title A Role for Microcomputers in the Teaching of Social Studies

in Manitoba Schools

This is to certify that the Review Committee has examined the research and experimental development project indicated above and concludes that the research meets the appropriate standards of ethical conduct in research with human subjects.

Date: 1/31/86   Signature of chair

Whitemouth School

March 3, 1986

Cheryl Propopanko

Educational Technology Program

Info Tech Resource Centre

Dear Cheryl,

While you were conducting your workshops at Lac du Bonnett Sr. School in late January you mentioned to me that you had done some work in the field of data base applications for the teaching of social studies. As you are aware, I have included this topic in my thesis and thus any information that you could provide me relating to your work would be very useful. If you could assist me in this regard, materials could be forwarded to the following address:

Craig Mackenzie

Box 1527

Beausejour, MB

ROE 0C0

Your assistance on this matter would be very greatly appreciated.
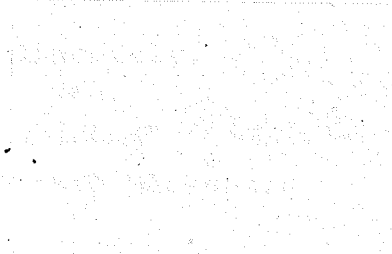
Box 1527
Beausejour, MB
February 1986

Dear colleague,

I am currently conducting research for the Faculty of
Education at the University of Manitoba in the field of
applications for the microcomputer in the teaching of
Social Studies in Manitoba schools. One of the purposes of
my study is to develop recommendations for computer
integration within social studies programs that are based on
the feedback I have received from social studies teachers
across the province. I have provided a survey with this
introduction that, if completed and returned by you, would
provide me with very useful information for making
recommendations. The executive of the Manitoba Social
Science Teacher's Association and the Manitoba Computer
Assisted Learning Consrtium have also demonstrated an
interest in the results of this study. It would greatly
assist me if you would take a few moments to complete this
survey and drop it in the mail within the next two weeks.
Your opinions are highly valued and appreciated. A stamped
and addressed envelope has been provided for this purpose.
Please return the survey along with your completed IBM form.
As the survey provides for your personal comments and
recommendations it would be useful for you to include your
name on the last page of the return. I would then be able to
follow up with you on your specific areas of concern or
recommendations.

Thank you for your consideration in this matter.

Sincerely,

Craig Mackenzie

Appendix D

Ethical Review Protocol

Faculty of Education
Ethical Review Protocol

Description of Proposed Project

1. What is the purpose of the study?

The stated purpose of this study is to determine whether teachers can and should use microcomputers (and related technologies) in the teaching of social studies in Manitoba schools.

In order to determine this, research is being proposed in two areas. The first involves a review of applications for microcomputers in education, with an emphasis on the social studies, that have evolved in recent years as a result of the high tech revolution that we have been experiencing. The second involves a survey of social studies teachers in Manitoba to determine their perceptions with respect to the use of microcomputers within their programs. The survey is to focus on three areas. These are: current level of microcomputer use, perceptions regarding appropriateness of microcomputers for the social studies and recommendations for the future regarding the further integration of Computer Assisted Learning into social studies programs.

2. Who are the participants to be? How will these participants be recruited for the study? Describe the mechanisms by which they will be allowed to give informed consent.

The target population of this study is the memebership of the Manitoba Social Science Teachers' Association. There are approximately 800 members within this association, which represents a good cross section of social studies educators within the province of Manitoba (as well as a large proportion). Surveys will be sent to a random sample of 200 with an even split of 100 rural and 100 urban participants to ensure statistically significant numbers for some correlations that are being sought. Permission has been granted by the executive of the MSSTA and a complete mailing list has been received from them. (The association is interested in the results of this study) A letter will accompany the survey, outlining the purpose of the study and although the information being gathered is not of a personal nature, anonimity will be provided for through the coding of the returns. Returns will be checked off by code number as they come in, eliminating the need to use the original address list. (see attached introductory letter)

3. Procedures to be employed in the study.

A Random Sample will be selected from the membership of MSSTA. Participants will be mailed an information package that includes a introductory letter outlining the purpose of the study and the significance of their participation. The survey will include instructions for completing the IBM form and an return addressed envelop provided for returning the completed form to me. The respondants name is not required on this form.

4. Reporting results of findings.

In correspondance and discussion with the president of the Manitoba social Science Teacher's Association it became apparent that the associaltion is interested in the results of my study. On the completion of this research I will communicate *by* providing a copy of the completed thesis as well as an offer to discuss the finding with members of the association.

Appendix E

Random Program Listing

```
1    REM   RANDOMIZING PAIRS OF INTEGERS
2    REM   BY CRAIG MACKENZIE
3    REM   JAN 1986
10   REM   INTEGER GENERATOR
11   REM   R1=RANGE OF FIRST INTEGER
12   REM   R2=RANGE OF SECOND INTEGER
20   HOME
25   VTAB 10: INPUT "HOW MANY PAIRS OF VALUES ARE TO BE GEN-   ERATED?";X
30   INPUT "WHAT IS THE RANGE OF THE FIRST VALUE? ";R1
35   INPUT "WHAT IS THE RANGE OF THE SECOND VALUE?";R2
40   DIM N1(X),N2(X)
45   FOR I = 1 TO X
50   LET N1(I) =  INT ( RND (1) * R1) + 1
60   LET N2(I) =  INT ( RND (1) * R2) + 1
70   NEXT I
80   REM   PRINT VALUES THAT HAVE BEEN RANDOMLY GENERATED
90   HOME
100  VTAB 10: PRINT "PREPARE THE PRINTER//"
110  PRINT : INPUT "PRESS RETURN WHEN READY.";Z$
120  HOME
125  PRINT  CHR$ (4),"PR#1"
127  PRINT "RANDOM NO. LIST OF "X" PAIRS: "
128  PRINT : PRINT
130  FOR K = 1 TO X
135  PRINT K". "N1(K)"/"N2(K),
140  NEXT K
150  PRINT  CHR$ (4);"PR#0"
200  HOME
210  PRINT "LIST COMPLETE//"
220  INPUT "PRINT SAME LIST AGAIN (Y/N) ";Z$
225  IF Z$ = "Y" THEN 120
230  INPUT "GENERATE NEW LIST (Y/N) ";Z$
235  IF Z$ = "Y" THEN 1
240  INPUT "END PROGRAM (AND DESTROY DATA)? ";Z$
245  IF Z$ = "Y" THEN 999
250  GOTO 1
999  END
```

]

Appendix F

Questionaire

<u>A Survey of Perceptions, Attitudes and Needs Regarding the
Use of Microcomputers Within the Manitoba Social Studies
Curriculum</u>

A: <u>Demographic Data</u>
Using a pencil, shade the space on the IBM computer form
that corresponds to your answer

1. Indicate the grade level range that best represents the
   social studies program(s) that you are responsibe for:

       1   2   3   4
   (K 1 2 3)   (4 5 6)   (7 8 9)   (10 11 12)

2. Indicate the student population of your school.

       1   2   3   4
   (0 - 199) (200 - 499) (500 - 999) (Over 1000)

3. Would you classify your school as urban or rural?

      1   2
   Urban   Rural

4. Indicate the approximate size of your school
   division/district on the basis of student population.

      1   2   3   4
   (0 - 1999) (2000 - 4999) (5000 - 9999) (Over 10000)

5. Does your school have a designated computer resource
   person (or equivalent)?

      1   2   3
   Yes   No   Uncertain

6. Does your school division employ a computer education
   consultant/coordinator (or equivalent)?

      1   2   3
   Yes   No   Uncertain

7. If your answer to No. 6 was yes how much equivalent
   teaching time is allocated for this function?

       1   2   3   4   5
   (Less 1/4) (1/4). (1/2) (3/4) (Full Time)

8. Indicate the Professional Qualification that best
   represents your circumstances?

      1   2   3   4   5
   Class 1 - 3   Class 4   Class 5   Class 6   lass 7

9. I have completed professional course(s) in Computer Assisted Learning.

    1   2
    Yes   No

10. I have attended workshops/inservices on Computer Assisted Learning.

    1   2
    Yes   No

11. I have completed professional course(s) in Computer Assisted Learning for the social studies.

    1   2
    Yes   No

12. Which computer hardware best represents the system(s) in use in your school?

              1   2
    (Radio Shack Model III/IV's)   (Apple II or equivalent)
              3   4
    (Commodore Pet Family)   (Commodore Vic 20/64)
              5
        (Other)

13. Our division/district is a member of MECC (Minnesota Educational Computing Consorium).

    1   2   3
    Yes   No   Uncertain

14. Our division/district is a member of MCALC (Manitoba Computer Assisted Learning Consortium).

    1   2   3
    Yes   No.   Uncertain

15. Indicate your teaching experience.

    1   2   3   4
    0 - 4 yrs.   5 - 9 yrs   10 - 19 yrs.   Over 20 yrs.

16. I have access to a catalogue/inventory of courseware that exists in my school/division.

    1   2   3
    Yes   No   Uncertain

17. Our division enters into bulk purchasing agreements with suppliers/publishers of computer courseware.

    1   2   3
    Yes   No   Uncertain

18. My school division has taken the initiative to provide a workshop(s) for teachers on the uses of computers in the classroom.

    1   2   3
    Yes   No   Uncertain

B. Perceptions and Needs Identification

Shade your choice for each statement in the corresponding space on the IBM form using the following scale.

Strongly Agree - SA, Agree - A, Undecided - U,
Disagree - DA, Strongly Disagree - SD

a. Present Perceptions and Status of CAL (Computer Assisted Learning)

19. Professional Journals and periodicals have provided me with valuable information of Computer Assited Learning for social studies.

    SA   A   U   DA   SD

20. The advent of microcomputers in our schools has provided Social Studies teachers with a powerful new tool that enhances their effectiveness as teachers.

    SA   A   U   DA   SD

21. With the development of effective, user friendly courseware, professional development is becoming less of an issue.

    SA   A   U   DA   SD

22. I am aware of the modes of Computer Assisted Instruction and view CAI as useful within the scope of the Social Studies Curricula for Manitoba.

    SA   A   U   DA   SD

23. The Department of Education has done a good job of providing Social Studies teachers with information on uses for the microcomputer in their programs.

    SA   A   U   DA   SD

24. Commercial Courseware is readily available in my school division.

    SA   A   U   DA   SD

25. Teachers in our school division have an adequate budget for purchasing courseware for their subject/grade level.

    SA   A   U   DA   SD

26. I currently find the computer useful for administrative functions such as recording student progress, test and assignment preparation, etc.

   SA   A   U   DA   SD

27. At the present time I find that computer courseware is too costly to justify using the computer in my program.

   SA   A   U   DA   SD

28. I am currently using the microcomputer for Computer Assisted Learning in my programs.

   Yes   No

Note: Answer the questions 29 to 36 only if you are using computer courseware to some extent in your programs. If you do not answer these questions procede to question 37 making sure that you enter your responses in the correct spaces of the IBM form.

29. Indicate the percentage of instructional time that best represents computer use by your students.

   1   2   3   4   5
   (0-19%)   (20-39%)   (40-59%)   (60-79%)   (80-100%)

30. Indicate the setting that best describes your situation.

1. I have access to a computer lab where students can work with selected courseware in small groups or as individuals.
2. I use the computer(s) as I would audiovisual equipment, signing out the machine from a resource center.
3. A computer(s) is permanently assigned to my classroom to use at my discretion.
4. other

31. Our school/division has established a computer software resource center from which I can borrow courseware for my programs on a sign out basis.

   1   2   3
   Yes   No   Uncertain

32. Computer courseware best compliments my program when used for drill and practise in a specified skill area.

   SA   A   U   DA   SD

33. Computer courseware best compliments my program when used for a tutorial on a specified topic or theme. (ie. a self contained unit of instruction including content, pre and post testing)

    SA   A   U   DA   SD

34. Computer courseware best compliments my program(s) when used for simulating real life situations that students can manipulate and experiment with to determine cause and effect relationships. (ie. economic principals, negotiations, international relations, environmental issues)

    SA   A   U   DA   SD

35. Computer courseware best compliments my program when used as a problem solving tool. (ie data base utilities used to create an inventory of information on a specified theme or in the use of a statistics package for analyzing data gathered by students in a research project)

    SA   A   U   DA   SD

36. I am using the computer for CAI to a degree but I find that there is not adequate courseware available for the Manitoba Social Studies Curricula.

    SA   A   U   DA   SD

b. Recommendations for Future Implementation

37. The Manitoba Department of Education and the Educational Technology Program should play a major role in the development of courseware for the Manitoba Social Studies Curricula.

    SA   A   U   DA   SD

38. If the appropriate software and hardware were available I would be enthusiastic about using the computer in my Social Studies classes.

    SA   A   U   DA   SD

39. The Manitoba Department of Education should initiate bulk software purchasing agreements with commercial software suppliers for school divisions.

    SA   A   U   DA   SD

40 - 42. Social Studies Courseware is required under each of the following instructional strategies:

40. Drill and Practise:

   SA   A   U   DA   SD

41. Tutorial:

   SA   A   U   DA   SD

42. Simulation:

   SA   A   U   DA   SD

43. Adequate training is available for interested teachers in the area of CAI through inservices, professional courses at the universities, and workshops provided by the ETP (Educational Technology Program).

   SA   A   U   DA   SD

44. I would be willing to take a course on the use of computers in the Social Studies if one were offerred in my area.

   1   2
   Yes   No

45. There is a need for consultants and coordinators to assist teachers (of social studies) with the intergration of computers into their classrooms.

   SA   A   U   DA   SD

46. Manitoba Social Studies teachers should have input into the development of courseware for thier curricula.

   SA   A   U   DA   SD

47. I would prefer to have a few computers permenantly located in my classroom than have access to a computer lab on a regular basis.

   SA   A   U   DA   SD

48. I would prefer to have access to a computer lab on a regular basis than to have a few (one or two) computers located in my classroom.

   SA   A   U   DA   SD

49. A catalogue or inventory of social studies relevent courseware should be made available to each school in Manitoba.
   SA   A   U   DA   SD

Please add any additional comments or recommedations regarding this survey or Computer Assisted Learning for the Social Studies in the space provided.