THE USE OF THE COMPUTER AS AN INSTRUCTIONAL AID IN TEACHING FRENCH AS A SECOND LANGUAGE IN NEWFOUNDLAND

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by

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DEDICATION

This thesis is dedicated to the memory
of the writer's grandfather
Mr. Stanley Lavers

Abstract

The second language teacher has always had access to a multitude of instructional aids such as texts, tapes, charts, cultural modules, listening centers, and language laboratories. The latest instructional tool to be introduced in the second language classroom is the microcomputer.

This researcher surveyed French teachers in Newfoundland to determine if and how the computer was being used as an instructional aid. The study also hoped to determine teachers' skill, knowledge and opinions of computers and their applications to language learning. The data for the study was collected by means of a questionnaire.

Responses were tabulated from both users and nonusers of the computer. The total sample involved 211 respondents. About six percent of those responding reported using the computer as an instructional aid. Amongst those who did not use the computer, the majority of teachers expressed strong interest in learning how to use the computer instructionally. All teachers reported a need for more information and evaluation with respect to available software. In general, the respondents reported a positive, enthusiastic attitude toward computer usage in teaching French.

Based on the information gathered from the survey on the needs of computer users and nonusers, a number of

recommendations were made that might be useful to curriculum planners, and to those who are responsible for teacher preparation in this province.

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Table of Contents

List of Tables

CHAPTER 1

RATIONALE FOR THE STUDY

Introduction

Second language researchers are constantly searching for the most effective ways to teach a second language. In the last thirty years the second language classroom has been a testing ground for many new approaches derived from different theories of how second languages are learned. The 'right' method, however, has remained elusive. Indeed, learning researchers have still not established how a first language is learned or why some learners are more successful than others at language learning.

The methodologies for teaching a second language have changed radically since the early sixties. The grammar-translation method of the fifties gave way to the audiolingual/audiovisual approaches rooted in the behavioral learning theory prevalent in the early sixties. This later fell into disfavour and a more cognitive approach was advocated. This method, too, was not entirely successful, and both approaches were not considered completely suited to language teaching and learning. More recently, a more eclectic approach has been adopted, and no one 'method' has since reigned supremely in the second language classroom.

Since the seventies, the notion of teaching for communicative competence has been the directing focus in second language teaching in Canada. Two major factors have influenced this thinking:

1. The success and growth of French immersion in Canada. The basis of French immersion is an example of indirect learning where the language is the medium, not the focus (Stern, 1983). Indirect learning is considered by some theorists to be a superior method of learning because it is 'deep' learning, that is, the learner is able to retain better what he has learned (Stevick, 1982).
2. The convincing evidence shown in recent studies that second language learning follows a similar pattern to first language learning (Dulay, Burt & Krashen, 1982). According to Krashen, there are two processes at work when language is learned, a learning process which concerns itself with conscious manipulation of the linguistic code, and an acquisition process which tries to interpret the language which is heard and seen, and to store those parts of the language system which the learner can account for (Cited in Higgins & Johns, 1984, p. 15).

No matter which theory of language learning is being expounded, the goals of teaching a second language have

not changed fundamentally. The emphasis on one or more skills may vary at different points in time or for different learners. The purpose, however, still remains the same: to teach the four basic skills; listening, speaking, reading, and writing in the target language; and to instill in the learner an empathy with other peoples, their beliefs and finally, an appreciation of their culture.

Instructional Aids and Second Language Teaching

The use of instructional aids in teaching a second language has always been a popular practice. A variety of required and optional teaching aids are at the disposal of the second language teacher. Generally, the required aids are texts, tapes, and charts and the optional aids are films, videos, cultural modules, charts, music, overhead transparencies, filmstrips, games, and in some schools, listening centers, and a language laboratory. Some aids are emphasized and used more than others, depending on the method or approach being followed.

The latest instructional tool to enter the language classroom is the microcomputer. For the past twenty years there has been a steady growth in the instructional use of computers in the schools and in the past five years microcomputers have been introduced in the schools at an increasing rate. Although the computer laboratory is

still generally looked upon as the domain of the computer science classes, this perspective is now beginning to change. The instructional potential of computers is being realized by educators, and computers are now being integrated into every aspect of education.

The Computer and Second Language Learning

The computer has applications for every discipline, including language learning. Zettersten (1985) states that "the microcomputer is the key instrument in the development of new technologies in language learning in the 1980s" (p. 171). This view may be an exaggerated one of the computer's importance in language learning. However, as microcomputers move into our school system, and become more easily available, language teachers will undoubtedly be experimenting more and more with their use. Although the use of the computer in language learning and teaching is still in the pioneer stage of development, the research findings are positive and promising.

The Second Language Teacher and Computer Use

With this increasing commitment to computers, there has also been a growing concern about their effective use in the schools. Are teachers adequately prepared for computer use? Do teachers utilize computers to the best

of their advantage? What about the needs of the teacher who does not use the computer but wishes to use it instructionally? It must be realized that not everyone knows what to do with the microcomputer. Many schools are currently purchasing computers simply because they know that microcomputers represent an important new technology..."the wave of the future". Teachers and administrators often have no clear idea of what they should do with their computers after they have acquired them.

In the United States, the American Council on the Teaching of Foreign Languages (ACTFL) and the Southern Conference on Language Teaching (SCOLT) Task Force on Research in Foreign Language Education, conducted a national survey in 1982 of foreign language teachers, coordinators and consultants. The purpose of the survey was to find out what their most pressing questions were regarding foreign learning and teaching (Cooper, 1985). Of the many issues raised by survey respondents, how to integrate instructional, aids such as videos and computers, into classroom routines was one of the top ten issues raised. Acoording to Zettersten (New Technology in Language Learning, 1985), it appears that even if second language teachers believe that technology is not of vital importance to them, they feel a strong need to be informed about the latest technology, to know how to use it

effectively if they choose to do so, and to be aware of the recent developments in language teaching. He states:

> Even if electronic equipment is more important to scientists than it is to language learners, there is a strong need to be aware of the best and most modern equipment and to have maximum knowledge of what is suitable and available. (Zettersten, 1985, p. 7)

It would appear that teachers are looking for direction and adequate training.

The Study

The focus of this study, however, is not an argument for the increased use of computers in second language learning, but rather an investigation of the extent to which the computer is used in teaching French in this province, and to assess the interest that may exist amongst teachers with respect to computer usage.

Therefore, a questionnaire was developed to survey French language teachers in the province. The instrument gathered pertinent information on the utilization of computers in the French classroom. In addition, it was intended to determine teachers' knowledge of computer usage in the teaching of French, their level of interest in training to use the computer instructionally, and in general, to determine their attitude toward using the computer as an instructional aid. From this information it was hoped to identify the following:

1. the needs of those teachers who are currently computer users,
2. the needs of those teachers who would like to use the computer in the teaching of French,
3. the needs of those teachers who would like to have more information on computer-assisted language learning (CALL) before they can make a decision about using CALL,
4. and finally, to determine how these needs might best be met.

It was hoped that the information gained from the survey would give a meaningful overview of what is presently happening in this province with respect to using the computer as an instructional tool in teaching French. The results of the survey could provide a basis for making appropriate recommendations to those who are responsible for French curriculum development and teacher training with regard to the most effective ways of encouraging the use of computers in French language learning.

CHAPTER 2

REVIEW OF RELATED LITERATURE

The review of the literature which follows will focus upon research that has been done on the use of computers in learning a second language. It will also discuss the advantages and some problems of using computers in the second language classroom.

Introduction

In reviewing the literature relevant to CALL, it quickly becomes very evident that language learning is a diverse and complex process. There are four linguistic skills, listening, speaking, reading, and writing, and an important cultural dimension to be considered. Some researchers focus their studies on one or more skills of the language component, for example, reading or writing, or the receptive skills, listening and reading. Again, some studies concentrate on language activities the purpose of which is to present cultural information, or to promote cultural awareness. For the purpose of this thesis, the writer chooses not to focus on studies concerning individual skills, but to view language learning as a whole experience in the nature of communicative language teaching.

Therefore, an attempt has been made to select literature that shows the ways the microcomputer can be

used as a tool or medium for natural, purposeful language use in the second language classroom. An attempt has been made to balance the view by selecting some studies that illustrate the problems that confront teachers considering the use of microcomputers in their classrooms.

In reviewing the literature it was also found that numerous studies and projects concerned language arts in general. For the purposes of this thesis, however, the review of literature has been limited to studies concerning applications of the computer to second language learning. It was also decided to focus on studies that used microcomputers in view of the fact that this is the type of computer the majority of schools are presently using.

It must be pointed out that, to date, there have been few studies done of an empirical nature. Therefore, there is no direct empirical verification to show how the specific software tools may result in improved learning. The studies reviewed, for the most part, were descriptive and qualitative in nature.

It was also noted that the majority of CALL projects are still being carried out in university settings, but the emphasis has shifted to using the microcomputer as the medium of instruction. The review also covered reports from innovative classroom teachers who attempted, on their own, to use the computer in their classes with interesting and very often successful results. This contribution from

teachers is invaluable because it is only with practical applications, and trial and error experimentation, that CALL will be improved and made more efficient and effective.

The area of artificial intelligence (AI) is also briefly discussed because it is an area that holds great promise and relevance for language learning. The research that is being done on understanding and processing natural language is exciting in its potential for language learning in the near future. Overall, the research findings reveal that the potential of computer applications in language learning is only just being realised by language researchers and, as yet, very few teachers. The full impact of what this means instructionally has yet to be determined.

Although the findings were informative, interesting, and often useful in their applications to language learning, the literature effectively pointed out the serious shortcomings of the present situation in education. Since the introduction of microcomputers to education in general, there has been a deplorable lack of focus given to the direction and the purposes of the use of computers. Programs were often implemented without much thought given to evaluation and the curriculum needs, or how computer instruction would be integrated into the existing curriculum. In addition, there has been a lack of adequate teacher training or in-servicing before

programs were implemented in the schools. Finally, since the introduction of computers in education there has been a problem in developing good quality courseware. Designing and developing good software is expensive and time consuming and still remains a serious problem. In addition, the early programs were most often developed by designers who were not educators and who had limited understanding of language and the language process. To a certain extent, this situation still exists, although it is slowly changing.

However, there is a growing awareness among educators that this situation has to change, and it is changing. According to the recent literature, developments in several interesting directions are taking place. The present trend is to develop software that is suitable, based on sound theory, and is able to be integrated into the existing curriculum to improve instruction. It is the consensus of most researchers that computer assisted instruction is most successful when it is integrated into the existing curriculum and is viewed as part of the total learning experience (Ahmad, Corbett, Rogers, and Sussex, 1985). Farrington (1986) states that there must be "proper integration with other learning activities" (p. 199) if CALL is to be effective. Integration may take many forms; it may be used as a mainstay of a course, or for backup, revision, reinforcement, extension, or a variety of other purposes.

Ng and Olivier (1987) also discuss the importance of integrating computerized materials into the language curriculum. They write:

> To play a truly active role in language learning, CALL materials must ultimately be designed for integration into the classroom and with curriculum. Materials should be integrated with other computerized or non-computerized materials, with class events and interactions, and with the overall language program. (p. 14)

It would seem, then, that if computers are to survive instructionally and become a permanent feature of the language curriculum, the goal must be a "computer enhanced curriculum" (Kloosterman, Ault & Harty, 1987).

However, CALL did not emerge ready-made from the direct application of the computer to teaching and learning; it has evolved over a period of time. It might perhaps be useful to provide a brief historical overview of CALL indicating some of the general trends to date.

Historical Overview

The application of computers to language learning is relatively new in education. Thornton, Swain and Oliver (1984) refer to the historical emergence of CALL as occurring in three phases. Its first phase was seeded by the language laboratory structure of the 1950s, which was so influential upon the development of the teaching machine and programmed learning.

Phase two was characterized by the development of large computer centres at universities, with sophisticated language programs such as the Stanford project, the Programmed Logic for Automated Teaching Operations System (PLATO) project at Illinois, the FRAND project at the University of Alberta, and the ELSE project at Dartmouth. Some of these projects were heavily funded by industry in the hope of making a commercially feasible computer assisted instructional (CAI) package (Holmes & Kidd, 1982). At the same time, similar work was being carried out in Britain, mainly by Oldford, concentrating on the Scientific Language Project at the University of Essex (Higgins & Johns, 1984).

Although the results were often positive and encouraging, there was never any serious consideration given to implementing these systems in the schools. The projects were basically experimental and used mainframe computers. The machinery was delicate, expensive, and costly to operate. The staff who operated the machinery were technicians, not educators. For those reasons, the projects never went past university piloting (Holmes & Kidd, 1982). However, it was during this era that the potential of the computer as a language teaching/learning tool was first noticed.

The third phase is only just upon us and is being ushered in by the long expected development of cheap microcomputers. Olsen (1980) predicted in the survey she

conducted in 1979-1980 that historically the microcomputer would be seen as the breakthrough in education. Higgins (1983) also states:

> During the 'seventies', increases in computer size and processing speed gradually brought down the price of on-line processing, but it was not until the Americans started marketing free-standing microcomputers at prices not much higher than those of colour television sets that CALL became feasible on a large scale. (p. 102)

Since the seventies, microcomputers have become an accepted and expected part of educational institutions. Courses in computer studies and basic programming are now taken for granted in the school curriculum. These courses, however, merely explain how computers operate. Educators soon realized that the computer had much more to offer in education. The educational value of the computer lies in its potential as a powerful instructional aid in a wide range of studies including languages.

The Computer as an Instructional Tool in Language Learning

It has already been established that the latest trend in teaching a second language is to teach for communicative competence. The learner must be engaged in meaningful, purposeful language use if the language activity is to be considered successful. The language learning act is also viewed as a social phenomenon, an

"interaction with the environment". If the language act is to be convincing to the learner, it must offer an effective or believable language environment. What, then, makes the computer a valuable instructional tool in teaching languages? Is the computer capable of being interactive with the learner? Is it capable of providing a language rich environment? Is it capable of being communicative? These last three questions provided the focus for the review of the studies and projects to determine if CALL researchers consider the computer to be a communicative language tool.

It might clarify the discussion somewhat if the functions that the computer can assume in language learning are first identified and discussed in view of traditional teaching practices and communicative language use. Because the computer is an educational medium, it is easier to discuss it in terms of the functions it can perform, or the roles it can assume.

Computer as "Tutee"

Taylor (1980) characterizes the language teaching functions of the computer as tutor, tool and "tutee". The "tutee" function refers to the learner being required to teach the computer to do something; otherwise, the computer would be incapable of doing anything. The learner sets tasks for the computer to solve. In order for this technique to be effective in language learning,

it is generally felt that the teacher or learner must have some programming skills, or understanding of what is involved. Essentially, it is the user who creates the language activity. Presently, the tutee applications in language learning are seldom used because few teachers and learners have the necessary skills to programme or to initiate the language activity. However, this function is the one that holds much promise for the future, according to AI research.

Computer as "Tutor"

Taylor (1980) defines tutor as the computer assuming the role of teacher or instructor to teach or drill the learner. Traditionally, the tutorial role has been the only one the computer has assumed in language learning. It was found that vocabulary, spelling and grammar constituted the major linguistic aspects addressed, mainly handled in two modes: reading and writing (Ng & Olivier, 1987). The software usually consisted of drill and practice of discrete grammatical points and vocabulary learning, very similar in nature to the old language laboratory drills which were founded on the principles of programmed learning (Sanders & Kenner, 1983). Historically, this association with structural grammar drills and practice has been closely aligned to behavioristic and cognitive styles of teaching which are no longer in vogue (Wyatt, 1985). In principle, the

learner is supposed to be in control of the learning activity, but the software designed and used rarely allowed the learner such control (Canale et al., 1985). Unfortunately, in the eyes of many teachers, this traditional tutorial role is all the computer is capable of doing (Wyatt, 1985).

Computer as Tool

Taylor (1980) defines the function of the computer as tool when the student is in control of the learning activity. It is the student control feature that makes the computer especially attractive and valuable as a language learning tool. However, it is essential that the learner understand the subservient role of the computer, that it is she\he who retains control of the tool and uses it in the manner which she\he finds the most satisfactory. Marty (1983) cautions the student to view the computer system as an ally, ready to help him\her learn as efficiently as he\she can, not as a slave driver. Higgins (1986), in discussing the computer's role in language learning, calls it a "valued pedagogue" because the student should use it when she\he deems it necessary or if he\she wants to. Again, Johns (1981) refers to it as a valuable learning resource because "... it is observant, more sensitive, more consistent, more available and more unwearingly patient than any conceivable one-to-one human teacher" (p. 4).

As a tool, the computer is able to give students highly individualized instruction characterized by individual feedback and immediate correction and remediation, if necessary or wanted. According to researchers such as Marty (1981), Ahmad et al. (1985), Holmes and Kidd (1982), these features can help students learn more efficiently. Marty (1981) states that although the computer materials cannot turn unmotivated learners into enthusiastic learners, "it can give students something we have always wanted: a high degree of individualization and feedback during the practice exercises, something which the language teacher cannot normally give in class" (p. 90). Ahmad et al. (1985) adds that one of the attractive interactive features is that the computer is capable of offering an explanation and remedial help when needed. This branching capacity means that the computer can be made sensitive to the learner's pace and pattern of response, and can adjust the linguistic materials to the needs of the individual (Ahmad et al., 1985). There is considerable agreement among researchers that the tool function is ideally suited to language learning primarily because it is intended not to teach or drill but to facilitate the learner's task, with the learner remaining in control. These features: learner control, personalized instruction, individual feedback, immediate correction and remediation make the computer highly attractive to a learner who is afraid to speak in

class, or is afraid of looking stupid, or of making an error in front of peers.

Computer and the Affective Barrier

Mydlarski (1985) refers to the computer as being able to lower the "affective barrier". She states that the sense of control the student enjoys, enhances the student's self-image and builds confidence. The student has the exclusive attention of the computer which is non-personal, has unlimited patience, and is non-judgmental. There is no low attention period as the student waits for his or her turn to come round in class. Farrington (1986) reported positive feelings of students and teachers in his LITTRE project. Olsen (1980) reported marked improvement in student attitudes in her survey of CALL projects stating that students are fascinated with computers and are enthusiastic about the immediate and individualized attention their work receives. Baume (1985) also reported that three times as many students developed favourable attitudes to CALL during the course of his experiment as unfavourable. It appears that learning with a computer is rated quite highly by students, especially by those students who are intimidated by large groups or are afraid of making errors in front of their peers.

Computers and Communicative Language Learning

Since the computer in its tool function is able to be responsive to the individual student and is capable of assessing responses, it is considered to be interactive. This interactive element is a strong component of communicative theory. The computer, therefore, is considered able to be communicative in language learning. This position is strongly supported by Holmes and Kidd (1982), Higgins (1986), Johns (1981), Wyatt (1983), Mydlarski (1985) and Ahmad et al. (1985). However, is the ability to conduct a two-way learning session with the student enough to make the computer a truly communicative tool?

Phillips (1985), Mydlarski (1985), Higgins (1986), Johns (1981), and Ahmad et al. (1985) are some second language researchers who argue forcefully that there are other elements in communicative language teaching besides interactive learning that can be realized through the use of a computer. To teach a language using the communicative approach is essentially to create a learning activity that successfully engages the learner in using the target language with purpose and meaning. Ideally, it should simulate as closely as possible experiential language learning. Therefore, if the language activity offered by CALL is to be considered successful, it must not only be interactive, it must be able to offer the learner a convincing language learning environment.

According to Phillips (1986), one powerful justification for the use of computers is that they are capable of creating learning environments with which the learner can interact. Higgins (1986) refers to this environment as a "simulation of reality" and Wyatt (1983) labels it "a micro world". The goal of software that claims to be communicative is to provide a series of carefully planned language experiences so that the student is transported into an environment that attempts to simulate a real language experience.

These language activities are often the result of the learner being stimulated by the computer to use communicative strategies that maximize meaningful use of the target language. Some examples of successful strategies that have been identified and employed in communicative language use are:

a. simulations
    i) role-playing
    ii) task-performing
b. games and puzzles

How efficiently is the computer able to assume these roles?

Simulations

Higgins and Johns (1984) define a simulation as a representation of a process during which the user can intervene and change some of the variables which affect

the process. A simulation can represent a scientific experiment, a commercial management exercise, a problem-solving task, a road race or a role-play. It enables the user to manipulate a given situation or set of data in order to test the outcome of a decision; this activity can encompass changing the variables in a real-life or imaginary situation, or performing manipulations on words or text to test the outcome (Thrush & Thrush, 1986). With regard to computer simulations, Higgins (1982) states:

> The chunky graphics are no substitute for looking at the real world. But the tasks one can carry out on them are quite real enough to engross learners. (p. 109)

He clearly sees the computer in a communicative role in language learning when he refers to its function as "a task-setter, an opponent in a game, an environment, a conversation partner, a stooge or a tool" (p. 4).

Ahmad et al. (1985) also states convincingly that the computer is an excellent medium for simulations because it can be used to generate language, including words and word forms, phrases and sentences. In essence, this is something that cannot be done by any other technique such as television, video and the language laboratory. In simulated activities, the computer can allow students to experience realities not otherwise accessible in the classroom by offering the possibility of interacting with a hypothetical reality (Phillips, 1986). Thus CALL offers the possibility of structuring the students' environment so that the opportunities for learning are unlimited

because this environment can continuously be modified by the students.

Research has shown for some time now the feasibility of truly interactive, computer programs. The 'Eliza' experiments of Joseph Weizenbaun of the Massachusetts Institute of Technology have successfully demonstrated that the computer is capable of conducting simulated conversation (Underwood, 1982). Since then some excellent simulation programs have been developed that allow the user to engage in authentic language use. Although it is not the purpose of this study to evaluate CALL programs to determine if the language activities are communicative, it might be useful to give a few examples of simulation programs that are considered appropriate for language learning.

Schneider and Bennion (1983) at the McKay Institute of Brigham Young University have developed two simulation programs using a videodisc under microcomputer control. In each program, a new environment is created, inviting the learner to assume an identity, and role-play. One program, Montevidisco, concerns a simulated visit to a town in Mexico, in which the student "pays a visit", and interacts with its inhabitants. The other environment is a city in northern United States. Both of these programs demonstrate the exciting possibilities of language learning when video technology is used in conjunction with microcomputers.

In Higgins' Grammarland, the learner is invited to explore a restricted world where the exploration is harnessed to a learning purpose. Simulation programs such as these come close to actual role-playing and are considered by most researchers to be successful, exciting applications of the computer in language learning. These examples are now considered to be state-of-the-art models for designers.

Games and Puzzles

Experience has shown that learning with a computer is rated highly by students (Olsen, 1980; Baume, 1985; Mydlarski, 1985; Farrington, 1986). It is often associated with games which involve problem-solving skills. The student who, when playing games or solving problems, is using the target language as the medium of the learning activity, experiences a high degree of involvement. Therefore, the computer can be a powerful motivational force because most students expect it to be enjoyable.

Johns of the University of Birmingham has adopted a game format, for many of his programs following what he calls a 'generative approach' to CALL which entails that no tasks are written in advance. What the computer program consists of is a series of instructions allowing the machine to create such tasks on the basis of its moment-by-moment interaction with the student (Johns,

1983). Johns' programs are not games; they simply use a problem-solving approach upon which games are based, emphasizing the active role of the learner as an intelligent guesser.

Some excellent language games that have produced challenging, meaningful language activities which concentrate on content rather than on form have been developed by designers at Concordia University (Sanders & Kenner, 1983). These activities include games such as "scrambled countries" where countries' names are scrambled and the students are invited to unscramble them. The central purpose of this activity, of course, is not to teach students how to spell countries' names but rather to involve them for 30 minutes in a meaningful, challenging activity in the target language. It focuses not on the form but the content of the language (Sanders & Kenner, 1983, p. 36). Mydlarski (1985) also urges designers to develop language activities that are problem solving in nature with a game-like presentation.

Conclusion

It would seem then that the computer is potentially a valuable instructional tool in communicative language teaching. However, Phillips (1986) cautions that the use of computers in language teaching has to be justified and rational, and that it is essential that the need to use the computer be established in relation to the appropriate

theory of language learning. According to Ng and Olivier (1987), to work in the absence of theory is to work in the absence of "guiding principles" (p. 1). Unfortunately, teachers too often appear awed and overwhelmed by computer demonstrations, being impressed by the form, lights, and graphics, rather than by the instructional merits of the program. Sanders and Kenner (1983) state: "It is because most people involved in language teaching and learning know little about computers that they are impressed by the form of the offering (on a computer) rather than the content (what it is actually doing with language)" (p. 34).

Phillips (1986) also urges language teachers to use two questions to justify using the computer in lieu of other instructional aids:

1. What can computer based techniques do that cannot be done by any other technique?
2. Is it desirable or necessary to do so?

Obviously, nothing is gained if the computer assumes roles that can either be done just as effectively by the teacher, or by an existing aid.

Traditionally, the roles the computer has assumed in language learning have not been of a communicative nature, but have been more tutorial in scope. However, it is evident from reviewing the literature of recent research that the computer is capable of much more than drill and practice, and vocabulary review. It is capable of

providing the learner with a meaningful language experience that is communicative in nature. Phillips (1986) states:

> Thus we arrive at a vision of language education which can only be brought about by the appropriate use of computers, in which the learner acquires a foreign language naturally as a consequence of exploring the learning environment created for him by the new technology. (p. 5)

Limitations of the Microcomputer in the Language Classroom

There are several serious problems to be overcome in implementing the use of microcomputers in the classroom. Even though it is now generally accepted that the computer is capable of giving the student an exciting, interactive language experience, the computer is still incapable of natural speech understanding and production. CALL has progressed considerably since the first drill and practice programs, and the future implications of AI are exciting for the language teachers. However, the lack of speech is still a serious limitation in implementing CALL in the schools. Farrington (1986) realistically states, "Linguistic proficiency is not like an academic subject. Language is a specifically human activity which is most

efficiently acquired by interactions with other human beings". Ahmad et al. (1985) adds: "... the outlook for using computers in meaningful or serious dialogue is limited. CALL's place in the language classroom is not that of a spontaneous dialogue partner in either the written or spoken medium" (p. 54). In addition, there are several other factors which may limit the use of the computer in the classroom. These include:

Cost

Since CALL is still considered in schools as a supplement to enrich learning and not a substitute or replacement method for learning, the costs of hardware and software must be considered as add-ons.

Incompatibility of Systems and Software

Some material designed for one system will not operate on a different system. This incompatibility results in problems when buying software, causing great concern in terms of cost and inconvenience to the school and to the learner.

Accessibility to Computers

Though the computer is considerably reduced in price, some schools, especially elementary and primary schools, do not have access to enough computers. This problem is all too common in schools in Newfoundland.

Lack of Trained Teachers

It is probably true to say that a majority of language teachers are still unaware of, or are unfamiliar with, the concepts of CALL (Wyatt, 1983).

Negative Attitudes

There are also attitudes and prejudices that prevail that hinder development of computer application in language teaching. To many language teachers and administrators, language is a humanities subject to which a mechanical device such as the computer can make no contribution. In addition, there is also the misconception that computers will replace teachers. Many of these negative statements and comments are based on impressions, uninformed opinions, or even prejudice, and constitute a serious barrier to a proper understanding of the potential contribution of computers to language learning (Olsen, 1980; Ahmad et al., 1985). According to a study carried out by the Ontario Institute for Studies in Education (reported in Dialogue, 1985), the presence of computers has greatly increased the number of personal contacts between students and teachers. Computer assisted teachers reported that they found it easier to devote more time and attention to their students.

Software

The single most important problem that hinders computer applications in language teaching is the availability of suitable software.

Software

> It is the software that gives form and purpose to a programmable machine, much as the sculptor shapes clay. (Alan Kay, 1984)

In reviewing the literature, it is immediately evident that there is widespread dissatisfaction with the courseware that is available for language teaching. Much of it is structure-bound and is based on a 1960s perception of how a language is learned. Canale et al. (1985) summarize the problems with software in this way:

> The most limiting feature of the majority of language arts software we have examined is its generally narrow and often superficial view of what constitutes language, language learning, and the role of the microcomputer in educational contexts. (p. 7)

Higgins (1986) adds:

> Too much of the first generation of materials seemed to assume that the students were ignorant idiots, that teachers could not be trusted, and that the materials writer had to take full responsibility for every aspect of the learning process. (p. 147)

As previously discussed, if computer applications are to be successfully implemented in language learning, the software must be suitable. Knowing that the computer has the potential to be a powerful instructional tool is

irrelevant and useless unless the software is available to generate the desired language activity. The importance of suitable software, therefore, cannot be overestimated. Sanders and Kenner (1983) caution:

> It is our concern that unless people in CAI move away from their present obsession with hardware and begin to focus more critically and imaginatively on the courseware offered, CAI may suffer a fate similar to that of the language lab. (p. 34)

The implication is that the language laboratory, in most cases, never realized its full potential instructionally because of a lack of suitable courseware. Of course, there were teachers who had exceptional success in using the language laboratory, due to their own initiative, imagination and talent, in spite of the courseware.

Research reports from language educators indicate that the computer is able to offer the language learner a meaningful language experience. It follows, then, that the courseware should reflect this.

Software development is a serious responsibility and should be the concern of both developers and educators. Phillips (1986) urges teachers to be involved, to exploit CALL creatively by achieving the critical balance between the learner's wants and the learner's needs. The software must be evaluated by educators in the classroom to see if it is suitable and responds to their needs. It is essential that developers receive this feedback.

In reviewing the literature, there is almost total agreement among the researchers that good language software should include the following characteristics:

1. The software must be based on sound language theory. This trait indicates, of course, that the designer must have a knowledge of language and the language process, and be able to connect it to the appropriate language theory.
2. The computer has the ability to be interactive. This element should be exploited as in simulated conversation. The ideal interactive program is one that involves the student in a way that forces him/her to use the language as a medium, to solve problems, or to respond or to assume a role in a simulation. Ideally, it should create a 'model of reality' which is sufficiently rich to be realistic and flexible enough to accommodate individual learning styles.
3. There is still a need for tutorial type programs. Ng and Olivier (1986) state that "the place of drills and exercises in CALL materials is not to be slighted" provided the exercises are meaningful and relevant (Mydlarski, 1985). These exercises can be

used to reinforce specific linguistic structures. The CLEF series created by Holmes and Kidd (1982) at the University of Western Ontario are excellent examples of useful tutorial drills. Another example would be the adventure games and activities used at Université du Québec at Chicoutimi which have been designed to reinforce specific linguistic structures (Mydlarski, 1985).

4. If the activity is to be interesting, stimulating and challenging, it should have a game-like presentation. That is not to say that the program must produce sound, lights, graphics, and smart tricks. Rather, it should assume that the learner is intelligent, and is not easily impressed.

5. The software should present a warm, encouraging and non-threatening image to the learner. It appears that students learn better, and develop a better self-image, if the computer is "user-friendly".

In selecting and purchasing software, an important point to be considered is that software is being developed with different users in mind. The kind of software purchased often depends on the skill and knowledge of the

teacher. Those teachers who have programming skills and who wish to have some control over the programme may purchase courseware, such as authoring or template, that allows them some programming control. However, most language teachers will have few programming skills, and will not understand how programs work technically; nor do they need to. The majority of teachers will purchase ready-to-use commercially developed programs or courseware.

The Role of Software Designers

Farrington (1986) argues that we must be more selective about who designs language software. He states emphatically that the right people, educators, not computer addicts must develop linguistically useful materials and promote the general dissemination of information technology for language learning. He further adds that the solution is to be found in the interchange of ideas between those who design materials and the teachers who put them into practice.

The Role of the Teacher

The role of the teacher is important in the development and exploitation of useful and suitable materials in two ways: implementor and user-critic. To understand the central role of the teacher, the computer in the language classroom must be viewed in perspective.

The computer is a tool, of itself incapable of action. It will perform, with remarkable speed, exactly the instructions given to it by a human user. Its role in education is that of a medium (Ahmad et al., 1985). Ahmad further states:

> Far from threatening the teacher's position, it is totally dependent on the teacher in many ways. For example, it is unable to create educational materials without a human to direct it. All the linguistic material and instructions for its presentations must be specified by the teacher. It is the teacher then, who can make the computer assume various roles. (p. 2)

The decisions are made by the teacher, and put into the computer by the teacher. The computer may be able to satisfy a substantial range of learning styles, but it is not a complete substitute for a teacher. It is the teacher who decides what degree of control the computer will have. According to Johns and Higgins (1984), it is the teacher who, in the final analysis, must decide if, when, and how computers will be part of the instructional process.

In addition, the role of the teacher as evaluator cannot be underestimated. According to Raschio and Lange (1984), "if current courseware is unacceptable or unavailable, it is due, at least in part, to a lack of communication between educators and the computer/courseware industry" (p. 23). Teachers must make known their needs as well as those of their students to the developers and manufacturers.

Need for Software Evaluation Instrument

If teachers are to use CALL effectively, they need to be trained to select suitable software for their language classrooms. Selecting good programs is difficult, requiring both skill and expertise. Many language teachers who are unfamiliar with CALL find it difficult to evaluate lessons because they report that they are often unsure what criteria they should use. What is needed is the opportunity for teachers to develop their own critical skills so that they can go beyond the superficial technical features of the program to consider whether the underlying pedagogy is sound and suited to their needs. There is a lack of good educational software. Therefore, it is imperative that inexperienced teachers develop the skills necessary to distinguish good educational packages from the bad.

Evaluation guidelines on their own are not the solution as it takes time and expertise to use an evaluation checklist well. However, a software evaluation guide for selecting and purchasing software might prove to be a useful and valuable instrument to the language teacher if it is introduced with training.

Conclusion

There is general agreement in the literature that most language software is unsuitable for language teaching and learning. In general, software development has lagged

behind hardware development. However, there is enough good software available and being used to know that it is possible to develop communicative language courseware. A concerted effort is now being made to catch up. Presently, there is an awareness that courseware developers must look at the needs of learners and educators. Teachers are also becoming more aware of the important contribution that they can make as critical evaluators. The programs need to be tested as rigorously as any instructional package. Therefore, designers need this valuable feedback from users if the programs are to respond to the needs of the users.

Although software development is still very much in the infancy stage, better quality and more suitable language software is beginning to emerge. As Self (1985) states, computers can enhance learning only if an effort is made to produce software that is appropriate.

The Future Trends of CALL

It would be remiss in any discussion of computers and their applications to language learning if the role of AI were not mentioned. There has already been sufficient experimentation by teachers to know that computers can be powerful instructional tools. However, in view of the literature it is also quite valid to state that the surface of the potential of computer applications to

language learning has only been barely touched. The computer has the potential to be exciting in its applications to language learning.

AI, the field of study that attempts to make the computer more intelligent, continues to exploit ways that the computer can be made more useful and interactive in language learning. If the computer activity involves the learner to a large degree, then it is considered interactive, thus making the language experience meaningful and most likely successful.

There are other new technologies that have immediate relevance to language learning. In the audio-visual domain (synthetic speech, digital compressed speech, video discs) may provide us with random, immediate access equipment which is either lacking or is too expensive today (Marty, 1981; Schneider and Bennion, 1983; Jones, 1984). Holmes and Kidd (1982) also state that the videodisc is perhaps the most interesting development and may combine audio-visual and oral capabilities. Wyatt (1983) adds that when linked to the basic CAI system, videodiscs have a host of important language teaching applications.

Natural language processing (NLP) is one of the prime concerns of AI presently and this area is relevant to language learning. Cook and Fass (1986) discuss how developments in NLP by computers can enrich existing forms of language practice or lead to the devising of new ones.

Presently the computer is capable of providing a very useful tool in language teaching and learning. The aim of AI research is to go beyond this, and to provide a richer learning environment for the language learner.

Conclusion

There is ample evidence to suggest that computers can be used to make language instruction more effective and efficient. The computer is able to assume some important language learning functions. It is capable of giving meaningful drill and practice to improve linguistic competence. More importantly, it is able to offer the learner an interactive language experience, individually or in group, with valuable feedback, error analysis, remediation and precise monitoring, if needed. It is also clear that the learning experience can be made more exciting, satisfying and rewarding for the learner and teacher if the software is suitable and the teacher who uses it is trained to use the material appropriately and imaginatively.

Most language learning will continue to take place in the classroom: the computer may be interactive, but it is not yet a social machine. The computer will not take over language teaching, nor is it the panacea that will cure all problems that are encountered in teaching a second language.

Research studies on the effectiveness of CALL compared to other instructional aids are scanty. Some of the results have been equivocal or inconclusive: either the number of students has been too small, or the results themselves have not shown any appreciable difference with students using CALL. In general, however, students react positively to CALL and to its most characteristic advantages of personalized, self-access, self-pacing and distance learning. They also value highly the computer's ability to interact, and to deliver high-quality feedback instantly. Nevertheless, what the profession really needs at this time are comprehensive performance studies which show whether or not CALL programs actually are as effective as other language learning aids. Like any other educational program, CALL programs need to be continuously evaluated.

Since it has been demonstrated that the computer has a role to play in second language learning, it was decided to investigate to what extent teachers in Newfoundland and Labrador were aware of, or interested in, the applications of the computer in the French classroom. Consequently, a survey was conducted of teachers in the province to determine their perceptions. The ensuing questionnaire is discussed in the following chapter.

CHAPTER 3

PURPOSE OF THE STUDY

The present study was conducted to determine to what extent French teachers in this province were using the computer as an instructional tool in the second language classroom. The survey was also designed to gather information about the knowledge, skill and attitudes of second language teachers towards computers and their instructional use. Specifically, the following questions provided the focus of the study:

1. How many French teachers in this province are using the computer as an instructional aid?
2. How well-informed are French teachers about computers and their applications to second language learning?
3. Do French teachers view the role of the computer in second language learning positively or negatively? Do they perceive it as being a useful, or necessary, tool?
4. What are the most urgent needs of teachers who presently use the computer instructionally?
5. Do nonusers show any interest or desire to learn how to use the computer as an instructional aid?
6. What are the needs of the nonuser in encouraging use of the computer for second language learning?

The following research questions were formulated to direct the analyses of the data:

1. Are there significant differences between users and nonusers in terms of background and demographic variables such as age, sex, community size and education?
2. Are there significant differences between users and nonusers in terms of the schools in which they teach, the school size, the grades taught, the subjects taught and the number of computers in the school?
3. Is there a significant relationship between the use of required and\or optional aids and the level of interest shown by teachers to obtain training to use the computer for instructional purposes?
4. Are there significant differences between users and nonusers in terms of knowledge of computers, and computer applications to language learning?
5. Are there significant differences between users and nonusers in the level of interest they show in obtaining training or in-service on how to use the computer instructionally?
6. Is there a significant difference in attitude toward CALL between users and nonusers?

Need for the Study

To date no study had been done in Newfoundland to find out if French teachers were using computers as instructional tools in teaching French. In order to plan effectively, it is necessary to evaluate the present situation. If policies are to be developed that will effectively integrate computers into the curriculum, the needs of teachers must be identified, and their areas of concerns made known. Only then can teacher in-servicing programs and strategies that respond to teacher concerns be planned and implemented. It was felt that the use of a survey questionnaire would be the most effective way of establishing a reasonably accurate picture of the present teacher situation with respect to use of knowledge of and interest in CALL.

Design of the Study

Survey Instrument

In designing the study, the researcher made the following assumptions:

1. Very few French teachers in Newfoundland use the computer instructionally.
2. Most French teachers have little knowledge of computers and their applications to second language learning.

3. Most teachers are not aware of the potential of the computer as a language learning tool.
4. Some teachers have high interest in learning about and training to use the computer instructionally.
5. The computer user, or the potential computer user, is most likely a teacher who is a strong user of optional instructional aids.
6. The computer user, or the potential computer user, is most likely a French teacher in the senior high school grades.

The chief method of investigation was a nine page, 26-item teacher questionnaire. The first part of questionnaire was designed to gain information about the teacher and the school, including demographic information, professional information with respect to education and subjects and grades taught, as well as information pertaining to the school environment. The second part of the questionnaire was designed to probe teachers with respect to their knowledge of computers, attitudes towards computers usage in language teaching, and their interest in training to use the computer instructionally.

The questionnaire consisted of 26 items, organized in four sections in the following manner:

Section A (items 1 - 11) Teacher Characteristics

Background Information

Section B (items 1 - 5)	Computers in the School Profile of the School
Section C (items 1 - 3)	Teacher Attitudes Towards Computer Usage Use of Instructional Aids Beliefs and Opinions of Teachers Concerning Computers and their Applications to Language Learning.
Section C (items 4 - 8)	Computer Users Only Needs of Computer Users
Section C (items 9 - 10)	Teacher Preparation Teachers' Level of Interest in In-Service and Training to Use the Computer in Language Teaching
Open Item	Teachers were invited to give comments, suggestions, opinions, or recommendations on the use of computer assisted language learning in the schools.

A copy of the questionnaire may be found in Appendix A.

During the development of the questionnaire, it was subjected to analyses from several sources: the writer's thesis supervisor, Joan Netten, Dr. George Koski, Department of Learning Resources, and Byron Hermann, a visiting instructor from OISE. It was then administered to several graduate students, and French teachers. This critical analysis resulted in many revisions being made. As a courtesy to francophone teachers, and as an attempt to assure validity and to help eliminate misinterpretation of questions, it was decided to print the questionnaire in both English and French.

The Sample

The survey involved a sample of 211 French teachers who attended the Modern Language Council Annual Conference and General Meeting, held at St. John's, Newfoundland, October 2, 3 and 4th, 1986. The participants were full-time core or immersion teachers at the primary, elementary and high school level.

This selection procedure was chosen because it rendered a broad and representative sample of the French teacher population of this province. As a rule, the conference is always well attended by French teachers from every part of the province, and from all school levels. 1986 was the 20th anniversary of the Modern Language

Council, and a full weekend schedule of workshop sessions were planned. The keynote speaker was Dr. H. H. (David) Stern, a well known second language researcher, and a large registration was expected. The organizers were not disappointed. It was the largest group of French teachers ever to attend the Conference.

It was also felt that a large return of questionnaires would be guaranteed if the instrument were presented at a gathering of French teachers who had come to listen to new ideas and trends in second language teaching. A conference atmosphere is often more conducive to reflection than the regular classroom situation. It permits teachers to come in contact with theories, ideas and methods which might prompt them to think about their profession, and ways to improve instruction or ways to make existing methods more effective.

The questionnaire was included in the registration folder which was given to approximately 400 people who registered. Not all of the people who registered, however, were French teachers. Some people were invited to conduct workshop sessions, and there were personnel from the Department of Education, French coordinators from school boards, and university teaching staff and students present. Thus the total number of questionnaires returned at the Conference, or returned by mail before February 1987, was 211. The response rate based on the adjusted

sample of registered delegates who were regular classroom French teachers was 70 percent.

Data Analysis

Data from the questionnaires were tabulated and analyzed statistically in two ways: some by percentages, and some by levels of significance. Cross tabulations and T-Tests were made to discover if significant differences did exist in the areas of use of optional aids, computer usage, computer knowledge, and interest in training to use the computer as an instructional tool in the second language classroom.

By these methods, a profile of both the computer user and the nonuser were developed. The nonuser group was divided into two categories - the nonuser with little interest to learn about CALL, and the nonuser with considérable interest to learn about CALL. A description of the characteristics of the three groups of teachers was developed.

Significance of the Study

The study was conducted to gain an overall view of what is happening in this province in the second language classroom and the use of computers as a language learning tool. It was hoped to:

1. determine the number of teachers who are already using the computer instructionally in the teaching of French;
2. determine the number of teachers who would like to use the computer in the second language classroom but do not yet do so.
3. determine the number of teachers who appear to have no interest in using the computer in the second language classroom;
4. determine teachers' level of knowledge of computers and their application to second language teaching;
5. identify the needs of each of the groups of teachers; and,
6. determine the level of interest of each group in obtaining training on how to use the computer instructionally.

It was anticipated that the data gathered from the survey and the subsequent analysis could offer valuable insight to those who are responsible for decision making about the most effective use of computers in the curriculum. The results of the study could also be of particular interest to those who are responsible for planning teacher preparation programs and in-service training workshops.

Responses to the questionnaire to confirm this point of view. Many needs and concerns of teachers were

identified. The questionnaire also successfully elicited teachers' opinions about and levels of knowledge with respect to the computer and its applications to second language learning. This information has assisted in making recommendations for the design of in-service activities for teachers with respect to the use of CALL in the French classrooms of this province. These results and recommendations are discussed more fully in the succeeding chapters.

Definition of Terms

For the purpose of this study, the following terms have been defined to clarify any concepts used in the discussion.

Second Language - refers to any language being taught or learned that is not the learner's mother tongue. In particular for this study, the reference is mainly to the teaching of French.

Core French - the Basic French program of instruction in which students study the various aspects of French language during a regularly scheduled time slot as is done in other subject areas.

(Report of the Advisory Committee on French Programs 1986 - p. 77).

Immersion French - a program designed for English speaking students in which French is the language of instruction in the classroom for all or some of the subject areas and as much as possible the means of communication in the school environment. (Report of the Advisory Committee on French Programs 1986 - p. 79).

CALL - acronym for computer assisted language learning.

AI - acronym for artificial intelligence which is the part of computer science concerned with designing intelligent computer systems, that is, systems that exhibit the characteristics associated with intelligence in human behaviour - understanding language, learning, reasoning, solving problems and so on (Feigenbaum & Baro, 1982).

CAI - acronym for computer assisted instruction.

NLP - acronym for natural language processing - an area of artificial intelligence that attempts to

understand and process natural language.

Software - generic term to include all types of programs, e.g. courseware, lessonware, and utilities.

Hardware - the name given to computers and the various pieces of equipment attached to them.

Limitations of the Study

Although the survey data can be regarded as an important addition to knowledge about French teachers in Newfoundland, and their use of computers in second language teaching, the data are limited in several respects:

1. Survey data were gathered about a subject characterized by great change and rapid growth. Therefore, it is to be expected that reported numbers will be quickly dated.
2. Due to the limitations of the survey method itself, subjects were not probed deeply or were not probed at all. For example, teachers were asked whether they had been trained to use a computer but not about the nature of the training; if they use the computer as an instructional aid, but not any details

concerning where they obtained this training, or if it was encouraged by the administration.

3. Data is limited to the province of Newfoundland and Labrador. However, some information may be of interest to those in other provinces contemplating the introduction of CALL and preparing in-service sessions for their teachers.

CHAPTER 4

ANALYSIS OF THE DATA

The purpose of this chapter is to summarize results from the study, and to present the findings. Since one of the basic purposes of the survey was to determine how many French teachers actually used the computer instructionally, it was felt that the results would best be presented in terms of computer users and nonusers. Using the information and results gathered from the study, a detailed profile was then developed of each group of teachers designated as: a) Users and b) Nonusers. The nonuser group was further subdivided in two groups on the basis of interest in obtaining, or pursuing, training to use CALL. Consequently, a fairly complete description of the population surveyed has been determined.

The following results are based on statistical analysis, using the SPSSx program on the Vax\VMS system, and an extensive review of the literature.

This chapter is divided into three sections:

1) profile and attitudes of the computer
2) profile and attitudes of the non-computer user;
3) differences amongst the non-computer users:
   a) profile and attitudes of the non-computer user with high interest in learning about computers and their applications to teaching French; and

b) profile and attitudes of the non-computer user with low interest in learning about computers and their applications to teaching French.

Profile of Users

Sample

As indicated in Table 1, only 11 teachers, approximately six percent of the total sample of 211 respondents, used the computer as an instructional aid in teaching French in Newfoundland.

Table 1

User/Nonuser Distribution in Sample

	No	Percent
Users	11	5.6
Nonusers	192	90.4
Missing cases	8	4
Total	211	100

Characteristics

The users were six males and five females, and ten were under forty. Four reported having undergraduate degrees, and seven reported having graduate degrees. Only six, however, stated that French was their university major. One reported a mathematics major, and another a

social studies major. The other three majors were unlisted.

Over half of the users taught French less than half of their instructional time. The group was almost equally-divided between core and immersion teachers: Core - 6 (54.5%) and Immersion - 5 (45.5%). This division, however, is not representative of the total sample, as indicated in Table 2, which consisted of 82% Core teachers and 18% Immersion teachers.

Table 2

Core/Immersion Distribution in Total Sample

	Total Sample		User Sample	
	#	%	#	%
Core	174	82	6	54.5
Immersion	37	18	5	45.5
Total	211	100	11	100

There were no apparent rural\urban differences in the group. The distribution of users in smaller and larger centers was representative of the total sample. However, the majority of computer users taught below grade nine, mainly at the elementary level. The total number of years teaching French was generally less than the total number of years teaching, as is shown in Table 3.

Table 3

Comparison of Total Years Teaching Experience and Total Years Teaching French

	No. of Years Teaching Experience	No. of Years Teaching French
<5	5	4
5-9	3	6
10-20	2	1
Over 20	1	-
Total	11	11

Although it is not possible to generalize from such a relatively small sample, it is apparent in this survey that the user is not the typical high school French teacher who has a French major, a strong background in French, and who teaches French more than 75 percent of his/her instructional time.

These data seem to indicate that the user is a teacher who may have decided to teach French at a later date in his/her career, or a teacher who is primarily a mathematics, science or social studies major, with a minor in French, teaching French less than half of his/her instructional time.

It is also apparent that a larger proportion of males than females use the computer, given the total proportion of males to females in the sample, and that the computer

user tends to be one of the younger members of the teaching force. It is also apparent that there are more computer users among the French immersion teachers than among the Core French teachers.

Use of Instructional Aids

The teachers in this group were very strong users of all instructional aids. They all used the required aids (texts and charts) most of the time. The optional aids, cultural modules, overhead transparencies, films, teacher-made visuals, and music, were also used extensively by all of the teachers for some or most of the time. However, the language laboratory and the listening centres were not used very extensively by these teachers. This finding is most likely due to the fact that these facilities were not readily available in the school, as such equipment is not generally available in Newfoundland schools.

Opinions of Users Concerning Their Needs

The users expressed strong dissatisfaction about the amount and quality of software that is available. They felt very strongly about the need for more suitable software for language teaching. The users also felt that computers would be utilized more if there were more computers available in the school. All teachers in this group felt very strongly about the need for teacher training. It was also felt that if computers were to be

used as instructional aids in language teaching, then teachers need in-service training, and they need access to information on how to apply the computer to language learning in the most effective ways.

Teachers felt that their needs should be addressed by those who are responsible for teacher preparation and retraining. They also indicated emphatically that the Department of Education should play a stronger role in giving direction and leadership to teacher in-service with respect to the use of computers. The training or retraining should basically concern two issues: how to use the computer effectively in the classroom; and how to evaluate effectively software before purchasing.

Teachers' Knowledge of Computers

Item #9 of the questionnaire asked teachers to rate the effects of the computer in the classroom. This section gave an approximate picture of users' knowledge and perceptions of computers and their applications to second language learning. Although these teachers used the computer as an instructional aid, their knowledge of computers was somewhat limited. Only two teachers in this group reported owning home computers; six teachers had been trained to use computers; five teachers used the computer as an administrative aid; and five teachers had taken courses concerning computers in education. This information does not indicate a high level of knowledge

for users. Only half have been trained to use a computer, indicating that the others have obviously been self-taught.

Effects of Using Computers in Teaching French

Teachers who were computer users uniformly agreed that computers would provide remedial help for slower students and enrichment for high ability students. To a somewhat lesser extent, they felt that computers would help individualize instruction, provide drill and practice for all students, improve reading comprehension, raise the interest level of all students, improve writing skills and provide activities to develop communicative competence.

This group of teachers were generally unsure as to whether the computer would enable teachers to cover more content in their teaching, and whether the computer could assist teachers in evaluating their pupils more efficiently.

For the most part they disagreed with the notions that computers would reduce the student-teacher contact, lessen the teacher's workload and necessitate longer French periods.

This data suggests that, while computer users have some information about the applications of computers to second language learning, there are still areas where their knowledge is somewhat limited. In particular, they have little understanding of how computers can assist in

the evaluation of pupils. However, for the most part, they seem to possess a fairly realistic understanding of what effect the use of computers will have in the classroom with respect to organization and use of class time. They also appear to be aware of the use of the computer for communicative oriented language learning activities, but could perhaps benefit from more information in this area. They seem most sure of the usefulness of computers in assisting with remedial or enrichment activities.

Teachers' Interest in Training and In-Service

Interest in training to use the computer as an instructional aid in the second language classroom, as one would expect in the user group, was quite high. Teachers were asked to indicate their level of interest, using a rating scale, in taking a course, attending an in-service, finding out more information about CALL, and talking to someone who had access to information about computers and their applications to language learning. The teachers in this group reported high interest in all categories, suggesting a strong motivation to learn.

Profile of the Non-Computer User

Sample

The nonusers represented the majority of the sample, with 192 who responded that they did not use the computer as an instructional aid (See Table 1). This represented ninety percent of the surveyed population.

Characteristics

In this group there were almost twice as many females as males, as indicated in Table 4. However, this is not greatly different from the proportion of males to females in the total sample.

Table 4

Male/Female Distribution of Nonusers

Males	Females	Missing	Total Sample
68	123	1	192

Over 66 percent of this group fell between the ages of 25-39, indicating a relatively young group of teachers. The nonusers were also a well qualified group professionally. Only two in the sample did not have degrees. The majority of the group (72 percent) reported a university French major. Fifty percent of the group reported having a post-graduate degree.

As indicated in Table 5, about 40 percent of the teachers taught French over 75 percent of their instructional time. However, about the same number of teachers taught French less than 50 percent of the time.

Table 5

Percentage of Instructional Time Spent in the Teaching of French

Instructional Time	No	Percent
>75	75	39
50-75	39	20
<50	78	40

As indicated in Table 6, most of the teachers in this group did not report having extensive French teaching experience. Sixty-one percent reported having less than ten years experience teaching French, although, only forty-eight percent reported less than ten years teaching experience. In general, the data indicated that a fairly large number of teachers had not taught French for all of their teaching career.

Table 6

Comparison of Total Years Teaching Experience and Total Years Teaching French

	Teaching French		Teaching Experience	
	#	%	#	%
<5	67	35	56	29
5-9	50	26	37	19
10-19	57	30	74	39
Over 20	15	8	25	13
Missing Cases	3			
Total	192		192	

There were no strong rural/urban differences apparent in this group. Forty-three percent lived in communities with populations larger than 5000, and fifty-seven percent lived in communities with populations less than 5000.

All school levels, primary, elementary and high, were well represented with a slightly heavier concentration of teachers below the junior high level. Sixty-five percent of the sample taught below level 2. These data are reported in Tables 7 and 8.

Table 7

Number of Non-Computer Users by Grade Level

School Level	No	Percent
Elementary	59	31
Elementary-Primary	29	15
High	57	30
Junior High	7	4
K - Grade 9	10	5
All Grades	10	5
Elementary-High	1	.5
Total	173	90.5

Table 8

Number of Nonusers in Sample Below Level Two

Below Junior High Level	No	Percent
Primary	19	10
Elementary	59	31
Elementary-Primary	29	15
Junior High	7	4
K - Grade 9	10	5
Total	124	65

These data appear to give a profile of the teacher in the province who is generally involved in the teaching of French. The average teacher appears to be female, relatively young, with good professional qualifications. However, many of these teachers have not taught French for all of their teaching careers. About two-thirds of the French teachers teach below Level 2 and well over one-third teach French for less than half of their instructional time (40%). Both rural and urban teachers of French were represented, with about two-fifths of the teachers representing communities of over 5,000 people and three-fifths from communities of less than 5,000.

Use of Instructional Aids

The majority of nonusers were strong users of required aids. However, the optional aids were not used as extensively, especially the listening centre and the language laboratory. Of course, these two aids are available in few schools in Newfoundland, and therefore cannot be considered as true options. Many teachers used videos, films, transparencies and music to a considerable extent.

Variables such as the number of years teaching experience did not appear to affect significantly the use of instructional aids.

Most teachers (72%) reported that their schools owned computers, or that they had access to computers in other schools.

Opinions of Nonusers Concerning Their Needs

It was recognized at the outset that many teachers in this group might not have firm opinions about the computer and its applications to language learning, and that a significant portion of these teachers might have little knowledge or experience on which to base judgments. Consequently, the fairly high "unsure" response rate in this section was not unexpected and might be attributed to an unwillingness, at least for some teachers, to state opinions on an area about which they felt poorly informed.

As reported in Table 9, the majority (89%) of this group felt that teachers needed training in the use of computers and the time and opportunity to avail of it. They also felt that teachers needed more information about CALL. To a lesser extent, they felt that the Department of Education should take more responsibility for distributing and evaluating software. Teachers in this group were less sure about the need for suitable software, or for more computers in the schools.

Table 9

Opinions of Nonusers on Implementing Computers in Second Language Classes

	Agree	Not Sure	Disagree
1. There were more computers in the school.	54*	32	14
2. Teachers had the time and opportunity to get training.	89	7	4
3. Teachers had more access to information about possibilities of CALL.	89	8	2
4. There were suitable software.	53	42	2
5. The Department of Education loaned software.	63	32	3
6. The Department of Education recommended suitable software.	67	28	2

*Numbers given are percentages.

Teachers' Knowledge of Computers

As expected, the knowledge level of this group concerning computers was somewhat limited. This lack of information is reinforced in the open item at the end of the questionnaire where many teacher were invited to comment freely on any issue raised by the questionnaire. As a group, the majority of teachers reported that they

were not well enough informed to state opinions about any aspect of computers queried. However, it is interesting to note that this group of teachers does have some knowledge of computers. Twenty-four percent of the teachers in this group reported owning home computers; fourteen percent used the computer as an administrative aid; thirty percent reported that they had received some computer training and twenty-four percent had taken courses on computers in education.

Effects of Using Computers in Teaching French

In examining these opinions, it is possible to see how teachers perceive the role of the computer and its impact on second language teaching. It is evident from the high response rate in the unsure category that the majority of teachers are not well informed about CALL.

As indicated in Table 10, the majority of teachers agreed that computers would provide remedial help for slower students, and enrichment for high ability students, provide ihdividualized instruction, and would increase the motivation and interest of students.

To a lesser extent, the teachers felt that computers would provide drill and practice for all students, improve writing and reading skills and develop communicative competence.

They were generally unsure as to whether the computer would provide better evaluation, lessen teacher workload,

Table 10

Nonusers' Expectations/Beliefs Concerning the Effects of Using Computers in Teaching French

	Agree	Not Sure	Disagree
	Percent of Responses		
1. Drill and practice for all students.	69	21	9
2. Remedial drill for low ability students.	79	16	3
3. Enrichment for high ability students.	88	8	3
4. Increase motivation and interest.	84	14	1
5. Provide better evaluation.	41	53	5
6. Provide individualized instruction.	78	17	3
7. Lessen teacher workload.	18	44	37
8. Enable teachers to cover more content.	30	53	15
9. Develop communicative competence.	52	34	12
10. Reduce student-teacher contact.	29	33	38
11. Necessitate longer French periods.	24	46	29
12. Improve writing skills.	50	43	6
13. Improve reading skills.	67	28	4

enable the teacher to cover more content and necessitate longer French periods.

Most teachers disagreed that the computer would reduce student-teacher contact.

These data indicate that this group of teachers need more information about computers and their applications to language learning, as they appear to perceive the computer primarily as an aid in helping to individualize instruction for the better, or the poorer, student. They are also very unsure of what types of organizational changes would be necessitated by the use of computers. They do, however, seem to be aware that the use of computers would not reduce student/teacher contact.

Teachers' Interest in Training and Inservice

In the nonuser group, there is a sharp division between interest levels. There are clearly two groups of nonusers. One group (78% of the sample) shows a high level of interest in applying the computer to language learning, and is highly motivated to seek training.

The second group, which makes up 20 percent of the sample of nonusers, shows very little interest in acquiring computer training. This group appear to be poorly motivated to use the computer as an instructional aid.

For the purpose of analysis and discussion, the nonusers have been divided in two groups on the basis of interest in obtaining computer training: (1) Nonusers-high interest and (2) Nonusers - low interest. A comparison was made between the two groups to see if the factors that contribute to high and low interest in computer training could be isolated and identified. If an in-service training or information handbook were to be developed for such a group, it would be helpful to identify the variables that increase or decrease motivation. Who are the teachers who are interested by the prospect of using computers, and which ones show very little interest?

Differences Between Nonusers

As already discussed, for the purposes of analysis and discussion, the nonusers were divided in two groups, nonusers - high interest and nonusers - low interest, on the basis of their level of interest in taking courses in computer training, courses on the use of computers in education, and their motivation in doing in-service and reading the literature. Comparisons were made between the two groups and responses were analyzed to determine whether there were differences between the high and low interest groups. A T-Test was used to analyze data to see if there was a difference in attitude between the two groups. As was expected, a significant difference was

found in attitude. The teachers in the high interest group showed a more positive, favorable attitude toward CALL than the teachers in the low interest group.

In the nonuser category, about three-quarters of the teachers showed an interest in learning about the applications of the computer to the learning of French. This group is the one referred to as the nonusers with high interest. Only about twenty percent of teachers surveyed did not appear to be interested in gaining such knowledge, as is indicated in Table 11. This group is the one referred to as the nonusers with low interest.

Table 11

Percentages of Nonusers With High Interest and Low Interest

	No	Percent
Users	11	6
Nonusers-high interest	149	75
Nonusers-low interest	38	19
Missing cases	13	
Total	211	

Characteristics

There were no significant differences in the ages of the two groups.

There were no apparent rural/urban differences between the two groups. The majority of teachers who showed both high interest and low interest lived in rural communities. These numbers are representative of the total sample.

The same ratio of core and immersion teachers were in both groups, reflecting the ratio of the total sample.

There were no significant differences noted between the groups in terms of school size. The majority of both groups had computers in their schools, and owned about the same number of computers.

As indicated in Table 12, about forty percent of the males, and sixty percent of the females indicated an interest in using the computer in the classroom, which is similar to the proportions in the total sample. There appeared to be no major differences between the sexes, although there is a slight tendency for somewhat more females to be represented in the nonuser - low interest category (70%).

The majority of French teachers in both groups reported a university French major.

In the high interest group, there were fewer postgraduate degrees than undergraduate degrees. This trend is reversed in the low interest group where there were slightly more post graduate degrees than undergraduate degrees.

Table 12

Male/Female Distribution in Nonuser Group

	Male		Female	
	No.	% of Group	No.	% of Group
Users	6	(55%)	5	(45%)
Nonusers-High Interest	56	(38%)	93	(62%)
Nonusers-Low Interest	11	(30%)	26	(70%)
Total	73		124	

There were no differences noted between the two groups in their total years teaching experience. However, as indicated in Table 13, in the total years teaching French, there were more teachers with less than five years teaching experience in the high interest group than in the low interest group. It would seem that the teachers with less experience teaching French are more likely to have high interest in using the computer to teach French.

Differences were also noted between the two groups concerning the amount of instructional time spent teaching French, as indicated in Table 14. In the high interest group, there were proportionally more teachers who taught French less than 50 percent of the time than in the low interest group where the greater number of teachers taught French more than 75 percent of the time. This finding

Table 13

Nonusers-High Interest/Nonusers Low-Interest
Comparison of Years Teaching Experience/
Years Teaching French

	Total Years Teaching French			
	<5	5-9	10-20	over 20
Nonusers High-Interest	53	36	45	12
Nonusers Low-Interest	11	13	11	3

	Total Years Teaching Experience			
	<5	5-9	10-20	over 20
Nonusers High Interest	44	26	57	22
Nonusers Low-Interest	10	10	15	3

Table 14

Instructional Time Teaching French

	>75%	50-75%	<50%
Nonusers-High Interest	57	30	62
Nonusers-Low Interest	16	9	13

seems to indicate that the teacher who teaches French, and other subjects, is more likely to be receptive to different approaches to teaching. The teacher in this category may be aware of other instructional aids that are not often used in the teaching of French. The exposure to teaching other subjects may stimulate interest in other aids such as computerized instruction. It might also indicate that some teachers who are full time French teachers and are, therefore, responsible for public examinations and oral testing perceive the instructional process somewhat differently.

At the school level, there were some fairly strong differences between the two groups. Most high interest teachers taught in the elementary schools and most low interest teachers taught at the high school level. Again, it is possible that the elementary school teacher, who most often teaches subjects other than French, is therefore exposed to different instructional aids, and teaching strategies, whereas the high school French teacher, who is most likely a full time French teacher, may find that he/she teaches in the same way, is less receptive to new approaches, and may even consider them unnecessary.

Use of Instructional Aids

In the use of required instructional aids (texts, tapes and charts), there were no significant differences

observed between the high and low interest groups. As indicated in Table 15, both groups were strong users of required aids.

Table 15

Use of Instructional Aids

Required Aids	Users	Nonusers Hi-Int	Nonusers Low-Int
1. Texts	100%	94%	100%
2. Tapes	82%	87%	95%
3. Charts	91%	89%	95%
Optional Aids			
4. Cultural Modules	100%	64%	83%
5. Transparencies	100%	68%	81%
6. Films	100%	75%	89%
7. Teacher-Made Charts	100%	91%	97%
8. Listening Centre	64%	23%	29%
9. Language Laboratory	64%	9%	17%
10. Music	100%	94%	95%

However, in their use of the optional instructional aids, some significant differences were noted between the

two groups. More teachers in the low interest group used optional aids, such as cultural modules, transparencies and films, than teachers in the high interest group. Teachers in both groups were strong users of musical aids, such as tapes and records, and teacher-made visuals and charts. Neither group used extensively the listening centre and the language laboratory. However, most schools do not have such facilities for teachers to use.

Overall, it appears that both groups were strong users of required aids, but more low interest teachers tended to use optional aids than high interest teachers. This finding was not anticipated.

In conducting the study, an assumption was made by the researcher that those teachers who used the computer instructionally, and those teachers who showed strong interest in training to use the computer in their language classes, would be strong users of other instructional aids in the classroom. However, the findings did not support that belief. Reference is made to possible reasons for this finding in the conclusion to this section.

Nonusers' Opinions on Needs

Teachers were asked to state their opinions on what conditions would have to be met in order to have computers used instructionally in the school. This information is summarized in Table 16.

Table 16

Nonusers' Opinions on Needs

			Agree	Not Sure	Disagree
1.	More computers are needed.	HIGH	53%	34%	13%
		LOW	58%	21%	21%
2.	Teachers need time and opportunity to get information.	HIGH	94%	5%	1%
		LOW	70%	16%	14%
3.	Teachers need access to information about CALL.	HIGH	94%	5%	1%
		LOW	72%	20%	8%
4.	More suitable software is needed.	HIGH	60%	40%	
		LOW	35%	57%	8%
5.	The Department of Education should loan software.	HIGH	70%	28%	2%
		LOW	41%	51%	8%
6.	The Department of Education recommend software.	HIGH	74%	26%	
		LOW	50%	42%	8%

Some differences in opinion were noted between the high and low interest groups concerning the needs that would have to be met if computers were to be implemented in the second language classroom. There was a slightly stronger agreement in the low interest group that more computers were needed in the schools. In the high interest group, there was a stronger perceived need for training. Both groups agreed, with a slightly higher percentage of agreement in the high interest group, that there was a strong need for more suitable software and that the Department of Education should play a more

decisive role in organizing in-service training for computer use in the province.

There was a high percentage of responses in the "not sure" category for both high and low interest groups, but it was consistently higher for the low interest group. As has already been mentioned, teachers in the nonuser group may not have firm opinions due to a lack of knowledge. However, the higher percentage of "not sure" answers in the low interest group may also be due to a lack of interest.

Teachers Knowledge of Computers

Teachers' knowledge of the computer, as measured by the questionnaire was extremely low in both groups, but was significantly lower in the low interest category. As a group, the majority of teachers reported that they were not well informed about any aspect of computers queried. This data is reported in Table 17.

Table 17

Nonusers - High Interest/Low Interest
Knowledge of Computers

Knowledge	High Interest	Low Interest
1. Owns home computer.	16%	8%
2. Uses computer as an administrative aid.	9%	5%
3. Has completed computer training.	22%	8%
4. Has taken courses on computers in education.	16%	8%

Effects of Using Computers in Teaching French

Generally, it was the high interest group of teachers who showed a higher percentage of agreement where the computer is perceived to be a positive teaching aid. In general, the high interest group portrayed a very positive and optimistic image of what they perceived the computer to be capable of doing instructionally.

There was, generally, a higher percentage of disagreement and unsure responses in the low interest group indicating a lack of information, and to a certain extent, indifference.

This information is summarized in Table 18.

By careful examination of these opinions, it is possible to see how teachers perceive the role of the computer and its impact on language teaching. It appears

Table 18

Nonusers' Expectations of the Computer's Applications to Language Learning

			Agree	Not Sure	Disagree
1.	Drill and practice for all.	HIGH	71%	20%	9%
		LOW	68%	24%	8%
2.	Remedial drills for low ability students.	HIGH	82%	13%	4%
		LOW	76%	19%	6%
3.	Enrichment for high ability students.	HIGH	92%	7%	1%
		LOW	78%	14%	8%
4.	To raise interest and motivation.	HIGH	88%	12%	
		LOW	73%	22%	5%
5.	To improve evaluation.	HIGH	46%	49%	5%
		LOW	24%	73%	3%
6.	Individualized instruction.	HIGH	84%	15%	1%
		LOW	68%	24%	8%
7.	Lessen teachers' workload.	HIGH	20%	46%	34%
		LOW	16%	62%	22%
8.	Cover more content.	HIGH	35%	52%	13%
		LOW	16%	62%	22%
9.	Develop communicative competence.	HIGH	57%	33%	10%
		LOW	37%	39%	24%
10.	Reduce student-teacher contact.	HIGH	29%	32%	39%
		LOW	32%	37%	32%
11.	Necessitate longer French periods.	HIGH	26%	46%	28%
		LOW	18%	53%	29%
12.	Improve writing skills.	HIGH	52%	42%	5%
		LOW	37%	53%	10%
13.	Improve reading skills.	HIGH	67%	29%	4%
		LOW	68%	26%	5%

that most teachers feel positively about the computer and its implications for second language learning. However, even those in the high interest category do not appear to be aware of the potential of the computer as a communication tool in teaching French.

Open-Ended Final Question

In the final item, the respondents were invited to articulate any comments or suggestions regarding computer assisted language learning, or concerning the questionnaire itself. These comments are summarized and reported in Appendix B. A coding system was developed for the open-ended item, using four general classifications: 1) No comment. (If no comments were written.) 2) Unable to comment. (If the respondents reported in some manner that they were unable to respond because of a lack of knowledge.) 3) Positive comment. (If the respondent perceived CALL as being a positive instructional aid.) 4) Negative comment. (If the respondent expressed negative reactions to CALL.)

Overall, the open item supported the other findings in the survey. The majority of teachers reported that they did not feel well enough informed to comment on computer applications in the second language classroom. However, their comments also indicated that they would like to know more about CALL, and would welcome information and training. It was generally perceived to

be a positive instructional aid for second language learning.

Summary of Analysis of the Data

The data indicated that only eleven of the teachers surveyed, or approximately 6% of French teachers in the Province, presently use the computer. The majority of French teachers in the Province (90%) are nonusers. This finding was anticipated.

Profile of the Teachers

The French teacher who uses the computer appears to be relatively young, probably male, teaching below the grade nine level, and generally teaching subjects other than French for more than half of his/her instructional time. The computer user tends to be trained in a subject area other than French, or is a teacher in the immersion classroom, and a teacher who has taught other subject areas before beginning to teach French. These teachers were also strong users of all instructional aids, both required and optional.

The noncomputer users were divided into two categories, those who indicated a high interest in learning about using computers in the teaching of French, and those who did not.

With respect to these two groups, there were no apparent differences with respect to age, community size, or school size. However, there was a slightly larger proportion of females represented in the nonuser - low interest group. The majority of teachers in both groups reported having a university major in French. However, there were more teachers with post-graduate degrees in the nonuser - low interest group.

There were no major differences between the two groups with respect to total years teaching experience, but there were more teachers with less than five years experience teaching French in the high interest group.

Differences were also noted between the two groups concerning the amount of instructional time teaching French. The high interest group was primarily composed of teachers who spent less than fifty percent of their instructional time teaching French, while the low interest group contained mostly those who taught French more than seventy-five percent of their time. In addition, most teachers in the low interest group were high school teachers of French.

Several of the findings reported were not anticipated. It was felt that it would be the high school teacher of French, and the teacher who used a variety of instructional aids who would show interest in using the computer. However, it appears from the survey that the teacher of French at the high school level, who is, and

has been, primarily a French teacher, and who already uses many optional and required aids is the teacher who shows little interest in learning about computer applications to second language learning.

Use of Instructional Aids

Computer users were generally strong users of all instructional aids, both required and optional, in the teaching of the French programs.

Non-computer users were strong users of the required aids, but not as strong users of the optional aids. This finding was as expected. However, when the teachers in the nonuser category were analyzed according to whether or not they demonstrated interest in learning to use the computer in the teaching of French, the high interest group showed low use of optional aids, while the low interest group showed higher use of optional aids. This finding was not expected. On reflection, it is interesting to note that the low interest group of teachers was comprised mostly of high school teachers of French, with considerable experience teaching French. It may be that these teachers have well-developed strategies for teaching French where they make use of many of the optional aids suggested for language learning. It may be because of their extensive use of a variety of audio and visual aids, as well as cultural material, that they are

less inclined to consider the use of the computer in the second language classroom.

Needs of the Teachers as Perceived by Each Group

The needs of the teachers as perceived by the computer users emphasized software. As might be expected, these teachers would like to have more information on what software is available, and how to choose appropriate software.

They also suggest that it would be helpful to have more computers in the schools.

Needs of the teachers as perceived by the nonuser group focus much more on more fundamental questions. These teachers want training in computer use, as well as more information about CALL. They are not yet ready to assimilate knowledge about evaluating software, although they indicate some need for information in this regard. They are also less sure about whether more computers are needed in the schools in order to make CALL a reality.

The needs expressed by the high-interest and low-interest groups within the nonuser category are basically similar. The major difference between the two groups is the considerably higher proportion of "unsure" responses in the low-interest group, perhaps indicating lack of interest.

Knowledge of Computers

With respect to the user group, only half had been trained to use the computer, and less than half had taken courses concerning computers in education.

With regard to the nonuser group, about one-third had received some computer training. In addition, about one-quarter of the teachers had taken courses on computers in education, and about the same number owned a home computer.

When this data is divided into high and low interest groups, the percentages in each category are considerably lower for the low interest group, as would be expected.

Knowledge of CALL

The computer users have considerable knowledge of how computers may assist in learning French. They are aware of the tutorial functions of the computer, but are somewhat less aware of its communicative uses. They are not aware of how to use the computer for purposes of evaluation.

Teachers who are non-computer users are most aware of the uses which may be made of the computer in individualization of instruction, enrichment and remedial functions. They are not, however, particularly knowledgeable about the communicative functions of the computer in teaching course content. In addition, they are also unaware of the role the computer can play in

evaluation. These teachers are also somewhat unsure of what effects the use of the computer will have on classroom instruction. They do not know what effects the use of the computer would have on teacher work-load, length of French periods, or amount of content covered.

When these responses are analyzed for high and low group differences, the low interest group is much less sure in all categories, and generally shows a tendency to be much more negative in their perceptions of what effects using the computer would have on learning French.

The open item at the survey generally indicated that teachers perceived the computer as a possible useful instructional aid in the teaching of French.

Conclusions

In general, the greatest need among the teachers surveyed in both groups was for computer knowledge and experience. This, need of course, implies the opportunity to obtain training and practice using computers, as well as information about what the computer can do and the software available.

Although both groups have basically similar needs, there are differences between the two groups that will have to be addressed. In the low interest group, a key factor in learning, motivation, is missing. This factor must be taken into consideration in making any decisions

about offering training in CALL to French teachers in the province.

CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

A study was conducted to survey French teachers in Newfoundland to determine if and how computers were being used as instructional aids in the teaching of French. The survey was also designed to gather information about the knowledge, skill and attitudes of second language teachers towards computers and their instructional applications.

Overview of the Study

The data for the study was collected by means of a questionnaire given to teachers at the Modern Language Conference held at St. John's in October, 1986. The sample involved 211 teachers, and the response rate was 70 percent.

The participants were full-time, core or immersion French teachers at the primary, elementary or high school levels.

Results of the study were tabulated and analyzed. Findings are generally reported in percentages. Teachers were divided into two groups, user and nonuser by self-report. A further division of the nonuser category was made by analyzing responses to Section C: Teacher Preparation (Items 9 & 10) of the questionnaire which asked teachers to indicate their interest in taking

further training, or attending workshops, to learn about CALL. By this means, teachers who did not use the computer were categorized as showing high interest to learn, or less motivation to learn. The characteristics of each group were analyzed in order to determine which type of teachers formed each group. From this information it was hoped to be able to develop appropriate guidelines for CALL in-service training which would best suit the various populations.

Findings

The findings of the study with respect to the current use of, and attitudes towards CALL, may be summarized with reference to the research questions posed in Chapter 3 of the study (p. 41).

Computer Use

With regard to computer use, only 6% of the French teachers surveyed in the Province currently use the computer for instructional purposes in the French classroom. Ninety-four percent of French teachers do not use the computer. This finding was as expected. It is also interesting to note that, of those who do not use the computer for French, one-quarter to one-third of these teachers have taken computer training and/or courses in the educational use of computers and/or own a home computer. A number of these teachers also use the

computer for administrative purposes, such as record keeping or mark reporting.

It is also interesting to note that of the terms in the nonuser category, 80 percent showed considerable motivation to learn more about CALL, while only 20 percent of the teachers showed low motivation to learn.

The other interesting findings from the data were with respect to the characteristics of the teachers which found the user and the nonuser group with a high interest to learn as compared with the nonuser group with low motivations to learn. The latter group was composed mainly of those teachers who would be most properly called French teachers. The group was composed primarily of those who taught French in the high school, for more than 75 percent of their instructional time. They also tended to have five or more years of experience teaching, and the length of time during which they had taught French was almost equal to that of their total teaching experience. They also tended to be almost 40 years of age, or older, and there tended to be more females than males in the group. Teachers who were already using the computer in French instruction, or who showed interest in learning to do so tended to be those who taught French in addition to other subject areas, had taught French for a shorter period of time than their total teaching experience, and had generally taught for five years or less. Consequently, these teachers represent a younger group.

Although many of them have also a major or minor degree concentration in French, they represent a group who have had a wider teaching experience with respect to subject area, and generally are teaching at the elementary and junior high school levels.

This finding was not expected, as it was thought that the teachers most interested in the use of CALL would be those teaching primarily French at the senior high school levels.

Computer Knowledge

Of the computer users, only half had received instruction in computer use. Almost half were self-taught. This finding was not entirely expected, as it was assumed that most computer users would have received training in computer skills.

Of the non-computer users, almost one-third had received instruction in the use of computers, and almost one-quarter had home computers. This finding was not entirely expected, as it was anticipated that non-computer users would have little computer training or skills.

This finding suggests that there are a number of teachers in the Province who are already using the computer themselves, and may even be using the computer as an instructional aid in other subject areas, but are not using the computer for the teaching of French.

There are still, however, almost two-thirds of the French teachers in the Province who have no knowledge of computers or who have not developed computer skills.

Knowledge of CALL

In general, the teachers are not well-informed about CALL. As would be expected, the computer users showed somewhat greater understanding of the applications of the computer to second language learning. However, even the users were not aware of the full instructional potential of the computer for teaching French. Computer users were aware of the tutorial function of the computer, and felt that the computer could be used for enrichment, remedial work, individualized instruction, drill and practice activities, and the teaching of some skill areas, such as reading and writing. Most non-computer users were only aware of the role that the computer could play in individualizing instruction, and in providing remedial and enrichment activities. Most teachers in the Province did not realize that the computer can assume important communicative roles in teaching French. They were also unaware of the role the computer can play in evaluation.

Attitudes Towards the Use of Computers in Teaching French

Most teachers in the Province displayed a positive attitude towards the use of the computer in the French

language classroom. Also, a large number of teachers reacted favorably to the idea of learning more about CALL.

This finding was not expected. It is generally felt that teachers are somewhat hesitant about using, and learning to use, the computer as an instrumental aid. However, the teachers surveyed displayed no fear, and in fact, seemed to express considerable desire to learn how to apply the computer to the teaching of French.

Needs of Computer Users

The needs of the computer user group are broader than would have been anticipated. While computer users do require more information about software, and training in the evaluation of software, they also have needs in two other areas. Computer users need more information about CALL, and particularly about its communication potential. In addition, many computer users could benefit from some further instruction with respect to the capabilities of the computer.

Needs of Nonusers - High Interest

The non-computer users who exhibited a high interest in training about CALL may be divided into two groups, and the needs of each group are somewhat different.

There are a group of teachers of French who have some computer knowledge, and who may use the computer instructionally in other subject areas. This group

requires training with respect to CALL specifically. These teachers need to be introduced to the applications of the computer to language teaching, and to the teaching of French, in particular. They also require information concerning software, its choice and evaluation.

The remainder of the nonuser - high interest group of teachers require similar information to the first mentioned group with respect to CALL, and its potential for French, and with respect to appropriate software. However, in addition, this group of teachers requires an introduction to the computer, and training in how to use the computer.

Needs of Nonusers-Low Interest

This group of teachers requires training in all three areas mentioned. They need to be introduced to the computer, and trained in its use. They also need to be introduced to the concepts of CALL, and made aware of its applications to the teaching of French. Lastly, they need to become knowledgeable about the software, available and be able to choose appropriate material for their pupils.

With this last group described there is a fundamental difference from that of the two other groups discussed above. In the low interest group, a key factor in training is missing - motivation. This factor must be taken into consideration in making any decisions about

offering training in CALL to French teachers in the Province.

Recommendations

The findings of the study indicate that there is a strong desire among a large percentage of French teachers in the Province to learn about, and to use, the computer as an instructional aid in the teaching of French. One hundred percent of those teachers in the user category, and 80 percent of those who were in the nonuser category showed interest in learning about CALL. Therefore, it appears that the Province should take steps as soon as possible to provide this type of training to teachers.

1. It is recommended that in-service training be provided by the Department of Education for French co-ordinators and teachers who are currently in the field with respect to:
   a) the full potential of CALL, particularly with reference to the teaching of French,
   b) the software which is available for the teaching of French, and
   c) how to evaluate software effectively,
2. It is also recommended that in-service activities be provided by the School Boards to familiarize further teachers of French with CALL. These activities might be organized by French co-ordinators.

3. It is further recommended that School Boards institute in-service training sessions where interested teachers can learn how to use the computer. These in-service activities, while available to French teachers, are developed especially for teachers of French, should be given by board personnel whose expertise is in computer skills and knowledge.

4. It is also recommended that workshops be given at the board level, or provincially with the co-operation of other educational agencies such as the Provincial Department of Education or Memorial University on how to improve effective use of computers for classroom instruction.

With respect to the organization of these workshops, or in-service activities, the following recommendations are also made.

1. Workshops should be organized to respond to the specific needs of identified groups of teachers in order to be most effective. Thus, workshops should be organized for the following categories of teachers:

   a) nonusers-high interest, but no knowledge of computers. These workshops should introduce teachers to the computer, and, if possible, give hands-on experience in using the computer. In-service of this sort is needed

for about two-thirds of the current teachers of French. When teachers have completed this type of workshop, they will then be able to attend in-service activities geared for the next group of teachers.

b) nonusers-high interest, with a knowledge of computers, but no knowledge of CALL. These teachers should be enabled to attend in-service giving them introductory information about the use of CALL in teaching French. This type of workshop is required by about three-quarters of the current teachers of French.

c) users and nonusers-high interest all require in-service which refines their skills and knowledge in the following areas:

   i) effectiveness of use of computers in the classroom,

   ii) deeper understanding of the potential of CALL,

   iii) knowledge of available software,

   iv) development of skills for the evaluation and selection of suitable software.

In-service of this nature is required by about 80 percent of the teachers of French in the Province.

2. French teachers who are categorized as nonusers-low interest should not be required to attend these workshops.

3. It is further recommended that no specific workshops aimed at the French teachers in the nonuser-high interest category be developed. The reasons for this recommendation are two-fold: teachers in this category represent only about 20 percent of the French teachers in the Province. Therefore, their members are not large. They also represent older teachers, showing considerable reservations about the positive potential of the use of computers in the French classroom. It does not seem to be a wise use of resources to spend in-service time attempting to convince these teachers of the value of CALL in the French language classroom. It would appear to be a more productive use of resources to concentrate on up-grading the skills of the large member of teachers of French who are interested in CALL, and letting the positive results of this type of activity gradually be felt in the French classrooms of the Province.

With respect to teacher training in the Province, some further recommendations are made. The Faculty of Education should consider:

1. offering prospective teachers course in change theory focusing on successful integration of new methods into existing programs.
2. give prospective teachers, through course offerings, the opportunity to have experience planning units of study in which the computer is used as a teaching tool.
3. offering prospective teachers of French a course particularly designed to give information on CALL, its advantages and limitations, and in assisting teachers to evaluate, select, and purchase appropriate software for using the computer in the teaching of French software. Training is needed if teachers are to become critical evaluators of software, and be able to choose programs that are consistent with the educational goals of the courses being used in the schools.

There is also the question of the role which computers and CALL should play in the French curriculum in the schools of the Province. The Department of Education should give consideration to this issue. As a result of this study, it is recommended that:

1. The Department of Education should play a more decisive role in developing policy guidelines on using computers instructionally in the schools in all subject areas (particularly French).

Guidelines are needed if computers are to be successfully integrated in the curriculum..

2. The Department of Education should give some direction in evaluating and selecting software. In fact, curriculum planners should be responsible for recommending software for the various subject areas, and giving suggestions as to where it could most successfully be used.

There is also a role for the Newfoundland Teachers' Association (NTA) to play in assisting teachers to become more knowledgeable about computerized instruction.

1. NTA should encourage or sponsor the development of a special interest council which would concern all educators who are interested in educational computing in all subject areas including French. This council could effectively organize sessions where teachers could meet, discuss needs, problems and exchange ideas. In-service training sessions could also be organized for teachers who wish to know how to operate computers and how to use computers instructionally in any subject area. The meetings and in-service sessions need not be large scale conferences, but rather an opportunity for those who are strongly committed, such as the present users, to begin the seeds of organization. Later, it is

possible that to begin to give directions to the development of computerized instruction, a network of borrowing and loaning software, as well as ideas and suggestions for the classroom, might be organized. Such meetings would also provide an excellent opportunity for software developers to demonstrate their software programs.

2. It is also conceivable that a newsletter on a quarterly basis could be developed as a means of communicating with users. This could be an effective tool for new ideas, for publishers to advertise new software, for curriculum coordinators to give suggestions for integrating specific software into curricula and so on.

3. Whether or not these developments should be undertaken by the NTA for teachers in all subject areas, the Modern Language Council of the NTA could organize short courses or conferences, perhaps of the duration of a weekend, in which interested French teachers could learn about computers and their application to second language learning. These courses would perhaps be helpful to teachers who wish to develop skills in applying the computer in a particular subject area. Teachers could discuss their needs and other issues connected

with using computers and teaching French. They could share information, exchange ideas and suggestions, discuss the kind of software they use, and why and how they use the computer in the classroom. This kind of sharing and exchanging of information can only be helpful in increasing the knowledge of the computer user and to improve the current use of instructional computing in the classroom. It will also increase the awareness of other teachers to the possibilities of the computer use in the second language classroom.

Suggestions for Further Research

While there are many questions with respect to the effectiveness of particular software perhaps for the teaching of French which need to be investigated, this researcher would like to make, one, possibly more practical, suggestion for the Province of Newfoundland. Since teachers often work in isolation and small group meetings are often more realistic means of in-service education than large scale conferences or credit courses, the possibility of the development of an information handbook on computers, and CALL, with respect to French appears to have considerable merit. A manual could be developed which could be divided into sections, and could

therefore respond to the needs of users and nonusers. The manual could contain sections on the following topics:

1. Introduction to the computer, and how to use it.
2. Guide to the effective use of computers in the classroom.
3. Information about CALL, its present state and potential for teaching communicative activities, as well as full information of all various roles it can assume in language teaching.
4. Some guidelines on and choosing evaluating appropriate software, as well as lists of software available.

The manual then could be used by different groups, or individual teachers, depending on their initial knowledge of computers, and of CALL, and could help teachers to gain enough information that they would be ready to experiment with some aspects of CALL in the French language classroom.

Schools should provide support and opportunities for teachers to integrate computers into their classes if they wish. No matter how much training and planning is provided, it is only with the support and encouragement at the school level that instructional computing will be realized.

The use of a teaching aid with such potential as that of the computer cannot help but be a powerful ally to

teachers in their attempts to improve the teaching of French in the schools.

As this study has shown, most teachers of French in the Province do not need to be convinced that CALL is an additional and probably effective, instructional aid. They have demonstrated their interest. They do, however, require knowledge and practice, given to them in a sequenced and organized manner. Once this group of interested teachers are informed, and organized, they could provide leadership, support and encouragement for other teachers to become involved in using the computer in language learning.

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APPENDICES

Appendix A

A Survey on the Use of the Computer as an Instructional Aid in the Teaching of French in Schools in Newfoundland

A Survey On The Use Of The Computer As An Instructional Aid In The Teaching Of French In Schools in Newfoundland

Mon cher Collègue,

The use of computers in education is a relatively recent phenomenon. Its impact is being felt in every discipline including second language learning. Information about the extent and type of its use however, is not well known.

This questionnaire is being given to you to gather reliable data about computer utilization in the teaching of French in Newfoundland schools. The survey also hopes to determine how French teachers feel about computer assisted language learning.

The information gathered will provide a basis for making informed decisions about the most effective use of computers in the French curriculum.

Your participation in this survey is directly related to the success of this study on computer utilization.

Thank you for taking the time from your busy schedule at the conference to complete this questionnaire. Your interest and co-operation are very much appreciated.

Valerie Hoskins
Teacher

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October 3, 1986

Questionnaire for French Language Teachers

Section A: Background Information

Please check each of the following items by placing a check mark (✓) for the appropriate response in the space provided.

1. Age: under 25 ___ 25-29 ___ 30-39 ___ 40-49 ___ 50-59 ___ over 59 ___

2. Sex: male ___ female ___

3. Teacher's Certificate:

I	II	III	IV	V	VI	VII
___	___	___	___	___	___	___

4. Years teaching experience (including this school year):

< 5	5-9	10-19	20-29	over 29
___	___	___	___	___

5. a) Do you teach French all of the time? Yes ___ No ___

5. b) Check the grades and courses in which you teach French this year?

___ Core	___ Immersion
Primary G 1 2 3	Primary G 1 2 3
___ ___ ___ ___	___ ___ ___ ___
Elementary 4 5 6	Elementary 4 5 6
___ ___ ___	___ ___ ___
High 7 8 9	High 7 8 9
___ ___ ___	___ ___ ___
French 2100 French 2101	Level I ___
___ ___	
French 3200 French 3201	Level II ___
___ ___	
Other _____	Level III ___

6. Total number of years teaching French?

< 5	5-9	10-19	20-29	over 29
___	___	___	___	___

7. a) **High School Teachers:**

Is French your university major? Yes ___ No ___

If no, in which subject area did you major in University?
_____

b) **Elementary/Primary Teachers:**

Is French your subject area of concentration? Yes ___ No ___

If no, what is your subject area of concentration?
_____

8. Do you have a personal computer in your home? Yes ___ No ___

If yes, which kind?

C64 ___ TRS 80 ___ Apple II ___ other _____

9. Have you been trained to use a computer? Yes ___ No ___

10. Have you taken courses in the use of computers in education?

Yes ___ No ___

11. Do you presently use computers for administrative purposes?

Yes ___ No ___

Please check the ones you use:

A	B	C
mark-keeping	test construction/ class notes	test analysis
___	___	___

other (please specify) _____

Section B - Computers in the School

Please check each of the following items by placing a check mark (✓) for the appropriate response in the space provided.

1. In what kind of community do you now teach?

   1. ____ Community over 25,000
   2. ____ Community between 10,000 - 25,000
   3. ____ Community between 5,000 - 10,000
   4. ____ Community less than 5,000

2. School: Primary ____ Elementary ____ High ____ Other ____

3. School population: under 200 ____ 200-300 ____ 300-400 ____ 400-500 ____ over 500 ____

4. Do you have computers in your school? Yes ____ No ____

   If **yes**, how many? ____ Don't know ____

   What kind? C64 ____ TRS 80 ____ Apple II ____ Other ____ Don't know ____

5. If **no**, does your school have access to computers in another school?

   Yes ____ No ____

   If **yes**, how many? ____

   What kind? C64 ____ TRS 80 ____ Apple II ____ Other ____ Don't know ____

Section C

1. In teaching French, how often do you use the following instructional aids? Circle the appropriate response, and use this scale.

Key:	Never	Sometimes	Most of the time	Always
	1	2	3	4
a. Prescribed texts	1	2	3	4
b. Prescribed tapes	1	2	3	4
c. Prescribed charts and visuals	1	2	3	4
d. Tapes and records of French songs and dialogues	1	2	3	4
e. Language lab	1	2	3	4
f. Listening centre	1	2	3	4
g. Teacher made charts and visuals	1	2	3	4
h. Videos and films	1	2	3	4
i. Overhead transparencies	1	2	3	4
j. Cultural modules	1	2	3	4
k. Computer assisted language learning	1	2	3	4

Please read each statement and then circle the response which best represents your opinion, as follows:

If you strongly agree, circle "SA"	SA A ? D SD
If you agree, circle "A"	SA A ? D SD
If you are not sure, circle "?"	SA A ? D SD
If you disagree, circle "D"	SA A ? D SD
If you strongly disagree, circle "SD"	SA A ? D SD

2. Computers would be used more in teaching French if ...

a. there were more computers in the school	SA A ? D SD
b. teachers had time and the opportunity to learn about computer assisted language learning.	SA A ? D SD
c. teachers had access to information on the possibilities of Computer Assisted Language Learning in the classroom	SA A ? D SD
d. there was more suitable software	SA A ? D SD
e. the Department of Education loaned software	SA A ? D SD
f. the Department of Education recommended suitable software	SA A ? D SD

3. If computers were to be used, how do you expect the use of computers to modify the teaching of French?

a. Drill and practice for all students	SA A ? D SD
b. Remedial drill for low ability students	SA A ? D SD
c. Enrichment activities for high ability students	SA A ? D SD
d. Raise the interest level of students	SA A ? D SD

e. Provide better formative and summative evaluation SA A ? D SD

f. Individualize instruction SA A ? D SD

g. Lessen teacher workload SA A ? D SD

h. Enable the teacher to cover more content SA A ? D SD

i. Provide activities to develop communicative competence SA A ? D SD

j. Reduce student-teacher contact SA A ? D SD

k. Necessitate longer French periods SA A ? D SD

l. Improve writing skills, especially in composition SA A ? D SD

m. Improve reading comprehension SA A ? D SD

Questions 4 - 8: Answer only if you use computers as instructional aids in your French classes.

4. How are computers used in your French classes?

a. whole class with one computer: ____

b. whole class with ___ computers: ____

c. in class, 1 computer per student: ____

d. in class, 2 or 3 students per computer: ____

5. Do you use your own computer in your classes? Yes ____ No ____

If yes, how often? All the time ____ Sometimes ____

6. How satisfied are you with the **amount** of computer software available for French? (Check ONE)

1. ___ Not at all satisfied
2. ___ More dissatisfied than satisfied
3. ___ More satisfied than dissatisfied
4. ___ Well satisfied

7. How satisfied are you with the **quality** of computer software available for French? (Check ONE)

1. ___ Not at all satisfied
2. ___ More dissatisfied than satisfied
3. ___ More satisfied than dissatisfied
4. ___ Well satisfied

8. In which area of computer use do you have the greatest need in teaching French? (Check ONE)

1. ___ Not enough computers
2. ___ Software/courseware
3. ___ Administrative support
4. ___ Other (please specify) _____

9. If the Department of Educaton, The Modern Language Council or your School Board sponsored an inservicing on the use of the computer in the classroom, you would ...

a. Make an effort to attend:	Yes	No	Maybe
	___	___	___
b. Request the literature:	Yes	No	Maybe
	___	___	___
c. Find out about it from someone who attended:	Yes	No	Maybe
	___	___	___
d. Avoid it.	Yes	No	Maybe
	___	___	___

10. How interested are you in taking a course to learn how to use a computer for instructional purposes? (Check ONE)

1. ___ Not very interested
2. ___ Somewhat interested
3. ___ Moderately interested
4. ___ Very interested
5. ___ undecided

Please comment.

If there were computers, and suitable software, available how would you use computers be used in your classes?

Additional Comments:

Appendix B

Appendix B

In the final item of the questionnaire, teachers were invited to comment on the implementation of computers in their French classes. A total number of 132 teacher made comments, with the other 79 making no comments.

Amongst the 132 teachers who responded, 22 teachers stated that they were unable to make any worthwhile suggestions because they were not well-enough informed: 49 teachers made positive comments about the effects of computers on teaching French, and six teachers made negative comments about using computers to teach French.

Summary of Comments Found in the Final Item of the Questionnaire

Comment	Number of Cases
"Not informed enough to make comments"	22
Enrichment for high ability students	28
Remedial help for low ability students; drill and practice and reinforcement of skills taught	26
Administrative aid only	1
Would like to know how to use, but would need more information and in-servicing	24
Reinforce vocabulary	5
Reinforce grammar	6
Activity centre	4
Individualized instruction	5
Develop oral skills	1
Writing skills	15
Motivational aid (such as games)	29
Grouping	1
Undecided; uncertain	2
Not familiar with software	4
Develop reading skills	10
Testing purposes	3
Reinforce listening skills	1
Reinforcing skills in French immersion	4