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**STRANGERS IN A STRANGE LAND:**  
**TEACHERS' BELIEFS**  
**ABOUT TEACHING AND LEARNING**  
**FRENCH AS A SECOND OR FOREIGN LANGUAGE IN**  
**ONLINE LEARNING ENVIRONMENTS**

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## RÉSUMÉ

Cette recherche effectuée auprès de professeur-es de français comme langue seconde et étrangère (FLSE) vise à relever leurs croyances relatives à l'enseignement et à l'apprentissage dans des environnements d'apprentissage en réseaux (EAR). Elle vise aussi à dégager de ces croyances des signes de l'évolution des approches pédagogiques, des théories d'apprentissage et des technologies utilisées dans cet enseignement au cours du dernier siècle. Des comparaisons sont faites entre les EAR et les environnements d'apprentissage traditionnels et les sortes de croyances qui conviennent à chaque environnement. Au plan méthodologique, on a utilisé pendant dix mois une liste de discussion en réseau ainsi que 130 questionnaires à réponses libres. On a relevé plus de 400 croyances réparties en deux catégories selon qu'elles s'avèrent favorables ou pas à l'utilisation des environnements d'apprentissage en réseaux. On constate que ces croyances relèvent d'une variété d'approches et de théories d'apprentissage. On a pris en considération la relation entre les théories officielles en rapport avec l'apprentissage des langues et les théories implicites ou croyances des professeur-es. Il existe des croyances particulières à l'enseignement du FLSE qui présentent certains défis à l'utilisation efficace des EAR étant donné la prédominance de la langue anglaise dans ces environnements. Les croyances centrées sur l'apprentissage ainsi que celles reflétant l'utilisation de l'ordinateur comme générateur de réalité semblent être plus compatibles avec l'utilisation des EAR. Parmi les croyances, quatre paramètres de conflit ont été identifiés.

## RÉSUMÉ

Cette recherche effectuée auprès de professeur-es de français comme langue seconde et étrangère (FLSE) vise d'abord à relever leurs croyances relatives à l'enseignement et à l'apprentissage dans des environnements d'apprentissage en réseaux (EAR). Elle vise aussi à dégager de ces croyances des signes de l'évolution des approches pédagogiques, des théories d'apprentissage et des technologies utilisées dans cet enseignement au cours du dernier siècle. Le cadre conceptuel et historique servant à interpréter ces croyances repose sur l'esquisse d'une vision renouvelée de cet apprentissage. Dans une perspective écologique, on nuance les rapports entre les environnements en réseaux et les croyances des professeur-es relatives à l'enseignement et à l'apprentissage dans ces environnements.

Les croyances sont définies comme un système complexe et interrelié de connaissances personnelles qui sert de théories implicites et de schémas cognitifs qui correspondent à leur expérience de la réalité. Au plan méthodologique, on a utilisé pendant dix mois une liste de discussion en réseau et on a aussi envoyé par courrier dans la province de Terre-Neuve et du Labrador, Canada, 130 questionnaires à réponses libres. Des échanges personnels avec 16 participants des listes de discussion et avec 5 participants parmi les répondants au questionnaire ont encore permis de préciser certaines croyances. Les professeur-es de la maternelle jusqu'à la fin du secondaire, se servant ou pas des technologies en réseau, étaient ciblés.

On a relevé plus de 400 croyances réparties en deux catégories selon qu'elles s'avèrent favorables ou pas à l'utilisation des environnements d'apprentissage en réseaux. Les croyances favorables soulignent les ressources et l'information; la communication et la collaboration; l'apprentissage authentique; la motivation; l'apprentissage; l'enseignement. Les croyances non favorables évoquent le temps et le curriculum; la formation, le support et la vision; l'accès et l'équipement; le contrôle et la supervision; les étudiants; les environnements d'apprentissage en réseaux.

On constate que ces croyances relèvent d'une variété d'approches et de théories d'apprentissage. On a pris en considération la relation entre les théories

officielles en rapport avec l'apprentissage des langues et les théories implicites ou croyances des professeur-es. Il existe des croyances particulières à l'enseignement du FLSE qui présentent certains défis face à l'utilisation efficace des EAR étant donné la prédominance de la langue anglaise dans ces environnements. Les croyances centrées sur l'apprentissage ainsi que celles reflétant l'utilisation de l'ordinateur comme générateur de réalité semblent être plus compatibles avec l'utilisation des EAR. Parmi les croyances, quatre paramètres de conflit ont été identifiés.

On recommande fortement d'instituer un processus itératif de négociation personnelle et publique afin de réconcilier les différences entre les croyances des collègues, des élèves et de la communauté académique au sens large. La formation professionnelle pourrait mettre en évidence des substituts à la transmission du savoir et aux pédagogies centrées sur le professeur. La formation pourrait aussi aider à développer une compréhension de la nature des EAR et les styles d'apprentissage et d'enseignement qui conviennent à chaque environnement.

## Abstract

This study aims to profile the beliefs of teachers of French as a second and foreign language (FSFL) about teaching and learning in online learning environments (OLEs) and to understand in what ways the beliefs reflect the evolution of approaches, learning theories and use of technology in the teaching of FSFL throughout the past century. Comparisons are made between traditional and online learning environments and the types of beliefs and approaches to learning that each best supports. Data collection methods incorporated use of a 10 month long international, online discussion list as well as the distribution of 130 open-ended questionnaires throughout the province of Newfoundland and Labrador, Canada. The profile of the beliefs resulted in approximately 400 beliefs spread over two categories representing respectively advantages or challenges to use of OLEs. The interpretation of the findings revealed that teachers' beliefs reflect a range of approaches and learning theories. The relationship was considered between the official theories related to language learning on one hand and the implicit theories or beliefs of teachers on the other. There are beliefs particular to FSFL that present certain challenges to effective use of OLEs given the comparative domination of these environments by the use of the English language. Beliefs that are centered on learning as well as those reflecting use of the computer in the role of generator of reality appear to be compatible with use of OLEs. Four dimensions of conflict among beliefs were identified

## Abstract

This study first aims to profile the beliefs of teachers of French as a second and foreign language (FSFL) about teaching and learning in online learning environments (OLEs). Secondly, it aims to understand in what ways the beliefs reflect the evolution of approaches, learning theories and use of technology in the teaching of FSFL throughout the past century. The historical and conceptual framework against which the beliefs are interpreted includes an outline of a vision of learning FSFL in the 21<sup>st</sup> century.

The study took an ecological perspective as a means of gaining insight into the relationships between OLEs and teachers' beliefs about teaching and learning in such environments. Comparisons are made between traditional and online learning environments and the types of beliefs and approaches to learning that each best supports. Beliefs are defined as a complex and interrelated system of personal knowledge that serves as implicit theories and cognitive maps for experiencing and responding to reality.

Data collection methods incorporated use of a 10 month long international, online discussion list as well as the distribution of 130 open-ended questionnaires throughout the province of Newfoundland and Labrador, Canada. Individual dialogues or discussions were held with 16 participants from the discussion list as well as 5 participants from the questionnaire respondents. The participants represented both users and non-users of online technologies primarily in the K-12 system.

The profile of the beliefs resulted in approximately 400 beliefs spread over two categories representing respectively advantages or challenges to use of OLEs. The sub-categories of advantages related to resources and information; communication and collaboration; real-world learning; motivation; learning; and teaching. The sub-category of challenges included time and the curriculum; training, support and vision; access and equipment; control and monitoring; students; and OLEs.

The interpretation of the findings revealed that teachers' beliefs reflect a range of approaches and learning theories. The relationship was considered between the official theories related to language learning on one hand and the implicit theories or beliefs of teachers on the other. There are beliefs particular to FSFL that present certain challenges

to effective use of OLEs given the comparative domination of these environments by the use of the English language. Beliefs that are centered on learning as well as those reflecting use of the computer in the role of generator of reality appear to be compatible with use of OLEs. Four dimensions of conflict among beliefs were identified

A process of self and social negotiation was recommended as a means of reconciling the differences between the beliefs of colleagues, students, systemic conventions and the larger school community. Recommendations were made for the provision of professional development sessions to present opportunities for exposure to beliefs that provide alternatives to knowledge transmission and to teacher-centered pedagogies. Recommendations were made for the provision of professional development opportunities to help in the development of an understanding of the nature of OLEs and the types of learning and teaching styles that they best support.

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# Chapter 1

## Strange New Worlds:

### Introduction

In a landscape without bearings, teachers create and internalize their own maps. (Kagan, 1992)

#### 1.1 Introduction

Michel Tournier (1972), in his novel *Vendredi ou les limbes du Pacifique*, retells the tale of Robinson Crusoe, a young man stranded on a desert island, exiled from civilization as he knows it, a stranger in a strange land. Not long after his arrival on the deserted island, Robinson begins the arduous task of adapting his environment, of changing it in such a way as to make the wild, immense and virgin island conform in every way to the civilization which he left behind in his native Holland. Robinson goes to great lengths to ensure that every aspect of civilized life is represented in his new environment. Constructing, organizing, ordering, measuring, mapping, legislating, exploiting, administering, regulating, labeling: these are some of the activities in which Robinson engages in order to “metamorphosize” the island. His zeal extends to attempts at tagging every bird, labeling every plant and even to imposing a penal code.

Tournier’s tale evolves into somewhat of a parable as Robinson’s self-constructed world eventually and literally explodes. Robinson finds himself once again in an environment which does not bear any resemblance to the civilized world. However, this time, it is Robinson who, instead of changing his environment to suit him, does the reverse - he begins to adapt to his environment. It is he himself who changes his appearance, his relationship with the only other inhabitant of the island and his daily habits. He no longer aims to change the island; rather he marvels at its natural state. Thus, this time, it is Robinson who undergoes the metamorphosis. A sense of calm now characterizes his state of mind. He becomes more reflective, more in tune with his inner self, more at peace and content to live on the island without needing to transform it.

Robinson’s experiences, by analogy, evoke in many ways the immediate response

that, as humans, we instinctively take when faced with new environments in particular or with newness in general. We impose the map on the territory. We rely and depend on the familiar. We fashion the new on the old. We recreate that which is absent. We compare with what we have already. We pattern from the past. We think within the dominant paradigms. Thus, we are as McLuhan (1964) so articulately mused, “dragged into the future” moving forward while “looking into a rear-view mirror”. Unfortunately, such tendencies create dilemmas. To move forward, we must have the ability and will to transpose or detach ourselves from the present and past patterns and paradigms that dictate the ways in which we think, do, feel and believe. Most importantly, we must have the ability to change or accommodate our ways of thinking to suit the world instead of changing our representation of the world to assimilate it to our ways of thinking.

The need to be able to detach ourselves from the past has perhaps never before been so imperative as it is now. It has almost become cliché to comment on the exponential rate of change facing humanity at the beginning of the 21<sup>st</sup> century. The change is nonetheless startling, rapid and all-encompassing. Mention need hardly be made of the magnitude and scope of changes affecting all aspects of society and the world as a result of the evolution and progress in the area of technology and telecommunications. Perhaps more than ever in the history of humanity are humans facing changes in their environment. More than ever are they forced to adopt new ways of thinking, doing and being. Change is not exclusive or selective in terms of the sectors of society which it affects. Industry, health, education, politics, business: all are affected.

In the area of education, there now exist new online environments for learning. Such environments offer great potential and many possibilities for education and particularly for the teaching of French as a second or foreign language (FSFL). However, their potential may only be realized if teachers can accommodate their personal theories, beliefs and practices to suit the characteristics of the new environment. The potential may not be realized if, like Crusoe, teachers expect that the new environment will allow a simple transposition of their beliefs. Instead, teachers may need to define new maps, to

adapt to the new environments and to evolve their beliefs to ensure that they are compatible with learning in the online learning environments.

This study is concerned with understanding how certain individuals react when faced with new environments. Thus, the dominant metaphor for the study is a geographical one. The terms *environments*, *lands*, *landscapes* and *territories* are used synonymously to refer to the settings for learning. The study takes an ecological perspective as a means of gaining insight into the relationships between online learning environments (OLEs) and teachers' beliefs about teaching and learning in such environments. Along with these environments and landscapes, we have the metaphor of the map, i.e., the representation of the environment or territory. The map is symbolic in this study of teachers' beliefs, personal knowledge and implicit theories. Just as the map serves as the traveler's guide through unknown territories, so too do teachers' own theories and beliefs largely influence the direction or approach they take in their teaching. The study's use of geographical metaphors is necessary in order to understand and conceptualize the new phenomenon of online learning environments with their accompanying technologies and tools. The entire concept of OLEs can best be conceptualized by relating it to concepts with which we are already familiar.

The online learning environments that are referred to in this study are comprised of the wide array of Internet tools and mediums that can be combined and exploited for educational purposes. The Internet itself can be many things to many people. The interest of this study is in the Internet as an open learning environment. By using the term learning environments we place a greater emphasis on the place in which learning takes place. In general, use of the term learning environments highlights a shift in thinking which is taking much of the focus away from teaching and redirecting it instead towards learning. For Perkins (1996), an environment has "length and breadth, places and parts, non-living and living, simplicity and complexity, constancy and change" (p. v). Wilson (1996) describes a learning environment as "a place where people can draw upon resources to make sense out of things and construct meaningful solutions to problems" (p.3). The traditional reference of the "classroom" as the setting for learning means little when we

think of OLEs. The term “virtual classroom” suggests that the new environments for learning must, by necessity, be modeled from the “real world” counterpart. As this study aims to illustrate, the digital landscape of the Internet stands in stark contrast to the four-walled classroom and, as such, has no equivalent in the “real world”.

For the sake of convenience, and because the term *Internet* is more common than the term *online learning environments*, the two terms are used synonymously in this study. At the same time, the difference between the two terms should be made clear. The distinction between the two is that *online learning environments* refers specifically to use of the Internet for the purposes of teaching and learning and includes e-mail, video-conferencing technologies, the World Wide Web, discussion lists, telnet, FTP, gopher, Veronica, newsgroups, MUDs, MOOs, chat rooms, search engines, real audio, shockwave, HTML, VRML, Java and other such new, emerging technologies. The term *Internet* places greater emphasis on the tool or medium. However OLEs are far more than tools: they are places or spaces for learning of which the tools are simply one component.

What happens when the traveler or explorer visits new, uncharted lands? What happens when the map corresponds only partially, or perhaps not at all, to the territory? Faced with the newness of this environment, teachers can only rely on and adapt the maps that they have already and that are representations of the world of the classroom. Yet, while the classroom environment is familiar, the environment of the Internet is foreign or strange. How do their beliefs about the traditional classroom mesh with the new environment? How do they see their role? How do they see their students' role? What do they perceive as the value of this new learning environment? How do they perceive and interpret the experiences they have there? What type of approach to the teaching of FSFL do they favour when working in this environment? These are some of the questions and issues that are investigated in this study.

The primary question that has driven this study is: What are some of teachers' beliefs about teaching and learning FSFL in online learning environments? It is this question which can serve as a starting point for attempts to face the task of evolving second- and foreign- language teaching practices to bring them more in line with the

demands, needs and possibilities of teaching and learning in online learning environments. Equally important is the need to understand these beliefs within a larger conceptual and historical context. This research thus aims to profile the beliefs and, as well, to situate them in relation to a broader context of the evolution of language teaching and of technology use in language teaching from the end of the 19<sup>th</sup> century up to the 21<sup>st</sup> century.

## **1.2 New Landscapes for Learning**

We are entering a new millennium, a new age - one which Negroponte (1995) terms the “digital age”. The digital age is an age of bits instead of atoms, an age of “ubiquitous computing” with smart cards, smart cars, “wearable media” and “digital butlers”. Most importantly, it is an age of exponential change. Such change presents new possibilities and potential for learning. MUDs, MOOs, virtual worlds, 3D worlds, micro-worlds, intelligent environments, simulated environments, global networks, adaptive systems and hypermedia environments are now characteristic of the digital landscape for learning. Video-conferencing, e-mail correspondence, virtual travel, web-publishing, key-pals, electronic mentoring, electronic searches: these are but some of the categories of activities in which students can engage in the context of learning online.

Perhaps more than any other area of the curriculum, the teaching of a second or foreign language can capitalize on the potential and possibilities of online learning. The Internet facilitates, in a very large way, authentic and meaningful communication and presents significant potential for making language learning both more purposeful and more meaningful for students. Furthermore, sites, projects and activities for learning FSFL increase daily as interest in the Internet grows in education circles. Virtual communities, museums, virtual travel, global exchanges, visits to the Louvre in Paris, conversation with Francophone keypals, access to Francophone libraries: developments and progress in the Internet offer students of FSFL opportunities for authentic, meaningful, communicative language activities by recreating a virtual French

environment in their very classroom. The concepts of virtuality and simulation characteristic of the Internet are not new to the teaching and learning of FSFL. One of the conventions assumed of a language class is the willingness and capacity to suspend belief and to participate in simulated communication. Thus, the teaching and learning of FSFL actually depends on these concepts in order to recreate the essence and elements of being in the milieu of the second or foreign language.

Methods for teaching FSFL have varied based on whether or not the learner has had direct access to the culture of the target language. The learner's access to oral practice or lack of it largely dictated the method. Advances in technology mean that all learners can now have virtual access to the target language and culture. Whether the learner is in a classroom in a remote Anglophone community in Canada or directly in Québec City or Paris is less of a constraint. The emerging technologies of the Internet and virtuality provide a "binocular illusion", "a magical window onto other worlds", the experience of being in a virtual world or remote location (Rheingold, 1991).

### **1.3 Strange New Worlds**

The new landscapes for learning are ready to be explored and exploited by teachers. But are teachers ready or prepared for this new landscape or learning environment? Is it simply a matter of transposing one's knowledge, beliefs about and approaches to learning? Is the online learning environment different from the classroom only in the fact that it is virtual - in bytes instead of in atoms? This study is premised on the argument that online learning environments represent, metaphorically speaking, a strange land or foreign phenomenon with which teachers are largely unfamiliar. The newly created, unorganized and decentralized world of the Internet is a strange land particularly for educators: strange not only because of its nature but because of how it contrasts with traditional learning environments. This section looks at OLEs in order to appreciate and understand the ways in which they differ from the traditional classroom environment.

De Kerckhove's (1997) reflections on the Internet provide us with a perspective

that highlights its uniqueness and newness. The author argues that the Internet constitutes the most comprehensive, innovative and complex communication medium in existence representing the mega-convergence of hypertext, multi-media, virtual reality, neural networks, digital agents and even artificial life. It is a “quasi-organic environment of millions of human intelligences” (p. xxiii). The ecology of such a network can be characterized by three essential elements: interactivity, hypertextuality and connectedness. In contrast to the information technologies of the past which were aids to memory, the Internet serves as an aid to intelligence. It is the “ultimate decentralizing force” that suppresses all distances and all delays. The lack of “horizon” on the Internet leaves its users with a “loss of a clear sense of boundaries”. The notion of personhood is challenged by extending the body’s reach and range and through use of hypertext which “turns everybody’s memory into everybody else’s”.

An additional distinguishing feature of the Internet relates to the notion of time. De Kerckhove explains the new conception of time created through Internet use:

To conduct e-mail and related Internet activities, one needs a different sense of time. The difference is that the time in use is not linear. It is not real time because inputs or messages are not guaranteed an immediate response. However, the exchanges are not really out of time like the content of books, for instance, because they are almost as contextualized as a conversation is. They are like a telephone conversation in slow motion (and, of course, in text). This is the secondary “real-timeliness” of the web. One might call it “expanded” or “non-linear real time.” The time of the net is expanded to include and accommodate the same level of context as an oral exchange, but over multiple entry points. (p. 82)

Internet communication is most often asynchronous which results in the element of time playing a less important role than in non-Internet communication. As Newhagen and Rafaeli (1996) observed in relation to time: “The Net stretches the edges of the synchronicity continuum. Communication on the Net travels at unprecedented speed. It can also be consumed at unprecedented delays” (p.2). The Internet can also be characterized as unorganized, uncensored, decentralized and unordered. It provides for non-linear presentation and communication as well as sensory vastness (Ibid. ). Another

important feature of the Internet is its openness. “On the Net, due to historical reasons perpetuated by the discovery of other functions, the organizing principle is to have no organization, or deliberate, orderly anarchy. The message keeps its own gate, carries its own homing device. The net treats censorship as noise and is designed to work around it” (Ibid., p.2).

One type of learning environment provided by the Internet or an approach to learning which it supports or facilitates can be described as constructivist. Mather (1996) argues that the Internet is a very natural partner for the computer technology that exists in the information age. He posits that the anarchy of the Internet, with its non-linear hypermedia, is a “natural proving ground for constructivism”. Constructivist approaches to teaching and learning are based on the following assumptions:

- Knowledge is not transmitted and received, rather it is actively constructed by individuals through interaction with their physical and social environments. (Cognition & Technology Group at Vanderbilt, 1996)
- Teachers play the role of a “midwife in the birth of understanding” as opposed to being “mechanics of knowledge transfer”. Their role is not to dispense knowledge but to provide students with opportunities and incentives to build it up. (von Glasersfeld, 1996)
- An awareness of the social construction of knowledge suggests a pedagogical emphasis on discussion, collaboration, negotiation, and shared meanings. (Ernest, 1995)
- The learning process is student-centered whereby students play an important role in setting the goals for learning. (Honebein, 1996)
- Rather than behaviours or skills as the goal of instruction, concept development and deep understanding are the foci. (Fosnot, 1996)

Knowledge collaboration and construction, student-centered learning, shared meanings, life-long learning, learning communities, knowledge building and sharing, communication, high learner control, problem -solving, active learning and authentic

activities: these are some of the important values of constructivist approaches and are facilitated by online learning environments. They are not, however, necessarily well supported by traditional learning environments (TLEs). The differences between the OLEs and TLEs arise, not only from the differences in approaches which they support, but from the fundamental characteristics of each environment as explained in the following section.

#### **1.4 Familiar Worlds**

The learning environment of the traditional classroom is a legacy of the 15<sup>th</sup> century printing revolution - a system of schooling that relies on a print environment. Linear sequential order, uniform curriculum divided into subject disciplines, centralized bureaucracy, emphasis on book learning, a focus on content as opposed to process: these are all characteristic of TLEs (Logan, 1995). Farnham-Diggory (1990) describes how many aspects of TLEs which we take for granted today are actually modeled on the factory environment:

There are standardized ways of keeping records, planning curriculums, furnishing classrooms, dividing up school days (into periods), dividing up curriculum (into units and lessons), administering discipline, instructing, and grading. Every school, every district, and every state has manuals that detail exactly how things are to be done. Ideas of quality control and interchangeability were borrowed from the workplace and applied to education. (p.23)

The classroom environment is highly structured, controlled and organized. It is generally physically designed to be teacher-centered with a blackboard at the front facing rows of student desks. It uses a traditional text-based curriculum which is delivered through a lecture-recitation-seatwork mode, with teacher as dispenser of knowledge and with the common tools being textbooks, workbooks, ditto sheets and overhead projectors (Dwyer, Ringstaff, Sandholtz, 1992 & 1992b). The physical environment of schools impacts on the types of activities that take place, on the types of rapports that exist and, no doubt, on the beliefs that motivate teachers' behaviours in these schools. The classroom is traditionally bounded, not only by four walls, but by the structures, rules,

procedures, schedules and curriculum. In an investigation of the types of learning that are supported by different physical environments, Stuebing, Celsi and Cousineau (1994) describe the traditional school building:

From a physical perspective, the traditional school building is a double-loaded corridor that compartmentalizes classrooms, as well as students and teachers, into what has commonly been called an “eggcrate” arrangement. This historical model for school organization has been associated with an emphasis on control of students and on teacher-centered, lecture-format learning. (p.2)

Part of the setting or organization of schooling includes the element of time. TLEs allow for instruction organized around short blocks of time (Means et al.,1993). The dynamics of clock and calendar dictate much of the activity in schools. The report of the National Education Commission on Time and Learning (1994) investigated the role of time in learning and illustrated the dominance of time in the school environment. Schools are characterized by:

- fixed times for opening and closing;
- fixed time for the length of the school year;
- a division of the day into six-periods with about 5.6 hours of classroom time a day;
- regardless of the complexity or simplicity of the school subject, the schedule assigns each an impartial national average of 51 minutes per class, period, no matter how well or poorly students comprehend the material;
- secondary school graduation requirements are universally based on seat time - a standard of measurement representing one credit for completion of a one-year course meeting daily;
- the school clock governs how families organize their lives, how administrators oversee their schools, and how teachers work their way through the curriculum;
- time governs how material is presented to students and the opportunity they have to comprehend and master it.

Farnham-Diggory (1990) has also noted the important role that time plays in TLEs. Time, structure, organization, compartmentalizing: these are all dominant features of the school environment as the author describes:

Days are subdivided into periods, periods are subdivided into lessons, lessons are subdivided into objectives (for example, working ten problems correctly). Even within a forty-minute period devoted to the same subject matter (social studies for example), there is often no clear unifying theme. There are exercises to be gone through, daily lesson “scripts” that the children have learned to expect, but there is little internal organization to the material. At the end of the period, work in one area is “put away”, and work for the next area is “gotten out”. Sometimes students go to another room and another teacher. The adjacent lessons seldom have any connection and the lessons that address the topic just covered, won’t come round again for at least a day, and sometimes not for several days or even a week. (p. 145)

Papert (1993) argues that much of present day schooling “remains largely committed to the educational philosophy of the late nineteenth and early twentieth centuries”. Tests, “segregation by age”, teachers as technicians who mold passive minds, and an emphasis on reading as the “essential route to knowledge” are the prime characteristics of today's education system according to Papert. Schools use a “Gothic Cathedral model of learning” with the “knowledge architect” who will specify a plan for the placement of “knowledge bricks” in the minds of children. Knowledge is transmitted through a pipeline from teacher to student and is “treated like money, to be put away in a bank for the future”. What Papert is describing is the transmissionist or instructionist models or practices characteristic of most classrooms (Cognition & Technology Group at Vanderbilt, 1996). Transmission models of teaching and learning are based on the following assumptions:

- Learning involves the accumulation of particular sets of facts and skills; teaching involves the transmission of facts and skills by an expert;
- assessment involves an accounting of whether the desired facts and skills have been acquired;
- the role of the teacher is to deliver information while the role of

the student is to demonstrate that what has been transmitted has been attained; and

- typically, all students are taught the same thing at the same time. (Cognition & Technology Group at Vanderbilt, 1996)

When we examine the traditional environment of the classroom, we can identify a number of prominent characteristics and defining features. The environment is highly structured, controlled and organized, text-book centered and curriculum and time driven. It is modeled on a philosophy of learning from the past. The most appropriate metaphor to describe the model would be that of the factory or assembly line. Such an environment best supports what can be termed as a transmissionist or instructionist approach to learning and teaching. Such an environment contrasts radically with OLEs which were described in the previous section. The following section of this chapter aims to highlight the differences between these two types of environments. More importantly, it questions what occurs when the two types of environments overlap, or when teachers move from one environment to the other.

### **1.5 The Map is not the Territory**

This study takes an ecological perspective and therefore considers, not only the environment but, as well, the relationships and interplay between the elements in the environment. For this reason, we have noted the physical characteristics of both traditional and online learning environments while at the same time considering the types of learning situations which each best supports. Thus, behaviourism or a transmissionist approach to learning cannot be overlooked as an essential element in TLEs. Likewise, OLEs can be used to support forms and aspects of behaviourist learning. However, this is not the theory of learning or approach that is most easily supported by this environment given its unstructured, uncontrolled, vast nature. The following table contrasts the two environments by considering, not only the physical characteristics, but, as well, the types of learning and teaching which they most easily support.

<b>Traditional learning environments</b>	<b>Online learning environments</b>
Support instructional approaches	Support constructivist approaches
Synchronous communication	Asynchronous & synch. communication
Linear, sequential pattern	Non-linear/hypertextual pattern
Structured by time	May operate independent of time
Highly structured and organized	Decentralized & unorganized, unstructured
Censored, controlled	Uncensored, uncontrolled
Closed environment	Open environment
Print/text-book bound	Characterized by sensory-vastness
Filter reality	Generate reality
Sameness and stability	Growth and change

Table 1.1 Comparison of traditional versus online learning environments.

While the trend may once have been to talk of “Brave New Worlds”, it would seem more appropriate to refer now instead to “Strange New Worlds”. As a learning environment, the Internet appears to have little in common with what is typically associated with school and education. The Microsoft tagline “*Where do you want to go today?*” epitomizes the unbounded or unlimited nature of the Internet. The classroom environment with its clearly delineated boundaries, both physical and non-physical, contrasts sharply with the comparative open nature of the “real world”. Yet, just as we can compare the bounded world of the classroom with that of the “real world”, so too can we compare the “real world” with the “virtual world”. In so doing, we are likely to find the “real world” to be bounded in comparison to the online learning environments of the Internet. In the online, virtual world, the absence of time, but more importantly, the absence of distance means that those who enter this world are almost unlimited in terms of the access afforded them: access to places, to people and to experiences that they could never have in their classroom or perhaps even in the town in which they live. It is indeed

global access and even more since the Internet can allow access to recesses otherwise often hidden. Online, a student may converse with a prison inmate, with a famous author. He/she may research a question from how to do a science experiment to how to build a bomb. While such examples are extreme, they nonetheless illustrate the open nature of the Internet. More importantly, the examples illustrate the enormous abyss which lies between the world of the classroom and that of OLEs.

Logan (1995) argues that such a difference between two environments is not a unique situation. However, as he aptly argues, this time, the mismatch is far more pronounced than in the past:

The current mismatch between the newer forms of information processing and the institutions designed for older forms is not historically unique. In every age and in every society that has undergone significant technological development and change, a mismatch between the new techniques and the old institutions has been a problem. Our era is no different except that the transition between the old technologies and the new ones has been more rapid and hence the mismatch has been greater. (p.214)

Teachers accustomed to a structured, bounded and teacher-centered, environment no doubt find themselves in a foreign landscape when using the Internet for learning. Their map no longer represents the territory. Using the Internet for learning involves or necessitates a shift in thinking and beliefs about learning and teaching. Becker (1991) argues that improving education through use of technology “will require teachers and administrators to modify their concepts of appropriate and inappropriate teaching behaviours, to reprioritize the value of different types of instructional content, and to change habits and assumptions that guide their classroom and school management strategies” (p.8). Technology based on constructivist theories cannot simply be assimilated into traditional classroom practices (Cognition & Technology Group at Vanderbilt, 1996). Moving from one environment to the other such as from the traditional, bounded classroom to an online learning environment is much more challenging when the theory of learning underlying the technology requires a transformation of existing classroom practices or when the map no longer represents the

territory.

At the same time, it is possible that the environment itself can have an impact on beliefs. Kagan (1992) speculates about how the learning environment actually reinforces and ingrains beliefs. She describes how beliefs grow out of a need to adapt to and survive in the particular and somewhat peculiar environment of the classroom:

A significant characteristic of classroom teaching is its many uncertainties. A teacher cannot continue to orchestrate instruction and maintain control in the highly unpredictable environment of the classroom without knowing whether things are going well; a teacher must be able to identify, label, solve, and evaluate the solutions to problems. Because there are no indisputable external guidelines, teachers create their own, in the form of a personal cohesive pedagogical system that they can support without reservation. In a landscape without bearings, teachers create and internalize their own maps. (p.80)

Kagan's theory highlights the role that the teacher's environment plays in formulating beliefs. If indeed one's environment affects one's beliefs, then, does changing the environment of the teacher provide a concomitant change in beliefs? What happens when Kagan's metaphorical landscape is altered? Do teachers formulate new maps? Do they change their beliefs? Is there a conflict between the environment and their beliefs?

In his discussion of "The Stranger", Schutz (1944) theorized from a sociological perspective about what happens when one's environment changes:

Strangeness and familiarity are not limited to the social field but are general categories of our interpretation of the world. If we encounter in our experience something previously unknown and which therefore stands out of the ordinary order of our knowledge, we begin a process of inquiry. We first define the new fact; we try to catch its meaning; we then transform step by step our general scheme of interpretation of the world in such a way that the strange fact and its meaning becomes compatible and consistent with all other facts of our experience and their meanings. (p.507)

This "scheme of interpretation" to which Schutz refers are similar to what Wehling and Charters (1969) refer to as representations, or cognitive maps, of the external world and to what Kagan terms a "personalized pedagogy" or "belief system". When confronted with uncharted territory, Schutz's stranger is forced to reconceptualize, to rethink existing

notions, to reinterpret and define new maps. When teachers move from the traditional landscape of the classroom to OLEs, they essentially become Schutz's stranger "who has to place everything in question" (Schutz, 1970). They are the "stranger in a strange land". The new patterns of the strange land are as Schutz describes "not a shelter, but a field of adventure, not a matter of course, but a questionable topic of investigation, not an instrument for disentangling problematic situations, but a problematic situation itself and one hard to master" (p. 93).

Teaching and learning assisted by emerging technologies may only represent a step forward in the history of education if teachers' practices take full advantage of the potential and possibilities of the technology. For this to happen, teachers must be able to shift their beliefs to accommodate new ways of learning, thinking, working, collaborating, sharing and building knowledge. They must be able to redesign their maps to fit the new territory. However, these beliefs must first be articulated and made explicit so that they can be questioned, understood and evaluated by the teachers themselves. This research thus represents a first step in assisting teachers to make their beliefs more explicit and in helping them evolve their teaching approaches.

Chapter 2 of this study focuses specifically on the evolution of approaches to teaching FSFL. The influence of learning theories in teaching languages is outlined from a historical perspective. As well, the chapter traces the evolution of the role played by technology and the interplay between technology use, learning theories, and approaches to FSFL teaching. As part of the evolution, a vision for the teaching and learning of FSFL in the 21<sup>st</sup> century is described. The vision relies on teaching and learning in OLEs using a constructivist approach. The study will aim to understand teachers' beliefs by interpreting them in relation to this evolution.

## **1.6 Research Questions**

Landscapes without bearings, strange lands, uncharted territory: these are metaphorical characteristics of online learning environments where teachers, as foreigners, must begin to define new maps to guide their way. This study provides

teachers of FSFL with the opportunity to talk about their experience in online learning environments. Through an exploration of their beliefs, it is hoped that insight may be gained into teachers' personal pedagogies, knowledge and theories that guide their practice and that form the philosophical basis for the approaches which they take to the teaching of FSFL using the Internet. The two questions which guided the research are as follows:

1. What are some of the beliefs of teachers of FSFL in relation to teaching and learning in online learning environments?
2. What do these beliefs reflect in terms of the evolution of approaches and use of technology in the teaching of FSFL?

The first research question is very broad and seeks to identify the range of different beliefs held by teachers. These beliefs represent teachers' personal knowledge and their implicit theories that serve as cognitive and affective maps which they have evolved and which guide them in their daily interactions in their environment. Research question 2 qualifies the beliefs according to a historical continuum from the end of the 19<sup>th</sup> century and into the 21<sup>st</sup> century. The second question aims to interpret these beliefs in relation to this conceptual and historical framework. Teachers' beliefs or implicit theories are thus interpreted in relation to the official theories of language learning specifically and in relation to theories of learning in general. Do teachers' beliefs reflect the earlier attempts at teaching languages when Grammar-Translation, the Direct Method or Audio-Lingualism represented popular approaches to the teaching of FSFL? Do the beliefs reflect a behaviourist approach or a constructivist approach? Do the beliefs reflect aspects of the vision for learning FSFL in the 21<sup>st</sup> century as outlined in Chapter 2? Do they represent an attempt to take full advantage of the potential of OLEs to transform the learning process?

### **1.7 Methodology: Overview**

The study relies on a variety of means to probe and profile the beliefs of teachers. The potential of the Internet as a tool for research is exploited by the present investigation which relies on an online discussion list and e-mail correspondence with some of the

discussion list participants. The study also includes use of a more traditional research technique, that of a mail-out, open-ended questionnaire and semi-structured interviews with some of the questionnaire participants. The data are collected, analyzed and interpreted in relation to the historical and conceptual framework outlined in Chapter 2 of this study.

The present research aims to understand the meanings which individuals in a particular context have evolved. Specifically, it seeks to understand some of the underlying beliefs or implicit theories of teachers. It attempts to make sense, to understand, to make more explicit, this underlying aspect of the teacher's complex world. The socially-constructed realities or worlds of teachers constitute the object of this study. The role of the researcher as ethnographer is to observe these multiple realities, to articulate, interpret and reconstruct them (McMillan & Schumacher, 1997). The methodology is described in detail in Chapter 4 of this study.

### **1.8 Rationale for the Study**

Pajares (1992) argues that the investigation of teachers' beliefs "should be a focus of educational research and can inform educational practice in ways that prevailing research agendas have not and cannot" (p.307). The research of Jakubowski and Tobin (1991) suggests that teachers' metaphors and beliefs not only influence what teachers do in the classroom, but that changes in these same metaphors and beliefs can result in changes in teachers' practices. Brousseau, Book and Byers (1988) affirm that knowledge gained through investigation of teachers' beliefs can provide insight for teacher education programs and instructional leaders. They argue that the first step toward understanding how to affect the process of schooling would be to understand the values and beliefs of those who drive those processes. Understanding teachers' beliefs and how they are impacted on by a change in context or environment is a necessary first step in bringing about positive change in teaching and learning.

As interest grows in use of the Internet for teaching and learning, we must ensure that teachers are able to fully capitalize on the potential that this new environment has to

offer for the learning of FSFL. Teachers can be assisted in this effort by professional development that builds on their existing beliefs and knowledge. However, both pre- and in- service efforts may well miss their mark if they are premised on assumptions inconsistent with teachers' beliefs and implicit theories. We must be assured that teaching represents a true innovation and evolution. Ideally, such teaching will not aim to "extend or replicate the classroom model" (Bates, 1996) but, instead, will dramatically transform it. Understanding teachers' beliefs about teaching and learning in OLEs will undoubtedly provide the type of insight needed in order to work effectively with teachers to assist them in evolving their beliefs.

### **1.9 Significance of the Study**

The study provides a significant contribution in terms of its scope. Three areas are linked and combined to provide insight into the complex interplay between online learning environments, the evolution of FSFL methods, and teachers' beliefs. While previous research may have explored teachers' beliefs and FSFL or teachers' beliefs and technology, this study links three different areas. As well, the scope of this study is significant because it focuses on a wide range of experiences in terms of the teachers who participated in the study. These teachers represent different grades, experiences and geographic areas. The approach represents an experiment with an alternate means of collecting data in general and, in particular, it represents an effective means of eliciting beliefs through conversation and discussion. In this sense, it represents innovative use of emerging technologies for research purposes and could serve as an example for other research designs.

The increased interest in cognitive psychology has resulted in a shift in research efforts away from the product and observable aspect of teaching to the cognitive process, i.e., to teacher thinking, attitudes and beliefs. Until now, much of the research on teachers' beliefs has focused on the areas of science and math education or on reading. These investigations have frequently been concerned with understanding how teacher beliefs impact on practice. The present investigation differs from these past studies in

several ways. The focus here is not only on teachers' beliefs about teaching and learning FSFL but on teaching and learning in online learning environments. Rather than considering how these beliefs impact on practice, the present investigation explores what happens to teachers' beliefs when they find themselves in an altered context or "strange land". The present study also differs from other studies of teachers' beliefs by its emphasis on the individual beliefs themselves as opposed to an emphasis on sets or systems of beliefs belonging to individuals. For example, some studies may focus on four or five individuals in order to profile the beliefs of each person. The present study focuses on the different types of beliefs themselves. Such a focus provides an opportunity to gain insight into the range of beliefs that exist among teachers and to understand the periods in the evolution of teaching which these beliefs reflect.

### **1.10 Limitations of the Study**

This study is limited to profiling the beliefs of teachers and to understanding their nature in relation to the conceptual and historical framework outlined in Chapter 2 of this study. The study is very broad and does not focus specifically on one area. This broad scope was necessary in order to provide an initial foray into an area which has, until now, not been studied. For this reason, the study did not focus specifically on one grade area such as primary or secondary or on one aspect of language learning such as writing or speaking. It did not focus on one program such as French Immersion or Core French or on one area such as Newfoundland. Nor did it focus on one aspect of online learning such as MUDs or MOOs. Thus the study is limited to a very general synopsis or overview of a broad topic.

The study aims to capture or profile a wide range of different beliefs, and in so doing, it has needed to include a large sample of teachers. The large selection does not, however, indicate an aim to provide data which might be generalized to a wider population. Instead, the onus is on the readers of this study to generalize the beliefs to their situation. The choice of participants is motivated, not by a concern for representativeness, but by a conceptual question. In order to understand teachers' beliefs

on this issue, we must see different instances of these beliefs, in different places and with different individuals.

The beliefs profiled in this study are those that teachers were able and/or willing to articulate or those which the researcher gleaned in collecting data. There are, no doubt, many beliefs that teachers did not articulate either because they did not have the vocabulary to do so, because the beliefs were not at a level of consciousness where teachers could recognize them, or because, simply, the teachers chose not to reveal them. There are other beliefs which teachers may hold in relation to teaching FSFL in online learning environments which they may not have had the opportunity to articulate in the context of this study. Although every effort was made in the data analysis to ensure the integrity of the beliefs which were expressed or uncovered, it was not possible to categorically verify that these beliefs were indeed truly held by the teacher. No attempt was made in the study to determine whether or not the beliefs were strongly or not strongly held. Not all experiences could be accounted for in the context of the investigation, nor could all topics be touched on. Thus, the beliefs profiled in the study are not inclusive of all the beliefs on teaching and learning FSFL in online learning environments held by the teachers in the study.

### **1.11 Definitions and Clarification of Terms**

#### ***Teachers***

For the purposes of this study, the focus is primarily on teachers at the classroom level - i.e., Kindergarten to grade 12. However, the term will also refer to individuals teaching at the preschool or the post-secondary level.

#### ***Beliefs***

A complex and inter-related system of personal and professional knowledge that serves as implicit theories and cognitive maps for experiencing and responding to reality. Beliefs rely on cognitive and affective components and are often tacitly held.

### ***French as a Second Language***

This term also includes French as a foreign language but does not include French as a first language. Reference will also be made to second languages in general particularly in the review of the literature. This reference to second languages will be considered as inclusive of French as a second and foreign language.

### ***Online Learning Environments***

Use of this term in this study will generally be synonymous with the Internet. The distinction between the two terms is that Online Learning Environments refers specifically to use of the Internet for the purposes of teaching and learning and includes e-mail, video-conferencing technologies, World Wide Web, discussion lists, Telnet, FTP, Gopher, Veronica, newsgroups, MUDs, MOOs, chat rooms, search engines, Real Audio, Shockwave, HTML, VRML and Java and other new and emerging online technologies, tools and systems.

### ***Mailing List/Discussion List***

Mailing lists are lists of email addresses held by a computer listserv which are used to forward messages to groups of people. Mailing lists are set up to discuss specific topics which interested people subscribe to. Correspondence is sent to the listserv which forwards the mail to the whole list. (Williams, 1997)

### ***Discussion***

A purposeful and systematic exchange of experiences, anecdotes, personal knowledge and implicit theories, by means of electronic, asynchronous, written communication by a group of teachers sharing a common interest in the teaching and learning of FSFL in online learning environments.

### ***Computer-Assisted Language Learning, CALL***

The use of computers to assist in second or foreign language instructional activities. It is CAI (Computer Assisted Instruction) applied to L2 learning and acquisition. (Merrill, Tolman, Christensen, Hammons, Vincent, & Reynolds, 1986)

### ***World Wide Web***

The World Wide Web is a set of software tools and standards that allows individuals to distribute and obtain information stored on the Internet. (Haughey & Anderson, 1998, p.26)

***The Internet***

The Internet is a network of networks formed by the connecting together of computers and computer networks around the world through telephone and high-speed transmission lines. (Ibid, p.12)

***Core French***

A program of instruction in which students study the various aspects of French language during a regularly scheduled time slot.

***French Immersion***

A program designed for non-French-speaking individuals in which French is the language of instruction in the classroom for all or some of the subject areas.

**1.12 Overview of the Study**

The inclusion of so many elements in this one study is evidence of the recognition that education is a process where many factors or elements interact and combine in curious and often complex ways. The data consist of individual and group ‘discussions’ with teachers as well as use of questionnaires. Teacher talk is privileged in this study as a means of making explicit the otherwise implicit and tacit beliefs of teachers. The discussions and questionnaires each focus on understanding how the different elements combine and interact. The interpretation of the data centres around understanding teachers' beliefs in relation to the conceptual and historical framework outlined in Chapter 2 of this study. The following paragraphs outline the organization of the study as a whole.

This first chapter presented the problem addressed by the study. The traditional environment of the classroom was compared and contrasted with online learning environments. One of the most important differences in the two environments relates to the reliance on differing learning theories. Whereas TLEs often support a teacher-centered, transmissionist style of learning, OLEs support a more learner-centered, constructivist approach to teaching and learning. Teachers' beliefs come largely from their experiences in the traditional learning environment. What happens when teachers' beliefs interact with the online learning environments? “Strangers in a strange land” is the analogy used to evoke and explain the experience of moving to a foreign environment.

This study provides teachers with the opportunity to articulate their experiences of being a stranger in a strange land, of adapting to a new environment. The study aims to profile a range of beliefs of teachers about working in OLEs.

The purpose of Chapter 2 is to provide background information on the evolution of approaches and of technology use in the teaching of FSFL which will serve as a historical and conceptual framework for the study in general. The chapter traces the influence of learning theories on practices and in the use of technology in the teaching of FSFL throughout the past century. A vision is outlined for teaching and learning FSFL in the 21<sup>st</sup> century. This vision is premised on use of OLEs and draws heavily on the theory of constructivism. It serves as a frame of reference for analyzing and interpreting teachers' beliefs.

Chapter 3 presents a review of the literature on the topic of teacher beliefs. Included in this review are studies and literature related to:

1. The nature of beliefs;
2. beliefs and change;
3. teachers' beliefs about teaching and learning;
4. teachers' beliefs about teaching and learning with technology;
5. teachers' beliefs about teaching and learning FSFL.

Various studies have contributed to our knowledge about teachers' beliefs on such topics as teaching FSFL and teaching with technology. These studies provide a useful starting point or framework from which to begin to build an understanding of teachers' beliefs about teaching and learning FSFL in online learning environments. Many of the studies included in the review aim to understand beliefs in relation to learning theories and, as such, present a perspective with which this study's data can be compared and understood.

Chapter 4 outlines the research methodology used to investigate the research questions. Eliciting beliefs and assuring the integrity of what is uncovered requires sophisticated and unobtrusive techniques that allow teachers to articulate what would be otherwise unconscious, implicit, tacit and unarticulated. Ensuring the integrity of such

teacher talk also requires a wholistic means of analysis that captures the interrelatedness and complexity of the construct specifically and of the teacher's world in general. The present investigation relies on an online discussion which took place over the period of September, 1998 to June, 1999 and included participation from teachers primarily in Canada and the U.S. as well as in Europe, Australia, Africa and South America. As well, data were collected by means of questionnaires which were distributed to teachers in Newfoundland and Labrador, Canada. Finally, dialoguing was conducted with 16 discussion list participants and with 5 of the teachers who completed the questionnaire in order to gain a more in-depth understanding of the beliefs.

Chapter 5 presents the findings in a descriptive format. Excerpts from the discussions and questionnaires are presented in order to illustrate teachers' beliefs. The chapter aims to present the data with a minimal amount of interpretation. Chapter 6 presents an interpretation of the findings. The aim of the interpretation is to provide an answer to research question 2. The beliefs are analyzed in relation to the evolution of teaching approaches, learning theories and technology use in second- and foreign-language education as outlined in Chapter 2. Chapter 7 groups the major findings into themes and moves beyond an interpretation of the findings in order to understand the implication of these findings for educational practice and research. A discussion is presented on methodological considerations. Recommendations are made for educational practice as well as for educational research.

### **1.13 Conclusion**

The conditions at the turn of the century are evolving in such a way as to encourage educators to reformulate goals, reconceptualize roles, redefine learning and teaching, and to rethink what they do. But none of these acts can be accomplished successfully without first reevaluating what they believe about goals, roles, learning and teaching. Schools are busy places where the key players often don't have much time to tend to important acts such as thinking about what they do and, more importantly, why they do it. Their behaviours have become automatic - dictated by years of practice, by

institutional conventions and, sometimes, by unquestioned, unscrutinized beliefs. Schools are about learning. Yet, how often do teachers have the opportunity to ask themselves: How do children learn best? What is learning? What is a teacher? The responses to these questions and to many others like them essentially become the blueprints for action, the maps that guide the teacher's way through days and years of classroom interaction with hundreds and perhaps thousands of children in the course of a career.

This study aims to get at the heart of teaching and learning. It looks behind the scenes and takes aim at the key actors - the teachers - for it is they who are the gatekeepers, who will ultimately determine much of the experiences to which students will be exposed within the confines of their schooling years. As such, this study provides intimate insight into hidden worlds, into the heart of teaching. The timing of this study is critical in the sense that it comes at a time when new technologies are beginning to impact on every aspect of life. Were this study conducted 40 years earlier when television represented the latest technological revolution, it would not have had the same impact. Whereas television had the power to improve teaching practices, OLEs have the potential to transform them. Whereas, 40 years ago, the educational community was immersed in a philosophy of behaviourism, today's community is on the verge of a possible paradigm shift to a philosophy of constructivism that reconceptualizes teaching and learning. More than ever today do we need to have insight into teachers' beliefs.

The teaching of FSFL has often been reflective of the prevailing social, educational and political trends. As such, it is unlikely to remain immune to the changes currently taking place in technology and in educational philosophy. Teachers will be affected either directly or indirectly. The emergence of new technologies combined with an interest in and understanding of constructivism provides a backdrop for a change in approaches to the teaching of FSFL. This study will provide insight into the dynamics of this change from the perspective of the key stakeholders - the teachers.

Constructivist philosophies would have us see the teacher as a facilitator. Other metaphors for the teacher might include that of the master, sage, guide, banker or

gardener. For the purposes of this study, it is useful for the reader to conceptualize the teacher as an explorer. The teacher is exploring new territories or new landscapes for learning- ones which are unknown, strange, without bearings, and unlike anything they have previously encountered. They have few reference points, few coordinates for their journey beyond the maps which they have used in the familiar territory of the traditional classroom. The following chapter describes the theories and thoughts of the last 100 years of second- and foreign- language education in order to understand what some of these reference points or coordinates might be. The remainder of this study then follows its own journey into the heart of teaching - into teachers' beliefs.

## **Chapter 2**

### **Landscapes for Learning:**

#### **Conceptual and Historical Framework**

Changes in theories of learning affect uses of technology, but new technologies also make new kinds of interactions possible and hence affect theories of learning. (Cognition & Technology Group at Vanderbilt, 1996)

#### **2.1 Introduction**

Through an analysis and synthesis of the literature, this chapter will provide a summary of the evolution of teaching methods and use of technology in FSFL from the end of the 19<sup>th</sup> century until the end of the 20<sup>th</sup> century with a vision for teaching and learning FSFL in the 21<sup>st</sup> century. The summary of the evolution of technology in the teaching of FSFL will illustrate the integral role which OLEs play in the vision. Both summaries focus on understanding and analyzing the influence of learning theories on the evolution. The summary is by no means exhaustive; rather it aims to highlight the prominent trends and ideas which marked specific periods and which allow us to trace the evolution. The second research question considered in this study asks what the beliefs reflect in terms of the evolution of approaches and use of technology in the teaching of FSFL. The historical and conceptual framework provided in this chapter will assist in understanding, interpreting and analyzing the research findings in order to explore answers to this question.

#### **2.2 The Evolution of Second- and Foreign- Language Teaching**

##### **2.2.1 Introduction**

In his treatment of the historical developments in language pedagogy, Stern (1992, p.6) isolates three ways in which language pedagogy has aimed to renew and improve itself:

1. Innovation through change in teaching methods;

2. Innovation through language-related sciences and research;
3. Technological innovation.

Stern's perspective is a useful one for the purposes of this review since it encompasses both the evolution of language methods, theory and the use of technology. Any discussion of the evolution of methods in language pedagogy will, by necessity, incorporate a discussion of linguistic and learning theory. While changes in methods reflected to a large degree social, economic, political, or educational circumstances, they were also significantly impacted on by changes in language theories and in new psychological perspectives on language learning (Stern, 1983). The use of technology in language learning has evolved somewhat, although not entirely independent of linguistic and learning theory. For the purposes of this review it will be more practical to provide a separate discussion of the evolution of technology use in second- and foreign- language teaching.

The evolution of second- and foreign- language teaching has been clearly chronicled and delineated by researchers and theorists and has been largely discussed and debated in a 'methods' framework. Stern (1983) describes a method as a "theory of language teaching" or school of thought resulting "from practical and theoretical discussions in a given historical context" (p. 452). Although new methods or approaches signify a certain 'break from the old', they nonetheless maintain a link with the past by incorporating positive aspects of previous paradigms (Brown, 1980). It is not surprising then, that as Stern (1992) observed, "one of the main features of the development of language pedagogy has been the continuous attempt to renew language teaching through changes in teaching method" (p. 6). These attempts at renewal begin essentially during the final decades of the 19<sup>th</sup> century at which time the Grammar-Translation Method came under fire.

### **2.2.2 The 19<sup>th</sup> Century**

During the nineteenth century, the Grammar-Translation Method with its emphasis on the transmission of structural rules and analysis of form (Brown, 1980)

served as the principal method of teaching modern and classical languages in schools. As the name suggests, the characterizing feature of the method was its emphasis on translation into and from the target language. The goal of studying a foreign language was to learn the language so as to be able to read its literature. Grammar was taught deductively with the student's native language being the medium of instruction and with a strong emphasis on accuracy (Richards & Rodgers, 1986). Little emphasis on speaking or listening to the language was encouraged. Instead, the "book-oriented method" reflected an intellectual activity of mental discipline involving reading and memorization of rules and facts (Stern, 1983). Brown (1980) argues that the theoretical underpinnings of the method were more pedagogical than linguistic or psychological with limited time and resources in schools favouring such an approach. Richards and Rodgers (1986) noted that it was a method without theory or without any literature which might offer a rationale or justification for it. Not surprising then, the Grammar-Translation Method had a negative reputation in the annals of language teaching:

In the final decades of the nineteenth century, grammar translation was attacked as a cold and lifeless approach to language teaching, and it was blamed for the failure of foreign language teaching. The majority of language teaching reforms in the late nineteenth century and throughout the first half of the twentieth developed in opposition to grammar-translation. (Stern, 1983, p. 454)

### **2.2.3 The Early 20<sup>th</sup> Century**

A reform movement at the turn of the century resulted in the development of principles of foreign-language teaching which provided the theoretical foundation for a principled approach to the study of language teaching and learning. The interest in developing principles grew out of naturalistic principles of first-language acquisition and reflected the beginnings of the discipline of applied linguistics (Richards & Rodgers, 1986). The principles emphasized the importance of listening and speaking the foreign language. Meaningful contexts for learning, inductive teaching of grammar and avoidance of translation were some of the principles put forth (Ibid.). These principles provided the foundation for the Direct Method. The new method which emphasized

communication in the target language arose out of the need for more effective language learning “in a new world of industry and international trade and travel” (Stern, 1983, p.456).

While the method enjoyed popularity in Europe in the early part of the century, it proved less effective in public education in North America where opportunities for oral practice and native-speaking teachers were less common. An American study begun in 1923 in the U.S. concluded that teaching conversation skills was impractical given time restrictions in schools and given the perceived irrelevance of foreign conversation skills in the U.S. (Richards & Rodgers, 1986). The results of the study, published as The Coleman Report (Coleman, 1929) advocated a reading approach to foreign-language learning. Comprehension of texts from books with short reading passages with vocabulary lists, silent reading and discussion of the passage in English served as the basis for the approach (Darian, 1972).

During World War II, the need for soldiers to become orally proficient in the language of their enemies and allies refocused once again the efforts on oral skills. Since conversational proficiency was not the goal of foreign-language courses in the U.S., a new approach or training program was necessary. Thus the Army Specialized Training Program or “Army Method” was developed. The method, however, did not rely on a specific theoretical base:

The “methodology” of the Army Method, like the direct method, derived from the intensity of contact with the target language rather than from any well-developed methodological basis. It was a program innovative mainly in terms of the procedures used and the intensity of teaching rather than in terms of its underlying theory. (Richards & Rodgers, 1986, p.45)

#### **2.2.4 The Middle of the 20<sup>th</sup> Century**

The launching of the first Russian satellite in 1957 resulted in an increased interest in and funding for foreign-language study in the United States. Language teaching specialists began developing a method that would be suitable for U.S. colleges and classrooms. They drew on the Army Method, structural linguistic theory and behavioural

psychology to develop what was termed “the Audio-lingual Method” (Richards & Rodgers, 1986). Brown (1980) describes how prominent theories in linguistics and psychology influenced practice at that time:

Around the middle of the century the unique advances of both linguistics and psychology had a profound and lasting effect on language teaching methodology. Structural linguistics had provided tools for dissecting language into its smallest parts and for contrasting two languages “scientifically”, and behavioral psychology had provided a model for teaching virtually any behavior by operant conditioning. The two theoretical stances merged perfectly to give language teachers a method firmly grounded in theory: the Audio-lingual Method (ALM). (p.242)

Behavioral psychologist B.F. Skinner published his influential book *Verbal Behavior* in 1957 in which he elaborated a theory of learning applicable to language learning. Skinner’s elements of stimulus, response and reinforcement were easily adapted to language learning:

A set of phrases or sentences is given to which the learner has to make the same response, or on which he has to perform the same manipulation ... the student is encouraged to produce repetitively a suitable sound in his own language and is rewarded each time there is a phonetic variation in the direction of the foreign language sound until gradually only productions of the new sounds are rewarded. (McDonough, 1981, pp. 14-15)

The new method, founded on both behavioral psychology and structural linguistics emphasized habit formation, repetitive drills, avoidance of errors, mimicry and memorization (Stern, 1983) and depended on a central and active role for the teacher (Richards & Rodgers, 1986). Given that an important tenet of structural linguistics is that the primary medium of a language is oral (Ibid.), oral proficiency, and not the study of grammar or literature, was the primary goal with the method. Reading and writing were introduced only after students practiced the structures orally. The tightly-structured approach of the dialogues and drills attempted to minimize the potential for errors. The learner was not encouraged to initiate interaction because it might result in a mistake. Lack of understanding of meaning was less important than the ability to effectively imitate, memorize and respond to model dialogues; therefore, grammatical explanation

was minimized (Brooks, 1964).

The behavioural view of both language and language learning dominated foreign-language teaching methodology for several decades resulting in classroom emphasis of controlled practice with careful reinforcement (Brown, 1980). However, by the end of the sixties, Audio-Lingualism had become what Stern refers to as “the whipping boy for all that was wrong with language teaching” (p. 465). Not only did practical results of the approach fall short of expectations, but changes in linguistic theory in the 1960's challenged the structural view of language as well as the behaviourist view of language learning. Chomsky's (1959) theory of transformational grammar argued that language was not a process of habit formation. According to Chomsky (1966), innovation and the formation of new sentences and patterns allow for the generation or creation of new utterances from the learner's underlying knowledge of abstract rules. Chomsky's references to “innate aspects of the mind” contrasted and conflicted with Skinner's emphasis on observable behaviours. “Suddenly the whole audio-lingual paradigm was called into question: pattern practice, drilling, memorization” (Richards & Rodgers, 1986, p.60). The dissatisfaction with the Audio-Lingual Method was one of a number of factors that would set the stage for yet another shift in approaches to the teaching of second and foreign languages.

### **2.2.5 The Seventies and Eighties**

Towards the end of the sixties and early in the seventies, the general abstract, structural view of language was replaced instead by a semantic and social emphasis in language (Stern, 1992). The growth of psycho-linguistics, socio-linguistics and an interest in semantics had important implications for the teaching of languages in that they highlighted the importance of real-world language use. During the early seventies, work by the American sociologist Hymes resulted in the concept of communicative competence. Hymes (1968) argued that a sentence must not only be grammatically correct or competent, but that it must also be appropriate in relation to the context in which it is used. He openly criticized Chomsky's emphasis on linguistic competence by arguing that

it “posits ideal objects in abstraction from socio-cultural features that might enter into their description” (p.7). Hymes’ theory attempted to define what an individual needs to know in order to be communicatively competent in a speech community.

The humanistic emphasis in pedagogy that occurred in the United States during the 1970's encouraged more individualization of instruction and more group work. The introduction and growth of French-Immersion programs in Canada during the seventies and eighties focused pedagogical attention on the importance of meaning and communication in second-language learning. Alternate methods such as the Silent Way, Suggestopaedia, and Community Language Learning received receptive responses in the seventies and focused attention away from the pattern and drill approach and towards communication. The emphasis in the French-Immersion classroom on non-language content and on real communication as well as the perceived success of the approach no doubt raised awareness of the importance in language learning of meaningful communicative interaction, purposive behavior, authentic language and negotiation of social meaning.

An “explosion of research on second language” in the seventies recognized the importance of the individual's construction of language thus raising questions about the role played in language learning by the learner's motivations, perceptions and initiative (Stern, 1992). Research in language learning, particularly that which contrasted first and second-language learning, led to a search for new methods. The work of the American applied linguist Krashen (1978) and his distinction between acquisition versus learning provided a theoretical foundation from which to understand the important role of communication in second-language learning. According to Krashen, second-language acquisition is analogous to the way in which a child would acquire his/her first language. The concept implies that languages can be learned effectively without formal study of structure and form.

From these changes grew a new approach to language teaching in the seventies termed the Communicative Approach or Communicative Language Teaching (CLT). Finnocchario and Brumfit, (1983) have compared the Audio-Lingual Method and

Communicative Language Teaching by contrasting their characteristics as follows:

<b>Audio-Lingual Method</b>	<b>Communicative Language Teaching</b>
Lang. learning involves structures	Lang. learning involves communicating
Emphasis on structure and form	Emphasis on meaning
Aim is linguistic competence	Aim is communicative competence
Errors must be prevented at all costs	Errors are part of language learning
Teachers must specify what language the student will use	Teachers cannot know what language the student will use
Students must interact with the language	Students must interact with people
Accuracy is a primary goal	Fluency is a primary goal
Language is habit	Language is creation
Teachers control the learners	Teachers assist the learner

Table 2.1 Comparison of the Audio Lingual Method and Communicative Language Teaching

Richards and Rodgers (1986) described other significant characteristics of this new approach including its emphasis on the use of authentic, “from life” materials and language-based realia such as magazines, newspapers and graphic and visual sources around which communicative activities might be constructed. In terms of the type of communicative activities in which students might engage, the authors include role plays, simulations as well as a variety of games. A tolerance for errors means that learners are not being constantly corrected. Instead, errors are seen as a normal phenomenon in the communicative process (Littlewood, 1981). Interaction is an important feature of the communicative classroom. Through grouping, pairing, and cooperative relationships, students have the opportunity to express their own individuality (Ibid.).

In relation to the respective roles of teacher and student, Richards and Rodgers (1986) argue that Communicative Language Teaching “often requires teachers to acquire less teacher-centred classroom management skills” (p.78). Teachers are responsible for

responding to and for monitoring and encouraging the language learner's needs. Their role is to organize the classroom as a setting for communication. Their role is not error suppression and correction but that of a teacher-counselor who exemplifies an effective communicator (Richards & Rodgers, 1986). Littlewood (1981) describes the role of the teacher in CLT as that of a “facilitator of learning”, a consultant, advisor, coordinator of activities, classroom manager, co-communicator, “human among humans” who “steps out of his didactic role” (p. 94).

Communicative Language Teaching with its emphasis on meaning and communication and its learner-centred approach has served as the dominant approach to language teaching since the demise of the Audio-Lingual Method. Many language teaching methodologists subscribe more or less consciously to one or other aspects of communicative teaching (Stern, 1992). The approach incorporates many of the characteristics of the other methods which preceded it while at the same time managing to avoid the “narrowness and dogmatism of the method concept” (Ibid.). As a result, it has the potential of making a more lasting contribution to language teaching than the Direct Method, Grammar-Translation or the Audio-Lingual Method.

Yet, despite the apparent popularity of CLT and, despite its being an improvement over preceding innovations, it cannot be seen as a panacea for the problems that have been faced by language teachers. Stern (1992) explains:

As for the communicative approach, the reliance on a single overriding concept, 'communication', is a disadvantage which prevents communicative language teaching from being entirely satisfactory as a theoretical framework. In order to account for all varieties and aspects of language teaching we either stretch the concept of communication so much that it loses any distinctive meaning, or we accept its limitations and then find ourselves in the predicament of the 'method' solution: an excessive emphasis on a single concept (p. 14).

Stern thus dismisses CLT as a suitable theoretical framework for the teaching of a second language. Yet no other approach, method or framework has evolved to replace it. Must we assume that CLT represents the final stage in the process of evolution of language teaching? If past trends are an indication of present and future possibilities, then we must

assume that practices will continue to evolve as they have always done. Past evolutions have reflected the social, economic, political, or educational circumstances as well as the language theories and psychological perspectives on language learning of the period. How might the conditions of the 21<sup>st</sup> century impact on the approach to language teaching? What factors or conditions are most likely to influence approaches? What theories of psychology and of learning are most significant for learning in the 21<sup>st</sup> century and are thus significant in terms of the evolution of second language learning? What social, economic or educational practices might influence the evolution? The following sections of this chapter aim to consider these questions and to predict the future evolution of approaches to the teaching and learning FSFL.

### **2.2.6 A New Era of Language Learning**

Many educators, researchers and writers have already begun to evolve visions for learning in the 21<sup>st</sup> century while those interested in language learning are beginning to describe a new era of language learning. In terms of learning in general, Henchey et al. (1996) have outlined a vision which is based on the views of organizations, scholars and research centres from around the North American continent and proposes to take all learners into the 21<sup>st</sup> century. The vision is articulated in stark contrast to the traditional approach to education or the instructional paradigm. It is first and foremost a learner-centered education that is driven by the “knowledge, skills and attitudes” of the student and which is characterized by “personal control of learning by students” (Ibid.). Under this paradigm, students become “active discoverers and constructors of their own knowledge”. Knowledge construction, communities of learners, individual and collective discovery and problem solving, holistic learning: these will be important qualifiers for education in the 21<sup>st</sup> century. This new paradigm for education contrasts boldly with the traditional paradigm. The following table contrasts the two paradigms or the conventional and reform approaches to education:

<b>Conventional Instruction</b>	<b>Reform Instruction</b>
Teacher-directed	Student exploration
Didactic teaching	Interactive modes of instruction
Short blocks of instruction on a single subject	Extended blocks of authentic and multi-disciplinary work
Individual work	Collaborative work
Teacher as knowledge dispenser	Teacher as facilitator
Ability groupings	Heterogeneous groupings
Assessment of fact, knowledge and discrete skills	Performance-based assessment

Table 2.2 Comparison of conventional and reform approaches to instruction  
(Means, Blando, Olson, Middleton, Morocco, Remz & Zorfass, 1993)

The emphasis in the new era of language learning is on construction as opposed to transmission of knowledge. While the dominant psychology of the preceding era was that of behaviourism, constructivist psychology or philosophy has emerged as the alternative to the “instructional paradigm” and the behaviourist approach to education. Fosnot (1996) explains that, although constructivism is not a theory of teaching, it suggests taking a radically different approach to instruction from that used in most schools. She summarizes the constructivist approach as follows:

... a constructivist view of learning suggests an approach to teaching that gives learners the opportunity for concrete, contextually meaningful experience through which they can search for patterns, raise their own questions, and construct their own models, concepts, and strategies. The classroom in this model is seen as a mini-society, a community of learners engaged in activity, discourse and reflection. (p. ix)

The constructivist view argues that knowledge and reality do not have an objective or absolute value or, at the least, that we have no way of knowing this reality. Von Glasersfeld (1995) indicates in relation to the concept of reality: “It is made up of the

network of things and relationships that we rely on in our living, and on which, we believe, others rely on, too” (p.7). The knower interprets and constructs a reality based on his experiences and interactions with his environment. Rather than thinking of truth in terms of a match to reality, von Glasersfeld focuses instead on the notion of viability: “To the constructivist, concepts, models, theories, and so on are viable if they prove adequate in the contexts in which they were created” (p.7).

Such a conception of knowledge leads thus to a conception of learning that contrasts sharply with the behaviourist view. Learning is no longer a stimulus-response phenomenon. Instead, it requires self-regulation and the building of conceptual structures through reflection and abstraction (von Glasersfeld, 1995). According to von Glasersfeld (1987), learning is a process of constructing meaningful representations, of making sense of one's experiential world. The focus of concern is not just the learner's cognitions, but the learner's cognitions, beliefs, and conceptions of knowledge (Ernest, 1995). It is the realities of others along with our own realities that we strive to understand, but we can never take any of these realities as fixed (Ernest, 1995).

Based on this view of learning, the teacher's role is transformed into that of a coach and analyzer of the strategies used to solve problems (Jonassen, 1991). Von Glasersfeld, 1995) describes the role of the constructivist teacher as that of a “midwife in the birth of understanding” whose job it is, not to dispense knowledge, but to provide students with opportunities and incentives to build it up. Teachers serve as “guides”, and learners as “sense makers” (Mayer, 1996). They are coordinators, facilitators, resource advisors, tutors or coaches (Gergen, 1995). Most importantly, teachers themselves become learners along with students, as teaching becomes a learning process for the teacher (Driver, Aasoko, Leach, Mortimer & Scott, 1994).

Where behaviorism emphasizes observable, external behaviours and, as such, avoids reference to meaning, representation and thought, constructivism takes a more cognitive approach. This subtle difference has profound implications for all aspects of a theory of learning. The way in which knowledge is conceived and acquired, the types of knowledge, skills and activities emphasized, the role of the learner and the teacher,

how goals are established: all of these factors are articulated differently in the constructivist perspective. Within constructivism itself, authors, researchers and theorists articulate differently the constructivist perspective by emphasizing different components. The following principles of constructivism are some which have been commonly articulated by writers, researchers and educators. Constructivist learning environments are those that:

- emphasize the process and not the product (von Glasersfeld, 1987);
- stress conceptual interrelatedness, providing multiple representations or perspectives on the content (Jonassen, 1991) and allow for multiple modes of representation (Honebein, 1996);
- negotiate instructional goals and objectives (Jonassen, 1991);
- make evaluation serve as a self-analysis tool (Ibid.);
- represent the natural complexity of the real world (Jonassen, 1994);
- focus on knowledge construction, not reproduction (Ibid.);
- present authentic tasks (contextualizing rather than abstracting instruction) (Ibid.);
- provide real-world, case-based learning environments, rather than pre-determined instructional sequences (Ibid.);
- enable context- and content- dependent knowledge construction (Ibid.);
- support collaborative construction of knowledge through social negotiation (Ibid.);
- attend to students' prior and emerging knowledge (Ernest, 1995; von Glasersfeld 1989);
- create experiences that challenge students' prior conceptions and knowledge (Savery & Duffy, 1995);

- embed learning in a rich, authentic problem-solving environment (Wilson & Cole 1991);
- provide for learner control (Ibid.); use errors as a mechanism to provide feedback on learners' understanding (Ibid.);
- pay attention to meta-cognition and strategic self-regulation by learners (Ernest, 1995);
- emphasize the importance of goals for the learner, and the dichotomy between learner and teacher goals (Ibid.);
- encourage ownership and voice in the learning process (Honebein, 1996);
- embed learning in social experience (Ibid.);
- encourage self-awareness in the knowledge construction process (Honebein, 1996).

These characteristics of constructivist learning have been echoed by many writers, appear frequently in the literature on education reform and are frequently discussed in relation to science and mathematics' education. Williams and Burden (1997) consider how a constructivist approach applies to language learning. They use a social-interactionist framework which they describe as a "much-needed theoretical underpinning to a communicative approach to language teaching, where it is maintained that we learn a language through using the language to interact meaningfully with other people" (p.39). They describe learning languages as a process of making sense of the world within a social context and through social interactions where the "personal constructions and subjective realities of teacher and pupil" converge:

As we see it, babies are born into social worlds, come to develop a concept of self as a result of their interactions with others, and increasingly employ language to make sense of that social world and to help them play an effective part within it. Thus, an understanding of the social factors which play a part in our increasing competence as language users is essential for all language teachers. (p.3)

The authors outline ten basic propositions which they consider "crucial" for

language teachers and which serve as a guide for teaching and learning languages from a constructivist perspective in the 21<sup>st</sup> century.

1. There is a difference between learning and education which implies that in order to be of value, a learning experience should contribute to a person's whole education as well as to their learning of an aspect of the language.
2. Learners learn what is meaningful to them so that whatever language input is presented to them, we cannot predict what each individual will learn or how the learner's language system will develop. Teachers must therefore have a sound grasp of what their learners see as important and meaningful.
3. Learners learn in ways that are meaningful to them which means that teachers will need to provide a variety of language learning activities which allow for different learning styles and individual preferences and personalities.
4. Learners learn better if they feel in control of what they are learning: learners need to be encouraged to talk about their aims and set goals for themselves regarding learning the language.
5. Learning is closely linked to how people feel about themselves. The individual's self-concept as a language learner will strongly influence the way in which he/she learns.
6. Learning takes place in a social context through interaction with other people. The nature of interaction in the target language will influence the quality of learning that language thus teachers need to be aware of the interactions that occur in the classroom.
7. What teachers do in the classroom will reflect their own beliefs and attitudes. Whatever methodology is used, it is the beliefs of teachers that will influence what goes on in the classroom.
8. There is a significant role for the teacher as mediator in the language classroom. The teacher fosters the right climate for individual respect, for confidence building, for appropriate learning strategies and for learner autonomy.
9. Learning tasks represent an interface between teachers and learners. Teachers' choice of learning activities reflect their beliefs

and values and learners will interpret these activities in ways that are meaningful to them.

10. Learning is influenced by the situation in which it occurs. The broader social, educational and political context within which language learning experiences occur as well as the cultural background of the learners will influence the learning that takes place. (p.204)

These ten propositions provide us with ways in which to conceptualize language learning and teaching from a constructivist perspective. Certainly the focal point in their propositions is the position of the learner at the centre of the learning process. Individual meaning, individualized learning contexts, learner control and goals, self-concept, self-awareness: these elements all play a pivotal role in the learning process. The emphasis on the social context for learning highlights the social-constructivist underpinning in their approach. The contexts and situations in which language learning occurs are portrayed as instrumental in determining the learning which takes place. As well, it is the interaction with others who are a part of the situation or context that plays a major role in determining the success of the learning experience. The role of the teacher is also central in their approach. The role is described as one in which the teacher is acutely aware of and attuned to the needs of the learner, to the context for learning and, as well, to the teacher's own beliefs about learning and languages.

Pusak and Otto (1997) provide a description of language learning which fits well with constructivist principles as well as with the propositions of Williams and Burden. They describe a "new era" of language learning characterized by the following:

- Emphasizes process rather than product;
- emphasizes function over form;
- uses a holistic approach;
- develops communicative competency;
- develops cross-cultural insights and strategies for effective communication with other peoples;
- uses authentic materials and provides experiences for all levels of

language learning;

- relies on performance-based assessment;
- values collaborative group work;
- sees students as lifelong learners;
- uses a broad language curriculum;
- favours development of critical thinking skills;
- operates in a multi-disciplinary context;
- promotes student-directed, student-centered learning;
- accommodates different learner styles and strategies.

Many of these characteristics of language learning described by Pusak and Otto could be applied to learning in other subject areas. Life-long learning, collaborative learning, critical thinking skills, performance-based assessment, student-centered learning, accommodation of different styles, focus on strategies, multi-disciplinary contexts, a holistic approach and the emphasis on process: these elements represent a general emphasis which can be given to teaching and learning in general. The American Psychological Association in its listing of principles for learner-centered education for the 21<sup>st</sup> century (1995) echoes the same elements as Pusak and Otto, as Williams and Burden and, in general, of constructivist learning. Its principles emphasize the importance of the social contexts for learning, knowledge construction, higher-order strategies and critical thinking, self-awareness and beliefs, authentic tasks, and the importance of the context for learning to mention but a few of the principles.

The principles of learning as articulated by Pusak and Otto, Williams and Burden, the American Psychological Association and, most importantly, by constructivism, provide the basis for a new era of language learning. Replacing the behaviorist framework which has guided language teaching for much of the last century is a highly student-centered approach to learning - that of constructivism and more specifically social-constructivism as described by Williams and Burden (1997). While Communicative Language Teaching presents a seemingly viable approach, it lacks any

grounding in educational theory. Many aspects of CLT can be related to constructivism but the approach is nothing more than that - an approach. As Stern (1983) argues, what is needed is not a method or approach but a more deliberate interpretation of language teaching in terms of educational theory. Constructivism offers to language teaching a basis from which to derive approaches and methods.

The evolution of language learning from the early days of the behaviourist approach and now possibly to a constructivist approach parallels the evolution of technology use in language teaching. As we shall see in the next section which looks at the evolution of technology use in teaching languages, behaviourism has dominated the CALL landscape since its beginnings. However, technology use is now slowly beginning to reflect constructivist principles. Pusak and Otto's description of the new era of language learning is predicated on the use of technology - specifically multimedia. Technology is also included as an essential element or catalyst in much of the literature on reform. It will no doubt play a pivotal role in all aspects of life and learning in the new millennium. The aim of this next section is therefore to describe the role technology has played in second-language teaching during the last century. The pattern of use, the development and general evolution of the use of technology use did not evolve independently of or even parallel to language and learning theories. Many factors - some social, some educational, some theoretical, combined to provide the conditions for change and for the implementation of particular techniques and use of certain equipment. The following section will give consideration to these factors in order to provide a comprehensive picture of the evolution of technology use during the past century and into the 21<sup>st</sup> century.

## **2.3 The Evolution of use of Technology in Second-Language Teaching**

### **2.3.1 Introduction**

The literature on the use of technology and, more specifically, computers in language learning, has centered largely around discussions and debates of pedagogical merits of technological devices (Stern, 1983). Approaches, typologies, phases,

methods: all have served as focal points for organizing the past 50 years (1950-2000) of technology use in language learning. In her discussion of the role of the computer in language teaching, Garrett (1991) cautions against thinking of it in terms of a method. Instead she argues that it is “a medium or an environment in which a wide variety of methods, approaches or pedagogical philosophies may be implemented” (p.75). Grammar-translation activities, audio-lingual drills, or cognitive analysis of language, or a communicative syllabus: any of these, according to Garrett can comprise Computer-Assisted Language Learning (CALL).

Indeed, it is the way the computer is used and the context in which it is used that determines the efficacy (Chiquito, Meskill, & Renjilian-Burgy, 1997). When we think about computer use, we must beware of technocentric thinking or “the tendency to give centrality to a technical object such as a computer” (Papert, 1987, p.23). For the purposes of this review therefore, it is the approach that has been taken to the use of technology in language learning that will serve as the organizing factor. What has been the teacher's role? What degree of control did the learner exert in relation to the program being used? What was the view of error-correction underlying the program? These are some of the issues that will be explored in this review of technology use from the behaviouristic language laboratory of the 1960's to the constructivist learning environments of the Internet at the end of the nineties.

### **2.3.2 The Language Laboratory**

By the 1960's, the industrial production of the magnetic tape recorder made possible the language laboratory. Teachers using the then popular Audio-Lingual Method could rely on this new technology to model and reinforce student verbal responses and “to leave to the lab all of the drudgery of drilling and pattern and keep for themselves the interesting aspects of instruction” (Harding & Rodgers, 1985, p.23). Thus, the language lab was considered a “major breakthrough in language teaching methodology because of its potential to take the boredom out of the classroom” (Ibid.). Stern (1992) remarked: “Technology became a central feature of the new audio-lingual method and the language

laboratory raised hopes of a new era” (p.10). Likewise, Underwood (1989) commented: “Early proponents of the language lab proclaimed noisily that these machines would prove to be the ultimate teacher’s aid - a tireless drillmaster, a perfect pronunciation model, and a way to free the teacher for more intellectual pursuits in the classroom” (p.71).

In spite of the optimism surrounding this new technological innovation, the language laboratory is today seen by many “as an unfortunate venture that resulted in a loss of credibility for language education and a growing suspicion among teachers about the value of mediated language teaching in general” (Pederson, 1987, p.101). In her brief review of the literature from 1959-62, Pederson highlights the criticisms of the medium which point largely to the lack of adequate research available at the time to answer teachers’ questions, to provide direction, to enable the development of appropriate materials, and, especially, to maximize the potential of the tool in order to use it to enhance language learning. With the demise of the Audio-Lingual Method and the increased interest in Communicative Language Teaching, laboratory use appeared less and less relevant to the goals of language teaching: “With a more active and communicative classroom, the work in the laboratory seemed dull and irrelevant” (Rivers, 1990, p.274).

### **2.3.3 Behavioristic CALL**

Technology use tends to mirror existing practices and “whenever a new medium comes in,” says McLuhan, “it takes its initial content from the old” (Sprecher, 1987, p.14). McLuhan’s (1964) “rearview mirror” phenomenon helps to explain why the first uses of computers in language learning were designed on the textbook and language lab paradigm. Chiquito, Meskill and Renjilian-Burgy (1997) describe the early phase of CALL as an attempt to “transfer existing foreign language textbooks to computer-based applications. Students could then essentially use the computer to turn pages of the textbook, fill in the blanks in workbook drills, and choose multiple-choice answers to questions” (p.72). As was the case with the language lab, this phase of CALL relied on its ability to simply do more efficiently many of the teacher’s classroom tasks such as

drilling and patterning. According to the typology of Maddux, Johnson, and Willis (1997) this type of computer use would be characterized as a Type I application. Unlike Type II applications which aim to make available new ways of teaching, Type I applications simply aim to render existing practices more efficient.

The influence of the language lab on the initial uses of CALL included a reliance on a behavioral philosophy of learning. Thus the first phase of use of computers in language teaching (the sixties and seventies) can be referred to as Behavioristic CALL (Warschauer, 1996a) or Instructional CALL (Wyatt, 1987). Backer (1995) provides a summary of this approach to computer-assisted language learning:

Chronologically, the first trend in CALL (originally called CAI -Computer Assisted Instruction) was an electronic extension of “programed learning” or “programed instruction” (PL and PI, respectively) based on the behaviorist theories of Skinner and Bloomfield. According to these theories, all learning could be broken down into small “frames” and the learner could be drilled and evaluated in each frame until mastery. The teacher then brought the student to the next frame. In the computerized version, the progress of the student could be monitored and guided through “branching”. Proficient students could automatically be sent ahead, while slower students could be routed to remedial lessons. According to Audio-Lingual and Cognitive Code methodologies, a major focus of language teaching was grammatical structures through drill and practice. Thus, the earliest attempts at computer-assisted language instruction, first appearing at some large universities in the late 1950's, stressed learning grammatical structures through electronic PI. (p.5)

This first phase was conceived in the fifties and implemented in the sixties and seventies (Warschauer, 1996a). Numerous theorists have provided typologies of the phases of and approaches to CALL. Wyatt (1987), in reference to the teaching of English as a second language, proposes a typology that distinguishes three approaches to or phases of CALL: instructional, collaborative and facilitative. According to Wyatt, Instructional CALL software corresponds to the first phase and can be identified with the Audio-Lingual Method. Thus early Instructional CALL shared many features with behaviourist teaching methodologies (Backer, 1995). Wyatt describes Instructional CALL as follows:

- Materials are presented in a highly-structured, predetermined manner.
- Repetitive language drills and practice are the main substance.
- Students are passive responders, not initiators.
- The computer functions as an authoritative instructor.
- A detailed set of high- and low-level learning objectives is provided.
- Learning paths are predetermined.
- The computer instructs the student; students learn from the computer.

Hubbard (1987) describes the behaviorist approach to CALL as one which presents vocabulary and structure appropriate to the learner's level through pattern reinforcement. It aims to maintain the learner's attention to the task and provides sufficient material for mastery and over-learning to occur. An essential premise underlying the approach is that of positive and negative reinforcement. Behavioristic CALL is designed to promote student mastery of a body of rules by indicating to the learner whether or not the language they produced matched that stored in the computer's memory (Garrett, 1987). Unlike communicative approaches which clearly downplay explicit error correction (Schulz, 1996), Behavioristic CALL relies on it. The "wrong-try-again" model thus requires the learner to input the correct answer before proceeding, provides the learner with positive feedback for correct answers and does not accept errors as the correct answer (Hubbard, 1987).

Picard and Braun's (1987) descriptors of the didactic approach echo many of the characteristics of Behavioristic CALL. Such an approach typically is teacher-centered; determines the learning path; verifies what the student has learned and proposes reinforcing exercises; transmits knowledge and corrects errors. A didactic approach placed the computer in the role of electronic drill master (Backer, 1995), computer-as-tutor (Taylor, 1980) or computer-as-magister (Higgins, 1986). In this role,

the computer initiates and controls procedures and judges performance. "The computer-magister knows the truth, intervenes to guide the student toward that truth, and then judges the student's performance" (Backer, 1995, p.3). "The computer asks the questions and has the answers", automates "routine correction" thus eliminating "the arithmetic burden imposed on language teachers" boasts Hope, Taylor and Pusack's (1984) description of CALL. They describe further the computer in the role of the teacher:

Programmed imaginatively, the machine embodies the best strategies and insights of the experienced language teacher, multiplying the teacher's contacts with students for certain kinds of language practice. Good programs can offer in this way, individualized attention and can allow students to work at their own pace. Students can work in privacy without fear of reprisal or ridicule regardless of how slow they might be or how often they give incorrect answers. Immediate diagnosis saves time and frustration and helps students weed out their errors. Computers possess the quality of infinite patience. They treat each student in the same way without favoritism. They are also very consistent in their responses, regardless of how many hours they have been working. Even the best of teachers cannot show the same level of enthusiasm, interest, and energy, day in and day out. (p.16)

In spite of the perceived advantages of Behavioural CALL, its detractors grew particularly as interest grew in CLT. The focus on form rather than on meaning, sketchy and vague help or feedback, the computer as "evaluative task-master that asks all the questions and judges all the answers" and "discrete points of grammar or vocabulary, mostly out of context and devoid of any real meaning": these are some of the criticisms cited as the defects of Behavioristic CALL (Underwood, 1984). Backer (1995) notes that a further problem with CALL was its underlying "assumption that one student would work at each computerized work station". This assumption required "computer hardware well beyond the financial means of most language learning facilities" and resulted in physical and psychological isolation of students (Backer, 1995, p.6).

#### **2.3.4 Communicative CALL**

The tendency to take a behavioral approach to CALL declined as did disenchantment with the Audio-Lingual Method and with behavioral psychology. During

the seventies and particularly in the eighties, interest grew in Communicative Language Teaching. Krashen's language acquisition theory, along with a growth in socio-linguistics led to a greater focus on the role of meaning and communication in language learning. The shift in focus paved the way for an evolution in CALL during the seventies and eighties towards what we can refer to as phase two of CALL: Communicative CALL. Underwood, (1984) developed a comprehensive set of principles for Communicative CALL. He argues that such an approach to language teaching:

1. focuses on communication rather than on the form and avoids drill;
2. teaches grammar implicitly through the lesson rather than explicitly;
3. allows and encourages the student to generate original utterances rather than merely manipulate prefabricated language;
4. does not judge or evaluate everything the student does;
5. avoids telling students they are wrong;
6. does not reward students with congratulatory messages, lights, bells whistles: success is sufficient reward;
7. does not try to be "cute";
8. uses the target language exclusively;
9. is flexible and avoids having only one response;
10. allows the student to explore the subject matter by providing an environment in which to play with language or manipulate it;
11. creates an environment in which using the target language feels natural;
12. does not try to do anything that a book could do just as well;
13. is fun, attractive, optional, supplementary: students explore, experiment and learn without being evaluated.

Hubbard (1987) identifies three categories of approaches to second-language teaching and, for each approach, provides a list of descriptors which can be applied to the evaluation of CALL software. CALL software will be representative of a particular approach to the extent that it meets certain criteria in relation to the underlying principles of the approach. The Communicative Approach or CLT is subsumed under the “acquisition approach” which Hubbard describes as follows:

1. provides meaningful communicative interaction between the learner and the computer;
2. provides comprehensible input at a level just beyond that currently acquired by the learner;
3. promotes a positive self-image in the learner;
4. motivates the learner to use the software;
5. motivates the learner to learn the language;
6. provides a challenge but does not produce frustration or anxiety;
7. does not include overt error correction;
8. allows the learner the opportunity to produce comprehensible output;
9. acts effectively as a catalyst to promote learner-learner interaction in the target language.

Computer tools such as word-processors and desk-top publishers might serve as a model of Communicative CALL. The role of the computer in Communicative CALL could also be referred to by Higgen’s (1986,1988) computer-as-pedagogue. In this role, the computer “waits until summoned, responds to requests and serves”. Although knowing the truth, the pedagogue patiently provides only the requested information or activities in order to lead to exploration and discovery on the part of the student (Backer, 1995, p.3). Legenhausen and Wolff (1987) in their typology of CALL focus on how classroom activities relate to real-world activities outside of the classroom. Using their

typology, we can describe the role of the computer in Communicative CALL as simulator of reality. While the applications are still didactically motivated as in Behavioral CALL, the simulations provide opportunities for a focus on communication. Although, as the authors argue, the dichotomy between classroom and real world is not overcome.

The types of computer programs using a communicative approach might still include those of the drill and practice type. The difference with Communicative CALL however is that student choice, control and interaction play a more important role (Warschauer, 1996a). Other types of Communicative CALL programs rely on the model of computer-as-stimulus (Taylor & Perez, 1989). "In this case, the purpose of the CALL activity is not so much to have students discover the right answer, but rather to stimulate students' discussion, writing, or critical thinking" (Warschauer, 1996a, p.3). As Warschauer cautions however: "...the dividing line between Behaviouristic and Communicative CALL involves not only which software is used, but also how the software is put to use by the teacher and students" (p.3). Thus this second phase of CALL does not distinguish itself totally from the first phase. Instead, it serves more so as a bridge to what could be referred to the third phase of CALL.

### **2.3.5 Technology-Enhanced Language Learning (TELL)**

To emphasize the growing invisibility of the tool and the shift in emphasis on the uses of the tool, it would seem appropriate to employ a different term to characterize this period in the evolution of computer use in language teaching. Whereas in phase one and two, we referred to Computer-Assisted Language Learning, we will now instead adopt use of the term Technology-Enhanced Language Learning. The distinction between CALL and Technology-Enhanced Language Learning (TELL) is that the computer simultaneously becomes less visible yet more ubiquitous. "The change in emphasis from computer to technology places direct importance on the media of communication made possible by the computer, which itself often remains unseen, rather than on the computer itself" (Bush & Roberts, 1997, p.vii). Garrett (1991) distinguishes between technology that assists learning and that which supports learning. Whereas in CALL, the computer

assisted learning, it might be said that in TELL, the computer supports learning. This third phase of technology use in second- and foreign-language teaching is characterized by the use of multimedia and the Internet. It can also be characterized by a clearly delineated move away from behaviorist, drill and practice type software and a move towards more constructivist uses of the tool. It also represents a certain rejection of Communicative CALL as Warschauer and Healey (1998) explain:

Though communicative CALL was seen as an advance over behavioristic CALL, it too began to come under criticism. By the late 1980s and early 1990s, critics pointed out that the computer was still being used in an ad hoc and disconnected fashion and thus “finds itself making a greater contribution to marginal rather than central elements” of the language learning process (Kenning & Kenning, 1990, p. 90). This corresponded to a broader reassessment of communicative language teaching theory and practice. Many teachers were moving away from a cognitive view of communicative teaching to a more social or socio-cognitive view, which placed greater emphasis on language use in authentic social contexts. Task-based, project-based, and content-based approaches all sought to integrate learners in authentic environments, and also to integrate the various skills of language learning and use. (p.2)

The role of the computer once again shifts in this phase of computer use in language teaching. Unlike in the previous phase where the computer served in the role of simulator of reality, in this phase, using the typology of Legenhausen and Wolff (1987) the computer is able to serve as generator of reality. The dichotomy of classroom versus real world disappears as technology allows the real world to be “brought in” to the classroom. In this phase, the discrepancy disappears between the didactic situation of the classroom and that of the world outside of the classroom. The computer allows classroom-based learners to experience realities from outside of the classroom i.e. from the “real world”. Hubbard’s (1987) typology uses language teaching approaches to categorize CALL programs: Behavioristic CALL approaches, explicit learning approaches, and acquisition approaches. In this third phase of CALL, the computer acts as a facilitator of language acquisition.

Warschauer (1996a) refers to the third phase of use of computers in teaching

second languages as Integrative CALL. He uses the term *integrative* to refer to efforts at developing models which would integrate various aspects of language learning for example using task- or project-based approaches. Integrative CALL relies on use of multimedia and the Internet and more specifically on hypermedia. Hypermedia, explains Warschauer, allows for easy integration of the skills of listening, reading, writing and speaking, authentic learning experiments, student control over their learning and a focus on the content. Hypermedia also creates an environment for the exploration of vast amounts of information, experimentation and discovery (Underwood, 1989). Multimedia's capacity for the integration of image, sound, audio and video represents what can be characterized as a fundamental challenge to the textbook as the "font of knowledge" as well as a challenge to the "dynamics of the textbook/classroom model of instruction" (Pusak & Otto, 1997, p.15).

Multimedia computers can provide an accurate portrayal of the target language and provide learners with control and feedback. More importantly though they facilitate a methodological and theoretical advance that shifts the emphasis away from the traditional production of sentences common with CALL to an emphasis on "input and intake" (Pusak & Otto, 1997). Multimedia also provides a "massive storehouse of recorded realia" (Ibid.) to facilitate authentic learning. As well, multimedia provides support for different learning styles of language learners by deploying different neuro-systems in learning through its reliance on sound, colour, animation etc. (Hanson-Smith, 1997). In spite of the advantages of multimedia for language learning, Warschauer argues that there are problems related to its use for language teaching. The lack of programs based on sound pedagogical principles combined with the lack of interactivity and intelligence of these programs limit the ability of multimedia technology to allow for the integration of meaningful and authentic communication. Hanson-Smith (1997) argues in a similar vein about the lack of "appropriate pedagogy" of multimedia whereby the media aspects often drive the content rather than the other way around.

On the other hand, computer-mediated communication made possible in online learning environments, posits Warschauer, can allow for a truly integrative approach to

technology use by providing an environment where authentic and creative communication are fully integrated. Warschauer argues that computer-mediated communication “is probably the single computer application to date with the greatest impact on language teaching” (p.5). It also allows not only one-to-one communication, but also one-to-many, allowing a teacher or student to share a message with a small group, the whole class, a partner class, or an international discussion list of hundreds or thousands of people. The integrative function of computer-mediated communication is illustrated as follows:

Computer-mediated communication allows users to share not only brief messages, but also lengthy (formatted or unformatted) documents--thus facilitating collaborative writing--and also graphics, sounds, and video. Using the World Wide Web (WWW), students can search through millions of files around the world within minutes to locate and access authentic materials (e.g., newspaper and magazine articles, radio broadcasts, short videos, movie reviews, book excerpts) exactly tailored to their own personal interests. They can also use the Web to publish their texts or multimedia materials to share with partner classes or with the general public. (p. 5)

In a discussion of the use of technology from the perspective of Teachers of English to Speakers of Other Languages (TESOL), Hanson-Smith (1997) examines the pedagogical practices that have benefitted or will benefit from technological enhancement. The traditional four-walled classroom with chalkboard and textbook is enriched by an Internet connection in the school. Increased linguistic diversity, extended listening practice, global interaction with other learners and native speakers through e-mail and chat: these are some of the advantages offered through online learning environments and computer-mediated communication. Authentic language/content-based learning are facilitated, stimulated and simulated through technology use. The World Wide Web allows for an instantaneous exchange of information to and from sites and between individuals. Use of the Internet demands a level of student engagement in authentic language encounters that would barely be possible face-to-face (Hanson-Smith, 1997). Two-way video and voice links and video-conferencing will further facilitate attempts at cross-cultural communication and collaboration:

Language learners may post messages to a bulletin board, which users may

“drop by” to look at, or they may join a list and have messages sent directly to their own “mail box,” or they may enter “live” chat areas where communication is simultaneous, as if one were “talking” by typing. A number of sites now exist specifically created for ESL learners (and for learners of other languages as well) to exchange ideas on topics of real interest to them. Real-time chat rooms, MOOs (Multi-User Object-Oriented sites) or Telnet sites also usually have access to an online dictionary for quick, real-time searches. (Hanson-Smith, 1997, p.5)

Collaborative and task-based learning are also made possible through online learning. Global classroom curricular exchanges and inter-cultural exploration also offer great potential for language learners. Use of the Internet in teaching can also facilitate more proactive, conscious, cognitive learning whereby the student accesses, evaluates, and deploys his or her own learning methods. Students may research current events, historical and cultural topics, or hundreds of other topics in thousands of online archives. They may also question native speakers using e-mail, look up words online as they try to express themselves, and collaborate with groups of learners, native and nonnative speakers of the target language globally and instantaneously (Ibid.).

Computer-mediated communication (CMC) using the Internet has the power to allow learners to collaborate and to construct knowledge together (Warschauer, 1997a). Online learning, explains Warschauer, breaks the pattern of teacher-centred discussion in the classroom. In his review of studies on CMC, the author notes that the social dynamics of CMC result in more equality of participation than what would be typical in face-to-face communication. As well, students can initiate authentic communication with each other, with the teacher, in the classroom or outside the classroom. Such communication can be characterized as situated learning or learning that is situated within a particular context yet transferable to a broader context or environment. Brown, Collins and Duguid (1989) have developed the theory of situated learning which argues that learning, both outside and inside school, advances through collaborative social interaction and the social construction of knowledge. In situated learning, knowledge is presented in an authentic context, i.e., in settings that would normally involve that knowledge. Online exchanges using the Internet provide such opportunities for authentic and meaningful

communication, social interaction and collaboration.

Singhal (1997) explains how use of the Internet can promote higher-order thinking skills. In searching the Web for specific information, logic skills are required of the language learner. Students must review the information through activities such as scanning, discarding, and evaluative judging. Finally, the learner goes through a process of synthesizing the information in order to make a complete and coherent whole. Such an endeavor permits students to practice reading skills and strategies. Singhal describes as well how the Internet allows students to interact with the “real world”. It provides authentic materials, current information, and promotes incidental learning.

The value of OLEs as a source of invaluable authentic material is discussed by Smith (1997). Smith uses the term *virtual realia* to refer to authentic material or, more specifically, “(in language teaching) digitized objects and items from the target culture which are brought into the classroom as examples or aids and used to stimulate spoken or written language production” (p.1). Realia consists of cultural artifacts as well as teaching aids that “facilitate the simulation of experience in the target culture”. According to Smith, such materials promote active teaching and learning, help to make the target language input as comprehensible as possible and build a bridge between the classroom and the world. Realia provide language learners with “multi-sensory impressions of the language” and aid in contextually grounding instruction by bringing students into contact with language as it is used in the target culture in order to meet actual communication needs.” Realia break down geographic barriers and thus provide insights into the target culture. Smith summarizes the benefits of virtual realia by comparing them with traditional realia:

Like more traditional realia, virtual realia is motivating and meaningful in that it brings an authentic piece of the target culture into the language classroom. The added advantage with this new medium is that realia-based lessons need not be bound to cities and places that the teacher has physically been to but, rather, can be based on materials from a variety of places collected from a variety of people with various interests. Further, students interact directly with these materials rather than with someone else's interpretation and analysis of them and thus may find virtual realia even more appropriate for their interests than traditional authentic

materials collected by the teacher. Another benefit of virtual realia is that the materials are truly interactive and more flexible than traditional ones in that they can be easily adapted and up dated. (p.2)

OLEs offer many benefits for foreign- and second-language education. Compared with earlier forms of technology use, they not only offer a greater variety of tools and mediums but also allow for a move away from the behavioural approaches to language learning previously so common with computer use in the teaching of second languages. Some of the main advantages of the use of OLEs in second- and foreign-language teaching identified to date can be summarized as follows:

- Online interaction can lead to cooperative projects and increased communication between students from all over the world, in turn leading to the development of social skills. (Singhal, 1997)
- The linguistic nature of online communication is desirable for promoting language learning. Electronic discourse tends to be lexically and syntactically more complex than oral discourse. (Warschauer, 1996b)
- The Internet creates optimal conditions for learning to write by providing an authentic audience for written communication. (Warschauer, 1997b)
- Use of the Internet is motivating for students because they see it as new and exciting and as a tool they will need in their future careers. (Muehleisen, 1997)
- Communication with native speakers furthers literacy development for authentic purposes, enables language learners to compare student perspectives on an issue, and allows them to practice specific skills such as negotiating, persuading, clarifying meaning, requesting information, and engaging in true-life, authentic discussion. (Singhal, 1997)
- Listservs from around the world can offer news and discussion groups in the target language providing another source of authentic input and interaction. (Ibid.)
- Chat rooms can be used to stimulate authentic communication and

assist students in developing specific communication skills such as arguing, persuading, or defending a particular point. (Ibid.)

- The teaching of culture can be facilitated through the immediate feedback and contact with second-language speakers. (Ibid.)
- The Internet can be used to acquire information from language resources for a variety of purposes such as current geographical, historical, social/cultural, economic, and political information from the countries in which the target language is spoken. (Ibid.)
- Students can read Web versions of daily newspapers and same-day news reports and thus participate in the culture of the target language and learn how cultural background influences one's view of the world. (Ibid.)
- The Internet can serve as a medium for experiencing and presenting creative works, and as a platform for students' own work such as essays, poetry, or stories. (Ibid.)
- The Internet provides supplemental language activities which can provide students with additional practice in specific areas of language learning. These include reading tests and comprehension questions, grammar exercises, pronunciation exercises possible through the available multimedia capabilities, cloze tests, vocabulary exercises. (Ibid.)

In summary, OLEs present certain possibilities and potential for language learning that cannot be achieved otherwise. Nor can the new era of language learning be achieved effectively without use of OLEs. OLEs have the capacity to generate reality and thus to provide access to the real world to an extent that would not be possible otherwise. They provide tools that support a level of collaboration and communication which cannot be provided by any other learning environment. They allow for a focus on knowledge production, construction and sharing to an unprecedented extent. Finally, OLEs provide unparalleled support for constructivist learning. As Ryder (1994) remarks, the Internet is "a powerful environment for constructivist learning":

It is an organic system which grows and responds to human participation.  
A virtual library, the Internet provides abundant information resources.

But unlike a library, the Net is a potent environment for generative learning where participants, through interaction, add value to the resources they exploit. The flexibility of collaborative environments provides scaffolding for learners in times of rapid change where standard instructional approaches can be less than adequate. The power of the Net is exploited by crafted learners using collaborative strategies and sophisticated cognitive tools. (p.1)

There are numerous benefits of language learning in online environments which were not possible with earlier forms of technology. The capacity for communication makes online learning very attractive for learning languages and it is this feature that is often touted as one of its major advantages. The capacity to allow for individualization is also a valuable feature for language learners. Unlike CALL which presented the same material, in the same way and with the same analysis of performance (Garrett, 1991), online learning provides a multitude of presentations and a wide range of content suitable to different learning styles and strategies. At the same time, ironically, such a range of styles and content can also present itself as a weakness of the new medium. Garrett (1991) questions whether or not students can make best use or the use intended by their teacher of hypertext and hypermedia material such as that offered by the Internet or online learning environments. Garret points to many of the unresolved questions related to students' browsing in large databases:

If learners have access to a lot of data regarding something they need to know an unspecified amount about-reference materials or related bodies of more or less directly relevant information, far more than can realistically be accessed-what do they in fact look up? Do they know what they need to look for? How do they make use of it? In the long run, do they perhaps learn as much from browsing, in what might seem to us an inefficient or purposeless way, as from directed exploration? How freely does what kind of student at what level of learning browse and explore? Do learners get lost moving around in an infinitely complex set of related data? What kind of student gets lost under what circumstances? What kind of lesson structure or visual clues tend to prevent their getting lost? (p.93)

Garretts' questions remind us that there are many unanswered questions and challenges regarding the use of online learning environments for language learning. (Singhal, 1997) highlights some of these challenges to use of the Internet in language

teaching:

- When lines are busy due to many users, it may take time to access information or browse the Net and technical glitches themselves can lead to frustration.
- Lack of training and familiarity on part of the teachers can make it difficult to implement the Internet in the language classroom.
- Foreign language teachers are especially anxiety prone to computers since they often have little experience with computers.
- For the most part, computers in schools are used for business or computer science courses.
- Costs related to training, as well as on-line costs of using a provider are issues that may interfere with implementing such a technology in schools, especially in schools that have little funding.
- Censorship may also be a concern to language programs and instructors. The Internet offers access to all types of issues and topics, some of which are unsuitable for children.
- Equity issues may also present difficulties when attempting to implement such technology in the classroom. Rural and inner-city schools, already hard-pressed to provide Internet access, may find it less affordable.
- Many institutions such as these may also not have the computers or computing facilities necessary to implement such type of technology.

Like Singhal, Warschauer (1997b) recognizes both the potential and the challenges related to OLEs and language learning. Internet activities can result in various complexities that may not occur in the traditional classroom. Students may not necessarily have the prerequisite computer skills necessary for success. Other complexities relate, not to human factors, but to issues of hardware and scheduling. Malfunctioning software and/or hardware as well as unavailable labs may thwart students' and teachers' most well-intended efforts. Certain online activities such as exchanges between partnered classes

must be carefully managed to ensure success. Differences in understanding, schedules, language, and experience can result in complications in an exchange.

To ensure optimal conditions for a successful online language learning experience, Warschauer suggests certain guidelines for teachers. Teachers must carefully clarify their goals in order to be able to plan and organize online activities that best lead to realization of these goals. Online activities should not be simply add-ons to the curriculum rather they should represent an attempt at integration and should as well place sufficient cognitive and linguistic demands on students. The challenges related to learner preparedness require that teachers provide support to avoid a situation where students become overwhelmed by the demands of learning in the new environment. Handouts, training sessions, pair-work and direct assistance are some of the ways in which the teacher can provide support. One of the most significant ways in which a teacher can ensure greater success in online learning is to use a learner-centered approach that allows student input into decisions and which ensures “de-centered interaction”. One important aspect of their role in online learning will involve helping students develop the necessary learning strategies. Most importantly, argues Warschauer, teachers must learn to become a “guide on the side” rather than a “sage on the stage”.

Providing teachers with guidelines and helping them understand the challenges and difficulties related to online learning is a necessary step in ensuring that their experiences in the new environment will be successful. Teachers cannot simply assume that the techniques, approaches and strategies that worked well in the traditional learning environment of the classroom can simply be successfully transposed into the environment of the Internet. One of the important reasons that such a transposition cannot occur easily is that the Internet was not designed as a learning environment. As Warschauer has argued, use of the Internet as a learning environment requires the adoption of different roles and necessitates a certain preparation in order to meet its particular challenges.

The challenges will be numerous and complex for teachers as they move towards use of new technologies and new practices in the 21<sup>st</sup> century. Use of new technologies may require that they abandon old ways of doing and of believing. The approaches to

teaching and to technology use, the theories which have made sense to them, the environments which have provided them with considerable security and comfort: all of these aspects may need to change if teachers are going to be able to effectively exploit the new online environments for learning. The previous sections of this chapter have outlined the new environments, theories and approaches to teaching languages and using technology which will form the landscape for learning in the 21<sup>st</sup> century. The following section of this chapter provides a summary of these new elements in order to outline the vision of language learning in the 21<sup>st</sup> century.

#### **2.4 The Vision of Language Learning in the 21<sup>st</sup> Century**

This chapter has provided a summary of approaches and of the use of technology in the teaching of FSFL for the past 100 years. The evolution of approaches described in this chapter culminated with the new era of language learning characterized by a reliance on constructivist philosophy. The evolution of technology use described in this chapter culminated with Technology Enhanced Language Learning. If we combine the new era of language learning with use of Technology Enhanced Language Learning we have a vision or an ideal for the teaching of FSFL in the 21<sup>st</sup> century. This vision is characterized by use of an approach which is referred to here as the Digital Approach. This approach relies on use of online learning environments and constructivism applied to language learning.

Whereas the approaches in the 20<sup>th</sup> century relied essentially on use of traditional environments, the Digital Approach relies essentially on use of OLEs. TLEs are generally structured, organized, censored, controlled and closed, provide a filtered reality and are characterized by sameness and stability. Instruction in these environments follows a linear, sequential pattern, is structured by time and relies on use of the text-book and supports synchronous communication. By contrast, OLEs are open, decentralized, unorganized, unstructured, uncensored, uncontrolled, generate reality and are characterized by sensory-vastness, growth and change. Instruction in these environments follows a non-linear/hypertextual pattern, operates independent of time and supports

asynchronous as well as synchronous communication.

Whereas the approaches of the 20<sup>th</sup> century drew essentially on the principles of behaviourism, the Digital Approach will need to draw on the principles of constructivism. Some of the behaviourist approaches described in this chapter included Grammar-Translation, the Direct Method and the Audio-Lingual Method. These approaches or methods were centered on instruction with activities, techniques, skill-development and resources dictated largely by the underlying behavioural philosophy. The teachers' role was central and knowledge was conceived as a transferable commodity. Communicative Language Teaching based on a humanistic philosophy, rejected many of the tenants of previous approaches and reflected many of the principles of constructivism. However, CLT with its emphasis on one concept - that of communication, failed to provide the philosophical basis needed to define epistemological issues and to guide daily practices.

The new era of language learning draws heavily on constructivist principles as they relate to language learning. Knowledge construction replaces the earlier emphasis on knowledge transmission and reproduction. Students become the centre of the instructional process resulting in a de-emphasis of the role of the teacher as well as that of the curriculum. Students' prior knowledge and conceptions form the starting point for learning experiences. Instead of a predetermined sequence dictated by the curriculum, learning paths are determined by the students' needs and interests. Communication is redefined as a process of social negotiation of meaning and collaborative knowledge sharing. Real-world learning provides for meaningful and purposeful learning activities and experiences.

Whereas the approaches of the 20<sup>th</sup> century relied on Behaviouristic and Communicative CALL, the Digital Approach of the 21<sup>st</sup> century will depend on Technology Enhanced Language Learning. Behaviouristic and Communicative CALL reflected the basic philosophical tenants of behaviourism and humanism respectively. With CALL, technology use often provided a means to take away much of the drudgery of language learning by digitizing drills and practice and by simulating reality. The computer served as simulator of reality, stimulator, tutor, tool, pedagogue or magister.

The computer's role remained marginal or peripheral with technology being used in a disconnected way. Teaching remained an essentially explicit and didactic activity. The computer represented a means to improve some practices but did not transform them.

With TELL, technology's role becomes one which supports a constructivist, student-centred approach. Technology use becomes an integral and necessary part of the learning process and not simply an add-on designed to extrinsically motivate students. The computer is valued because of its capacity, not only to simulate reality, but to generate it. Real-world learning, authentic content and resources, a focus on global communication and collaboration all result in a blurring of the boundaries between the classroom and the realities of the world surrounding it. The computer represents a means to experiment with new practices and not simply a means to improve practices. Teaching is no longer an explicit, didactic activity because such approaches are poorly supported by online learning environments on which Technology Enhanced Language Learning relies.

The Audio-Lingual Method, the Direct Method and even Communicative Language Teaching provided a highly prescriptive approach to second and foreign language teaching. The Digital Approach, by contrast does not dictate or prescribe specific activities, techniques or methods. It does, however, rely on use of online learning environments instead of traditional learning environments. In terms of the learning theory which underlies the approach, constructivism replaces behaviourism. In relation to the way in which technology is used, Technology Enhanced Language Learning replaces the previous reliance on Computer Assisted Language Learning. The environment, the learning theory and the way in which technology is used will dictate a change in activities, techniques, roles and learning experiences to allow for an approach which this study refers to as the Digital Approach.

The following table summarizes this evolution of approaches during the past 100 years and indicates where the Digital Approach lies in the evolution. The vision of learning FSFL corresponds to the far right hand column which summarizes the main components of language learning in the 21<sup>st</sup> century.

Point of comparison	20 <sup>TH</sup> CENTURY		21 <sup>ST</sup> CENTURY
	←1970	1970→	
<b>APPROACHES &amp; METHODS</b>	Audio-Lingual Method, Direct Method	Communicative Language Teaching	The Digital Approach
<b>TECHNOLOGY USE</b>	Behaviouristic CALL	Communicative CALL	Technology Enhanced Language Learning
<b>THEORY OF LEARNING</b>	Behaviourism	Humanistic influences	Constructivism
<b>ENVIRONMENT</b>	Traditional	Traditional	Online

Table 2.3 Summary of the evolution of approaches and of technology use in the teaching of FSFL

Whether or not the vision for learning FSFL in the 21<sup>st</sup> century can be realized will depend on the uses which teachers make of OLEs. The computer does not constitute a method in itself rather it is a medium or an environment in which a wide variety of methods, approaches or pedagogical philosophies may be implemented (Garrett, 1991). Yet, as Mather (1996) explains, the didactic approach is not the most appropriate for use with the Internet. Instead, constructivism is a more natural partner and meshes nicely with the strengths that educational technology has to offer. As Mather posits: technology may well force the issue in the ongoing dispute of constructivism versus didacticism, giving the upper hand to the former. Indeed, new technologies make new kinds of interactions possible and thus affect theories of learning in the same way that changes in theories of learning affect our uses of technology (Cognition & Technology Group at Vanderbilt, 1996).

Bracewell et al. (1998) conducted a review of the literature on the contribution of online resources to teaching and, as such, identify perspectives, models and trends which provide an organizing framework within which to conceptualize the constituents of change. As part of their review, they seek to identify models of use for online resources and tools, and identify two perspectives. According to the first perspective,

technology serves to extend or replicate the classroom i.e. to digitize existing practices. The second perspective focuses on technologies that transform the instructional paradigm, restructure the organization of the classroom, and allow educators to make use of technology to do things differently. This dichotomy of uses corresponds to the Type I and Type II applications as identified by Maddux, Johnson and Willis (1997).

If the vision for teaching and learning FSFL in the 21<sup>st</sup> century is to be realized, teachers' use of OLEs may necessitate a transformation of paradigms and practices. Use of OLEs must exploit to the fullest the tools and the potential that they have to offer. This will mean that teachers must not simply do better what they have always done but that they must do things differently. This study is premised on the argument that what teachers do represents a reflection of what they believe. What they believe will determine the uses they make of OLEs. The uses they make of them will determine whether or not they are able to realize the vision. Thus, understanding teachers' beliefs about teaching and learning FSFL in online learning environments constitutes an important first step in the process of transforming beliefs in order to help achieve the vision of learning FSFL in the 21<sup>st</sup> century.

## **2.5 Conclusion**

Some of our most important priorities for the teaching of second and foreign languages can be strongly supported by intelligent use of technology: "But these will not be accomplished unless and until teachers themselves take the initiative to think through what the technology should be able to do for them and for their students and make their needs known" (Garrett, 1991, p.95). The aim of the present research is to look at teachers' thinking about the technologies presently available to them in OLEs. The evolution traced in this chapter has provided important historical information, a theoretical background and concepts which frame current thought about the possibilities and potential of OLEs.

Behavioristic CALL fit well with the prevailing Audio-Lingual Method. Communicative CALL suits a communicative approach to language teaching. And

constructivist use of the Internet suits and supports the vision of learning for the 21<sup>st</sup> century outlined in this chapter. But what happens in situations where the teacher's didactic or transmissionist approach meets the potentially constructivist environment of the Internet? Prawat (1992) argues that constructivist approaches to teaching and learning are inconsistent with what many teachers believe. Will teachers' beliefs about teaching and learning FSFL using OLEs result in nothing more than old wine in new bottles or simply a means to digitize existing practices? Where do teachers' beliefs fall in relation to the evolution outlined in this chapter and, more specifically, in relation to the vision? Do teachers' beliefs about teaching and learning FSFL in online learning environments reflect elements of the vision of learning for the 21<sup>st</sup> century espoused by this study? In responding to these questions, this study seeks to identify, describe, and analyze teachers' beliefs in order to be better able to gauge the potential of the Internet to be effectively exploited as a learning environment. The following chapter will provide a review of the literature related to teachers' beliefs. The review will add to the framework provided in this chapter through its consideration of studies previously conducted in the area of teachers' beliefs. The chapter will also provide information about beliefs themselves, their characteristics and their relationship to practice and to change.

## **Chapter 3**

### **The Heart of Teaching: Review of the Literature**

The more one reads studies of teacher belief, the more strongly one suspects that this piebald form of personal knowledge lies at the very heart of teaching. (Kagan, 1992)

#### **3.1 Introduction**

The study of teachers' beliefs has the potential to provide significant and profound insight into many aspects of the teacher's professional world. Pajares (1992) notes that attention to teachers' beliefs can inform educational practice in ways that prevailing research has not and is essential to improving their professional preparation and teaching practices. Kagan (1992) affirms that the study of beliefs is critical to educational practice. She argues that beliefs may be "the clearest measure of a teacher's professional growth" and that understanding them is "instrumental in determining the quality of interaction one finds among teachers in a given school" (p.85). Rokeach (1968) concludes that beliefs are the best indicators of the decisions made by individuals in the course of their lifetime. In 1990, Pintrich posited that beliefs will eventually prove themselves to be the most valuable psychological construct for teacher education.

Ironically, in spite of the fact that beliefs play such an important role, they have not received much attention from researchers. Nespor (1987) has remarked that we know very little about how beliefs come into being, how they are supported or weakened, how people are converted to them. He notes:

However, in spite of arguments that people's beliefs are important influences on the ways they conceptualize tasks and learn from experience, relatively little attention has been accorded to the structures and functions of teachers' beliefs about their roles, their students, the subject matter areas they teach, and the schools they work in. (p. 317)

The lack of attention to the study of this important area may be due, as Pajares (1992) explains, to the fact that the construct does not lend itself easily to empirical

investigation and is difficult to define. More specifically, Pajares argues that “the difficulty on studying teachers’ beliefs has been caused by definitional problems, poor conceptualizations, and differing understandings of beliefs and belief structures” (p.307). Current literature on teachers’ beliefs is heterogenous and widely focused with separate research agendas (Kagan, 1992). The research on the topic tends to be categorized into domain areas such as teachers’ beliefs about teaching math or teachers’ beliefs about teaching reading.

The purpose of this study is to profile the beliefs of teachers of FSFL about teaching and learning in online learning environments. No studies were found by this review on this topic specifically. However, Chapter 2 provided a review of some of the literature on the evolution of the use of technology in second- language teaching. Included in that review was a discussion of teaching and learning FSFL in online learning environments. The review of the literature in this chapter will focus on the following areas:

1. beliefs about teaching and learning;
2. beliefs about use of technology in teaching and learning;
3. beliefs about teaching and learning FSFL.

In order to appreciate the place and role of teacher beliefs in the teaching of FSFL, it will be necessary to consider the nature of beliefs themselves, their definition and relation to other constructs such as that of knowledge. This review will begin therefore by describing the nature of beliefs and building a definition which will be used in the context of this study. Related to the nature of beliefs is their openness or resistance to change. Following the review of the literature on the nature of beliefs, will be a section related to beliefs and change. Prior to the review of teachers’ beliefs about use of technology in teaching and learning and about teaching and learning FSFL, we will explore teachers’ beliefs about teaching and learning in general.

While there is no section in this review specifically devoted to teacher’s beliefs and learning theories, an important aim of this review and of the entire study is to understand the relationship between teachers beliefs and personal theories and the

“official” theories of constructivism and behaviorism. As the review will show, teachers' beliefs relate to such fundamental issues as what constitutes knowledge, what learning is, and what the role of the teacher is. The emphasis in Chapter 2 of this study was on tracing the evolution of approaches and the use of technology in the teaching of FSFL. The chapter provided insight into how theories of learning have impacted on practices throughout the past one hundred years. No doubt, these theories have had an impact on teachers' beliefs as well. This review provides an opportunity to better understand the tacit, invisible beliefs and implicit theories that drive teachers' practices and how these compare and contrast to the “official” theories of constructivism and behaviourism.

### **3.2 The Nature of Beliefs**

While beliefs have been described as the most valuable psychological construct to teacher education (Pintrich, 1990), they also are one of the more difficult to define. Pajares (1992), in his review of the research on the topic, refers to beliefs as a “messy construct”, one that has not always been accorded much precision and which “travels under the alias” of: “attitudes, values, judgements, axioms, opinions, ideology, perceptions, conceptions, conceptual systems, preconceptions, dispositions, implicit theories, personal theories, internal mental processes, action strategies, rules of practice, practical principles, perspectives, repertoires of understanding, and social strategy, to name but a few that can be found in the literature” (p.309).

Pajares explains that confusion with the concept centres around the distinction between knowledge and belief. However, as many researchers have found, it is not so much that knowledge differs from beliefs, but that beliefs themselves constitute a form of knowledge. In his attempts to characterize beliefs, Nespor (1987) provides some distinctions between the two. He singles out four features of the construct previously identified by Abelson (1979) and considers them in relation to teachers:

1. Existential presumptions or personal truths are generally unaffected by persuasion and are perceived by the teacher as being beyond his/her control or influence. These types of beliefs would include a teacher's beliefs about students' innate abilities or characteristics.

2. Alternativity is a feature of beliefs that would include situations such as when teachers attempt to establish an instructional format of which they have no direct experience but which they might consider ideal. Nespor theorizes that it is in this respect that beliefs “serve as a means of defining goals and tasks, whereas knowledge systems come into play where goals and the paths to their attainment are well defined”. (p.310)
3. Belief systems can be said to rely much more heavily on affective and evaluative components than knowledge systems. For this reason, knowledge of a domain can be distinguished from feelings about a domain such as a subject area taught by a teacher. Teachers’ values and feelings often affect what and how they teach and may conflict with their knowledge.
4. Belief systems are composed mainly of episodically stored material which is derived from personal experience, episodes or events which continue to influence the comprehension of events at a later time. Whereas beliefs reside in episodic memory, knowledge is semantically stored.

A further distinction between beliefs and knowledge, notes Nespor, is that, while knowledge often changes, beliefs are “static”. As well, whereas knowledge can be evaluated or judged, such is not the case with beliefs as there is usually a lack of consensus about how they are to be evaluated. Furthermore, there do not appear to be any clear rules for determining the relevance of beliefs to real world events. While there are no doubt other distinctions that could be made between the two constructs, a better understanding may be gained by exploring the relationship between the two and by considering beliefs as a form of knowledge. This form of knowledge could be referred to as personal knowledge. Kagan (1992) refers to beliefs as a “particularly provocative form of personal knowledge” and argues that most of a teacher's professional knowledge can be regarded more accurately as belief.

According to Kagan, this knowledge grows richer and more coherent, as a teacher's experience in classrooms grows and thus forms a highly personalized pedagogy or belief system that actually constrains the teacher’s perception, judgment, and behavior.

In terms of beliefs as being personal knowledge, Kagan explains: “A teacher’s knowledge of his or her profession is situated in three important ways: in context (it is related to specific groups of students), in content (it is related to particular academic material to be taught), and in person (it is embedded within the teacher’s unique belief system)” (p.74).

Like Clark (1988) who equates ‘implicit theories’ with beliefs, Nespor (1987) explains how beliefs become personal pedagogies or theories to guide teachers' practices:

...teachers’ beliefs play a major role in defining teaching tasks and organizing the knowledge and information relevant to those tasks. But why should this be so? Why wouldn’t research-based knowledge or academic theory serve this purpose just as well? The answer suggested here is that the contexts and environments within which teachers work, and many of the problems they encounter, are ill-defined and deeply entangled, and that beliefs are peculiarly suited for making sense of such contexts. (p.324)

Rust (1994) describes beliefs as socially-constructed representational systems. These systems then are used to interpret and act upon the world. Since beliefs are generally contextualized and associated with a particular situation or circumstance (Kagan, 1992), it is not surprising that systems of beliefs may contradict each other (Ennis, 1994). Furthermore, wide variance can be found among the systems of beliefs of different teachers from within a similar group (Bussis, Chittenden, & Armel, 1976). Wehling and Charters (1969) discuss beliefs in terms of complex organizations consisting of discrete sets of inter-related concepts. They include beliefs in the category of representations, or cognitive maps of the external world which serve as mediators for experiencing and responding to reality. This conception of beliefs fits with the notion of beliefs as personal knowledge, personal pedagogies and implicit theories.

Munby (1982) also equates implicit theories with teachers' beliefs. Clark and Peterson (1986) in their review of the literature on teachers’ thought processes, argue that teachers' theories and beliefs represent a rich store of knowledge. Teachers make sense of their complex world and respond to it by forming a complex system of personal and professional knowledge and theories which, as Kagan (1992) describes, are often tacit and unconsciously held assumptions about students, classrooms and the material to be

taught.

Pajares (1992) provides a synthesis of the findings on beliefs which he drew from his review of the literature on the topic:

1. Beliefs are formed early and tend to self-perpetuate, persevering even against contradiction caused by reason, time, schooling, or experience.
2. Individuals develop a belief system that houses all the beliefs acquired through the process of cultural transmission.
3. The belief system has an adaptive function in helping individual define and understand the world and themselves.
4. Knowledge and beliefs are inextricably intertwined, but the potent affective, evaluative, and episodic nature of beliefs makes them a filter through which new phenomenon are interpreted.
5. Thought processes may well be precursors to and creators of beliefs, but the filtering effect of belief structures ultimately screens, redefines, distorts, or reshapes subsequent thinking and information processing.
6. Epistemological beliefs play a key role in knowledge interpretation and cognitive monitoring.
7. Beliefs are prioritized according to their connections or relationship to other beliefs or other cognitive and affective structures. Apparent inconsistencies may be explained by exploring the functional connections and centrality of the beliefs.
8. Belief substructures, such as educational beliefs, must be understood in terms of their connections not only to each other but also to other, perhaps more central, beliefs in the system. Psychologists usually refer to these substructures as attitudes and values.
9. By their very nature and origin, some beliefs are more incontrovertible than others.
10. The earlier a belief is incorporated into the belief structure, the more difficult it is to alter. Newly acquired beliefs are most vulnerable to change.

11. Belief change during adulthood is a relatively rare phenomenon, the most common cause being a conversion from one authority to another or a gestalt shift. Individuals tend to hold on to beliefs based on incorrect or incomplete knowledge even after scientifically correct explanations are presented to them.
12. Beliefs are instrumental in defining tasks and selecting the cognitive tools with which to interpret, plan, and make decisions regarding such tasks; hence, they play a critical role in defining behaviour and organizing knowledge and information.
13. Beliefs strongly influence perception, but they can be an unreliable guide to the nature of reality.
14. Individuals' beliefs strongly affect their behavior.
15. Beliefs must be inferred and this inference must take into account the congruence among individuals' belief statements, the intentionality to behave in a predisposed manner, and the behavior related to the belief in question.
16. Beliefs about teaching are well established by the time a student gets to college. (Pajares, 1992, p.324)

For the purposes of this study, beliefs will be defined based on the common elements described in this review of the nature of beliefs. From these common elements, we can derive specific statements about beliefs as follows:

- Beliefs represent teachers' personal knowledge.
- Beliefs represent implicit theories.
- Beliefs serve as cognitive maps.
- Beliefs serve as mediators for experiencing and responding to the environment.
- Beliefs represent a complex inter-related system.
- Beliefs have a cognitive and an affective component.
- Beliefs are often tacit and unconsciously held.

From these statements, we can establish a definition of teachers' beliefs which will be

used in this study:

Teachers' beliefs represent a complex and inter-related system of personal and professional knowledge that serves as implicit theories and cognitive maps for experiencing and responding to reality. Beliefs rely on cognitive and affective components and are often tacitly held.

### 3.3 Beliefs and Change

One common theme or conclusion in the literature about teachers' beliefs is that changing them is a complex, perhaps even, mysterious, process. Contrary to the attempts of theorists and those involved in trying to promote teacher professional development, teachers' beliefs appear to be static (Nespor, 1987), resistant to change (Brousseau et al., 1988), and are generally not affected by reading and applying the findings of educational research (Hall & Loucks, 1982). Pajares (1992) provides insight into how beliefs function and how this functioning actually contributes to their resistance to change:

[beliefs] provide personal meaning and assist in defining relevancy. They help individuals to identify with one another and form groups and social systems. On a social and cultural level, they provide elements of structure, order, direction and shared values. From both a personal and socio/cultural perspective, belief systems reduce dissonance and confusion, even when dissonance is logically justified by the inconsistent beliefs one holds. This is one reason why they acquire emotional dimensions and resist change. People grow comfortable with their beliefs, and these beliefs become their "self" so that individuals come to be identified and understood by the very nature of the beliefs, the habits they own. (p. 317)

A number of researchers have found that the more central a belief, the more it will resist change (Rokeach, 1968). Woods (1996) speculates that when teachers' beliefs are very tightly interconnected with other beliefs, they are more difficult to change. On the other hand, when the belief is less densely connected to other beliefs, change is a less complex operation. The implication is that, in order for change to occur, there must be some deconstruction of beliefs before another set can be constructed. This process, argues Woods, can "lead to periods of disorientation, frustration, even pain" (p. 293).

Furthermore, he notes, because each belief is part of an interwoven network which includes many other beliefs, teachers cannot simply at will 'change' one belief by itself. Instead, teacher change can only be encouraged but not mandated.

Nespor (1987) argues that instructional change is not a matter of abandoning beliefs, but of gradually replacing them with more relevant beliefs. Dwyer et al. (1992) concur with Nespor when they argue that implementing change in education must include changing teachers' practices and beliefs by gradually replacing them with more relevant beliefs shaped by experiences in an altered context. They argue that it is this altered context that may make the difference in terms of impacting on the beliefs. The altered context in which their study was situated was that of a technology-based environment. Their research was conducted in the context of the Apple Classrooms of Tomorrow project (ACOT) and focused specifically on the evolution of teacher beliefs in high-access-to-technology classrooms. They found that "teachers' beliefs may be best modified while they are in the thick of change, taking risks and facing uncertainty" (Dwyer et al., 1991, p.52). Confronted with change, teachers are forced to reevaluate their beliefs about learning and instruction and only by changing these beliefs can instructional change take place.

Bracey (1993) considered three technology reports including the ACOT project to determine the influence of technology use on teaching. Bracey's interpretation suggests that technology use serves as a catalyst for change and that computers "appear to change teachers in ways that educational reformers have been calling for" (p.9). The resulting changes involved teachers adjusting their beliefs about effective teaching. He concluded that teachers were more willing to take risks, that they allowed for more independent student work, that they worked more as facilitators and that they provided for more dynamic learning experiences. A similar conclusion was reached by Schofield and Verban (1988) in an investigation of computer use on the teaching of mathematics. They remarked that introducing computers into the classroom, not only changes the teacher's role, but results in a shift from a didactic to a constructivist approach.

Nonetheless, this ability for beliefs to change in the altered context of a

technology-based environment involves a process that is fraught with conflict. Even when innovative teachers try to alter their practices and beliefs, the cultural norms continue to support lecture-based instruction, subject-centered curriculum, and measurement-driven accountability (Dwyer et al. 1992, p.2). Whereas teachers may be committed to investigating the potential of modern technology, they are “held in check by the principals of 19th century instruction” (Dwyer et al. 1991, p.51). At the same time, the demands of the profession of teaching can also provide a certain resistance to change in beliefs. Teachers cope with the significant demands of their job by relying on their beliefs: “Teachers are, by nature of their work, pragmatists. They must survive the day; they must be ready for the next. Confronted by large numbers of computers or not, they arrive at their classrooms the very first day of their careers with a deeply-rooted belief about schooling that will help them weather the storm of the demands they face” (Dwyer et al. 1992, p.8).

Changing how teachers think about teaching and learning is a complex and challenging process. Mandating a change in the way people think about technology or about new ways of teaching and of learning is unlikely to be effective. Providing people with training and with new information and knowledge to help make them think differently may present significant challenges as well. As the literature on the subject tells us, people’s beliefs are so ingrained and so interwoven with their life’s experiences and with what they know, that they are immune to direct manipulation. Changing people’s beliefs is tantamount to changing who they are as individuals. As Nespor (1987) explains: “...belief systems often include affective feelings and evaluations, vivid memories of personal experiences, and assumptions about the existence of entities and alternative worlds, all of which are simply not open to outside evaluation or critical examination...” (p.321).

### **3.4 Beliefs about Teaching and Learning**

As the studies described in this section will illustrate, researchers often categorize the differences in beliefs of teachers as either behaviorist (transmissionist) or

constructivist. It should be noted from the start however, that such a dichotomy, while useful in terms of being able to clearly categorize beliefs, may be simplistic and misleading. Theories of learning such as constructivism are so diverse (Ernest, 1995) that it is questionable whether we can possibly categorize sets of beliefs in terms of a behaviorist/constructivist dichotomy. Not only are these theories of learning complex and open to a variety of interpretations, but teachers' beliefs themselves are complex, sometimes contradictory and therefore resist a concise classification.

Klien (1996), in his study of preservice teachers, argues that teachers' beliefs can be eclectic and contradictory and that teachers may hold both transmissionist as well as constructivist views. In his study of the learning and knowledge beliefs of 279 preservice faculty of education students, the majority endorsed a view of learning that included both constructivist and transmission-oriented themes. While the participants in the study may have agreed with the study's constructivist items, they did not simultaneously reject a transmissionist view of teaching. An interesting conclusion reached by Klein was that while "constructivism denotes a set of related beliefs for some educational theorists, these same beliefs appear independent of one another to many students" (p.369). He concludes that many preservice teachers may hold contradictory sets of beliefs depending on the context and that these beliefs may reflect, at the same time, a constructivist and transmissionist philosophy. Klein explains these findings by suggesting that beliefs "are not organized into a coherent body of knowledge" or that the preservice teachers in some way reconcile the different approaches, themes or philosophies (p.370).

Collinson (1996) conducted a case study on K-5 staff development and found differing beliefs about teaching and learning which "produced tensions between adherents of behaviorist and constructivist paradigms"(p.10). While some of the teachers were able to articulate the reasons behind their preference for a particular paradigm, others simply "did not have specific vocabulary to describe what they felt" (p.10). Nonetheless teachers' pedagogical beliefs surfaced in their group discussions through "noticeably different vocabularies". While some teachers talked about "integrating the curriculum" and "finding the kid's level", others referred to the need to "cover the curriculum" and

“straight grades” (p.11). The teachers who adhered to the behaviorist paradigm believed in the effectiveness of teaching to the test, worried about being “able to cover everything” and about having their performance measured by their students’ test scores.

In his review of the literature on teachers’ beliefs and knowledge, Calderhead (1996) summarized beliefs related to teaching and learning. He categorizes teachers’ beliefs in two categories by arguing that some teachers view teaching as a process of knowledge transmission, while others view it as a process of guiding children’s learning or as a process of developing social relationships. He also distinguishes between beliefs of teachers based on their experience. Preservice teachers start with control-oriented belief systems that emphasize the importance of maintaining order and good discipline and guiding the activities of the children. During training, these attitudes become more liberal and child-centered. However, when teachers enter full-time teaching, they once again revert to a control-oriented belief system.

Teachers’ beliefs about curriculum are also pivotal in terms of bringing about significant change in education. Taylor (1990) refers to the “determinist beliefs” of teachers that the curriculum is determined by the state and that teachers have little control or influence over it. Teachers may also perceive the curriculum as a real object instead of the subject of socially-negotiated knowledge (Ibid.). As a result of holding such beliefs, argues Taylor, teachers fail to adapt their role to suit local circumstances and, furthermore, adopt the role of manager who is concerned with delivering the syllabus and controlling students interactions with it. Instead, he explains, they should assist students in “negotiating the nature of their learning activities”. Prawat (1992) sees teachers’ beliefs about teaching and learning as closely linked to their beliefs about curriculum. He describes teachers’ “dichotomous view of the learner and of the curriculum” as one of the sets of beliefs that will impede the adoption of a constructivist view of teaching and learning. He argues that teachers need to adopt an “open-systems” view of curriculum whereby they begin to perceive the curriculum as a “a network of important ideas to be explored” rather than “a course to be run” (p.382).

Prawat (1992) argues that teachers' beliefs pose a major obstacle to educational

reform “because of their adherence to outmoded forms of instruction that emphasize factual and procedural knowledge at the expense of deeper levels of understanding” (p. 354). Teachers’ beliefs, claims Prawat, are inconsistent with constructivist approaches to teaching and learning. At the start of their professional training, many teachers view teaching as telling, and learning as remembering, a belief that presents difficulties in terms of moving teachers towards a more constructivist approach (Calderhead, 1988; Russel, 1988). Challenging teachers’ fundamental beliefs about teaching and learning therefore represents an important step in any effort to bring about educational reform.

Constructivist theory requires a radical shift in thinking and in teachers' roles and places greater demands on teachers (Prawat, 1992). For teachers to shift their beliefs to accommodate a constructivist epistemology would require them to develop new practices and to abandon well-established and seemingly successful practices (Taylor, 1990). To accomplish this, teachers would first need to overcome some of the obstacles to changing their practices. Taylor observed that the teacher in his study was “limited by constraints which he associated with the inherent nature of both the curriculum and the students” (p.19). Beliefs about student expectations of a central role for the teacher as well as concerns about being accountable and progressing with the syllabus limited the teacher’s development of a constructivist pedagogy. Taylor concluded that the teacher’s positivist epistemology, along with constraints which the teacher associates with students and curriculum policies, limited the adoption of more constructivist beliefs. The teacher’s reconstruction of beliefs requires, not only self-negotiation but, as well, social negotiation with teachers, students and the larger school community.

A further obstacle to teachers’ adoption of constructivist teaching beliefs relates to the nature of constructivist theory itself. Constructivism is a new theory and many of its implications have not yet been made clear. While constructivist views of learning may be well developed, such is not the case with constructivist view of teaching (Prawat, 1992). Furthermore, notes Prawat, constructivism is open to many interpretations. Thus, while the major impediment to educational reform may well be teachers' beliefs, changing these beliefs to reflect constructivist philosophy may represent a formidable

challenge. The following section will provide some insight into the curious and complex interplay between change, constructivism, technology use and teachers' beliefs.

### **3.5 Beliefs about Technology in Teaching and Learning**

Honey and Moeller (1990) conducted an exploratory study of teachers' thinking related to how and why they use or do not use technology in their teaching. The authors of the study conducted interviews with twenty teachers to determine whether or not there were discernible patterns in teachers' pedagogical beliefs and practices which facilitate or detract from technology integration. They found that, while the high-tech teachers represented a fairly homogenous group in terms of their pedagogical beliefs, low-tech teachers tended to be more heterogenous as a group. Among the low-tech teachers, those teachers with student-centered beliefs were hesitant about using technology because of their personal fears and inhibitions. The teachers in this group who held more traditional classroom practices feared that technology might "alter their relationship of control and authority with their students" and they also believed they did not have the time for any additional activities (p.3). There was a further group of teachers whose practices were student-centered and who would have liked to use computers in their teaching but who did not because of either lack of equipment or scheduling problems in the computer lab.

The high-tech teachers in their study engaged in activities such as collaboration, project-oriented work and hands-on activities, inquiry-based and discovery-based learning. These teachers perceived themselves as learners and expressed a belief in the need for different learning styles and learning requirements for students. These teachers perceived technology as a facilitating tool and one that enhanced the curriculum. Honey and Moller noted that there was a widespread belief among this group of high-tech teachers that technology could expand students' horizons, make learning more fun and more meaningful, allow them more time to help individual students, and allow them to take a more process-oriented approach to teaching that involved small-group work and project-oriented activities. In general, this group of teachers used their student-centered pedagogical beliefs to facilitate the effective integration of technology into their curricula

and made a conscious and deliberate effort to find applications that support the kinds of student-centered practices that prevail in their classrooms.

Of the twenty teachers in the study, there were three whose pedagogical beliefs appeared almost identical to those of the high-tech teachers but who expressed fears and “deep-seated personal ambivalence about the technology itself” (p.8). One of these three teachers described the experience of using computers as being like “a whole new language” and “new culture” and that many aspects seemed “strange and foreign”. One of the other teachers in this group was reluctant to use computer technology because he felt he lacked the technological know-how and because his first experiences had been negative. Honey and Moeller described the beliefs of these teachers as “conservative”. These teachers saw technology as a means to reinforce basic skills, as a motivator and an “add-on” to the curriculum. The authors made some recommendations about how teachers might be encouraged to effectively integrate technology. These recommendations suggest that changes may be required, not only in teachers’ beliefs but, as well, in the educational system itself:

For teachers whose educational beliefs and practices are traditional, there exist different and much more complicated barriers for technology integration. In order to integrate technology into their curricula as the high-tech teachers have done, the very nature of their practices would have to change. In order to bring about such change, however, different layers of the educational system would have to be effected, ranging from changing how assessment is done to helping teachers rethink how students learn and develop. (p. 16)

The Apple Classrooms of Tomorrow (ACOT) research project ran from 1986-89 and included 32 teachers and 650 students in four elementary and one high school classroom. The ACOT classrooms offered teachers and students constant access to interactive state-of-the art hardware and software in “true multi-media environments”. The research focused on understanding the dynamics of teacher beliefs and practices in high-access-to-technology classrooms. The research demonstrated the need to take into account and recognize teachers’ belief systems in order to implement significant change. At the same time, the research concluded that changing one’s inner-most beliefs about

teaching and learning involves entering into a process ridden with self-doubt, subject to external influence, exhausting, and never unidirectional (Dwyer et al., 1992).

The authors of the study summarized the five developmental phases through which their research subjects passed. The phases characterize the process of evolution of teachers' beliefs and practices from a traditional, text-based curriculum to more constructivist approach. In this model, teachers' "lecture-recitation-seatwork mode" is at first strengthened by use of technology and then gradually replaced by more dynamic learning experiences as teachers move through the phases. These phases are:

1.     **Entry:**  
This is the initial stage which involves rewiring and rearrangement of classrooms. The stage is characterized by problems related to discipline, resource management and personal frustration.
2.     **Adoption:**  
In this second stage, concerns shift from connecting computers to using them. Teachers begin to adopt technology to support traditional text-based drill and practice instruction, whole-group lectures and individualized seatwork.
3.     **Adaption:**  
This stage is characterized by thorough integration of the technology.
4.     **Appropriation:**  
In the appropriation stage, there is a shift in roles and new instructional patterns emerge. There is an increasing tendency of teachers to reflect on practice and to question old patterns.
5.     **Invention:**  
The authors describe this final stage as "a placeholder for further development by ACOT's teachers and for the new learning environments that they will create". (Dwyer et al., 1991, p.50)

All of these stages build what the authors refer to as a "readiness for purposeful change" (Dwyer et al., 1992, p.8). Whereas in the earliest stage, teachers were more inclined to use technology to replicate traditional learning practices, they gradually moved towards

the realization that technology could change their students' learning experiences. As the authors observed, during the appropriation stage:

When they reached this phase, teacher quotes communicated a working comfort with beliefs about teaching and learning that were not common among the staff at the project's outset. For the most part, ACOT teachers have become more disposed to view learning as an active, creative, and socially interactive process than they were when they entered the program. Knowledge tends to be viewed more as something children must construct and less like something that can be transferred. The nature of these teachers' classrooms, the permissions they have granted their students, and their own instructional behaviours demonstrate that shift in action. (Ibid., p.8)

In the initial stage, teachers were more preoccupied with the technology itself. As teachers progress in their use of technology, they begin to focus more on issues related to instruction and learning. It is at this stage that they begin to critically examine their beliefs. However, the study revealed that teachers frequently experienced intense inner conflict, vacillation in and struggles with these beliefs as they explore alternate approaches about classroom management, curriculum and collaborative learning:

The direction of change was towards child-centered rather than curriculum-centered instruction; towards collaborative rather than individual tasks; towards active rather than passive learning. Each of these dimensions brought deeply held beliefs about traditional schooling into conflict with what teachers witnessed in their classrooms. The conflict never transformed those beliefs outright; the process seemed more gradual: an erosion of the old, an accretion of the new. (Ibid., p.3)

The authors of another ACOT report focused more specifically on the role that the physical environment plays in bringing about change in teachers' practices. They noted that the traditional model of school organization emphasizes student control, teacher-centered didactic approaches to teaching and learning. They argue that the environment itself, which is based on an "eggcrate" model, actually perpetuates a traditional approach to learning. Furthermore, they found that teacher beliefs about the physical environment actually limit the number of possible options for change. Teacher beliefs appear to control the process of change and limit the number of possible options

for change. Two of these beliefs in particular were that (1) all students need an assigned desk; and (2) primary grade teachers need to be able to see all the computer screens at the same time. They found that teacher beliefs of this nature tended to be contrary to a highly interactive and creative learning environment (Stuebing, Celsi & Cousineau, 1994).

Niederhauser and Stoddart (1994) conducted a large-scale study involving a survey of the perspectives on computer-assisted instruction of 2,170 teachers. They divided their findings into two categories of beliefs: 1. Computers are tools for students to collect, analyze and present information. 2. Computers are machines for teachers to use in presenting information, giving immediate feedback and tracking student progress. They also concluded that teachers' beliefs about effective uses of computers are closely linked with their use of computers in the classroom. Teachers who used more open-ended, constructivist-type software with their students believed that computers can be used more effectively as a tool for student construction of knowledge while teachers who used more traditional, behaviourist types of software believed that computers were effective as teaching machines. The findings revealed that, while elementary school teachers tend to favour a more transmission-oriented view of how computers can be effectively used in the education of their students, secondary teachers tend to favour a more constructivist view.

Hannafin and Freeman (1995) conducted an exploratory study of teachers' views of knowledge acquisition. Their aim was to understand how their views might influence their decisions of whether or not to use computers in the classroom. The authors worked from the premise that teachers' conceptions of knowledge acquisition range on a continuum from objectivism to constructivism and that the computer may be more suited to teachers who hold constructivist beliefs. They hypothesized that teachers who hold objectivist views will use the computer only for lower-order skills. Likewise, those with constructivist views would be expected to use computer programs that facilitate more open-ended and problem-solving approaches to curriculum. The study's findings revealed that experienced teachers held more objectivist perspectives on learning than did preservice teacher candidates and that the greater number of years of teaching, the more

likely the teacher would hold an objectivist view of knowledge acquisition. The authors did not find any relationship between teachers' views of knowledge acquisition and the likelihood they would use computers in instruction. However, they questioned committing resources to develop constructivist-based software applications if teachers' views of knowledge acquisition are generally objectivist.

Olech's (1997) examination of the relationship between teachers' pedagogical beliefs and the level of instructional computer use bears some resemblance to that of Hannafin and Freeman in terms of the aim and the findings. Olech found that teachers demonstrated an eclectic pedagogical orientation. The researcher sampled 101 elementary teachers using a 57-item questionnaire. One of the scales used in Olech's study assessed teachers' pedagogical orientation and categorized them as having behaviorist, information processing or constructivist beliefs. Using a second scale, she measured their level of computer use along a continuum from utilization to integration. In general, she concluded that the more behaviorist the teachers were in pedagogical orientation, the less likely they were to use the computer instructionally. The negative correlations suggested that teachers with stronger behaviorist tendencies might benefit from inservice education that provides models for implementation in classroom situations closer to their own.

In the context of a study on Internet use in which approximately 2,250 teachers of 4<sup>th</sup> through 12<sup>th</sup> grade classes in U.S. public schools responded to a survey, Becker (1999) found that the third major predictor of teachers' Internet use is the teacher's pedagogical beliefs and practices. One of the important conclusions of the study is that "Teachers who regard education as primarily the distribution of facts and skills to students according to a fixed curriculum sequence are much less likely to exploit the Internet than more "constructivist" teachers." More specifically the author found that "the more constructivist the teacher the greater their average use and the more positively they viewed the Internet".

Becker (1991) has also explored issues related to the interaction between teachers' beliefs and systemic practices in an effort to heighten awareness of how "conventional beliefs" and "institutional constraints" can "impede even the best of intentions to improve

schooling through technology” (p. 6). Becker argues that teaching practices are a result of teachers’ “own schooling, training and experience as teachers”. He also points out however that, teachers’ teaching styles are influenced by their beliefs, on one hand and “the regularities in the social structure in which most of them work” (p.8). He posits that “The circumstances of teaching also intervene to affect teachers’ proximate goals in ways that often distort their more conscious long-range goals” (p.8). An important circumstance of teaching to which he makes reference is that of time which he singles out as “the biggest impediment to better computer use”. He explains:

For most teachers, the time required to plan even modest variations to the routine of direct instruction of specific facts and student practices is hardly present....The more complex the software and the more it offers student-centered discovery learning approaches, the more difficult teachers will find the task of getting some constructive benefits from its use-even if the potential for student accomplishment is that much greater. (p.9)

Like Olech (1997) and Becker (1999), Hannafin and Savenye (1993) explore the issue of how beliefs influence teachers' computer use. They summarize the literature on teacher's use of computers in order to determine reasons why teachers do not use computers and to examine the role of those teachers who do. From their review of the literature pertaining to why teachers resist micro-computers, the authors found the following:

- Frustration in learning how to use the computer causes some teachers to give up early;
- poorly-designed software;
- little faith in the computer’s ability to improve learning outcomes;
- concern that the computer can become a mental crutch for some students;
- resentment of the computer. The computer is seen as a competitor for students’ attention;
- computer use requires increased investment in time and effort;

- fear of losing control over students or of “looking stupid” in front of the class. (p.27)

The authors were interested in documenting not only teachers’ resistance to use of microcomputers but, as well, their resistance to the “new roles” of micro-computer users. The authors explain that the teacher’s role changes “only to the extent to which a shift of responsibility to the learner occurs”. The role can be represented on a continuum from the traditional lecturer and imparter of knowledge (objectivist-based) to that of a coach or facilitator (constructivist-based). A change in the role of the teacher from that of lecturer to facilitator represents a corresponding shift in learning theory. Resistance to the role of facilitator may be symptomatic therefore of a resistance to the underlying learning theory. “It may be that the teacher is receptive to technology but resists the accompanying change in learning theory” (p.28). On an epistemological level, resistance to technology can relate to the teacher’s view of knowledge:

Teaching with technology can help to bring about student responsibility for learning. Implicit in this shift is the subtle acknowledgment that knowledge does not exist in discrete chunks that can be transplanted from the teacher's head to the learner's. Resistance to using computers for high-level student-centered activities may not be a resistance to “technology” at all. It may be an uneasiness with the change in the way knowledge and learning are defined: there is no 'absolute' knowledge and there may be more than one correct answer. (p.29)

Hannafin and Savenye emphasize the intricate, covert and complex nature of teachers’ thinking and beliefs. As other authors and researchers in this review have shown, technology use is linked with issues of learner control, authority and with epistemological and theoretical issues. Hannafin and Savenye remind us that we cannot effectively consider teachers’ beliefs about, understanding or use of technology without considering the underlying theoretical issues. As was pointed out in Chapter 2's review of the evolution of language learning and technology use in language teaching, how teachers view knowledge, the nature of learning, and their role are not only important in understanding how teachers use technology, but in understanding the approach that teachers take to language instruction in general. The following section of this review

considers the issue of teachers' beliefs about teaching and learning second and foreign languages.

### **3.6 Beliefs about Language Learning**

Johnson (1994) argues that the field of second-language education lags behind mainstream educational research in that it has neglected to focus adequate attention to the affective dimensions of second-language learning. Only since the late eighties and early nineties have researchers begun to shift from studying effective teaching behaviours, positive learner outcomes, and teacher-student interactions to consideration of the influence of teachers' thoughts, decisions and judgements on second-language instruction. Such research is necessary to understand why teachers make the decisions they do and why they choose certain instructional materials over others or why they prefer certain practices over others.

Johnson conducted a qualitative study of the preservice beliefs of four English as a second-language teachers. Beliefs were inferred from teachers' narratives, intentions and instructional practices. One of the more important implications of the findings of this study was that the teachers' beliefs were largely based on images from their formal language learning experiences and that these beliefs may have been responsible for the teachers ineffectual teaching practices. The four teachers in the study criticized their own teacher-directed instructional practices. At the same time, "they described feeling powerless to alter their instructional practices because they had few, if any, alternative images of teachers and teaching to act as a model of action" (p.449). Feelings of being overwhelmed by classroom restraints and issues related to classroom management led to more teacher-centered instruction in spite of the desire to want to have more student-centered teaching. Freeman's (1991) findings of a study of the evolution of perceptions and understandings of four foreign language teachers are similar in many ways to Johnson's findings. Issues of classroom management led to tension in teachers' thinking. As foreign-language teachers, the study's participants understood the need for genuine and spontaneous interaction in order to promote language development. Yet,

with class sizes of 20-30 adolescents, spontaneous interaction resulted in discipline problems and required teachers to provide more control and discipline.

Williams and Burden (1997) affirm that teacher beliefs play an important role in the language learning process and that, for this reason, teachers must understand their own beliefs, theories or philosophy. They argue that teachers must maintain a continuous process of personal reflection and that it is by becoming aware of their beliefs that they come to understand their own “implicit educational theories and the ways in which such theories influence their professional practice”. The authors also posit that, although a syllabus or curriculum may be set down precisely for teachers, it is personally shaped by the teachers’ own belief systems. The authors explain:

Teachers’ beliefs about what learning is will affect everything they do in the classroom, whether these beliefs are implicit or explicit. Even if a teacher acts spontaneously, or from habit without thinking about the action, such actions are nevertheless prompted by a deep-rooted belief that may never have been articulated or made explicit. If the teacher-as-educator is one who is constantly re-evaluating in the light of new knowledge his or her beliefs about language, or about how language is learned, or about education as a whole, then it is crucial that teachers first understand and articulate their own theoretical perspectives. (p. 56)

A similar argument is put forth by LeLoup (1995) in her longitudinal study of the evolution of beliefs of preservice language teachers. LeLoup’s study is premised on the argument that students who enrol in foreign-language methods’ courses already have a set of beliefs about language learning. These beliefs are formed by their “internalization of how they were taught and their perceptions of how they learned” (p. 137). These beliefs often result in teachers having misconceptions about language learning which could not only negatively impact on their understanding of the course content, but which could, as well, impinge on their success as FL teachers.

For this reason, argues Leloup, it is important that these beliefs be identified and examined and that erroneous concepts and myths be replaced by “sound language learning theory”. The study on language learning beliefs combined a Likert-type questionnaire with a more descriptive, open-ended questionnaire. LeLoup concluded that while some of the

beliefs held by preservice teachers represent “accurate appraisals of the knowledge base in language learning”, others represent “FL learning myths” that need to be informed and revised according to second language acquisition research. Many of the beliefs held by the preservice teachers underwent revision by the end of their FL methods’ course.

Woods (1996) considers how teachers’ beliefs, assumptions and knowledge shape their understanding of teaching and their decisions. Through interviews, teachers’ stories and video-recordings of their lessons, Woods contributes to the knowledge of second-language teaching by clarifying how teachers’ beliefs, attitudes and experiences influence classroom practices. His perspective contrasts somewhat with LeLoups’ in that he argues strongly in favour of recognition and acceptance of teachers’ personal pedagogies and multiple interpretations of theory and top-down curriculum. He further argues that there is insufficient research “on what the second language teacher brings to the process of second language learning” (p.2).

Woods found that, given a new curriculum and two different teachers, two very different interpretations result in the course to be taught. Teachers’ underlying beliefs, assumptions and knowledge (BAK) about “what language is, how it is learned, and how it should be taught” resulted in differing classroom experiences for the learners. Given a new curriculum, the two teachers in his study experienced conflict between interpreting the curriculum in a way which would be consistent with his BAK as opposed to interpreting it in a way that would be more consistent with the “institutional system”. Woods found that, not only do teachers interpret curriculum innovations in light of their BAK, they also interpret theoretical and pedagogical concepts related to second-language learning.

The study suggests that “each teacher has an individual system of interwoven beliefs, assumptions and knowledge, a system which has evolved in an individual and organic fashion when aspects of that teacher’s BAK have interacted with experience, especially experiences that resulted in a conflict with the BAK’s current state” (p. 248). Woods affirms as a result of his investigation that while teachers’ BAK influences their interpretation of the curriculum in the case of a curricular evolution, the curriculum itself

influences the evolution of a teacher's BAK. The overall role of a teacher's beliefs assumptions and knowledge is emphasized by Woods as he comments on their "pervasiveness":

It was not as if teachers' networks of beliefs, assumptions and knowledge were activated in particular cases in order to resolve ambiguous cases or deal with conflicting situations. Rather it seemed to underlie everything that the teachers did and said: as if it was through their individual BAK systems that the teachers structured their perceptions of the curriculum and their decisions as to how to implement that curriculum, from overall organization of the units down to the specific classroom activities and verbalizations. (p.282)

### **3.7 The Contribution of this Study**

This review of the literature has drawn attention to the importance of beliefs in the teaching process. The present study provides a definition of beliefs which emphasizes the importance and value of teachers' personal knowledge, pedagogies and theories as a means of gaining insight into the complex world of teaching and learning. A significant body of research has focused on the area of beliefs and change. Nespor's (1987) work as well as that of Rokeach (1968) has emphasized the ability of beliefs to resist change. The conclusions of the Apple Classrooms of Tomorrow Project also address the issue of change in beliefs. The ACOT conclusions relate more specifically to the focus of the present study. The project's notion of the "altered context" as a catalyst for change parallels the premise of this thesis. It is the "altered context", the new territory or new environment, that challenges traditional beliefs. This study takes an ecological perspective in its attempts to understand the relation of teachers' beliefs to traditional and online learning environments. The important contribution of this study is the emphasis placed on understanding teachers' beliefs in relation to online environments or an altered context. Unlike the ACOT study, the present study does not focus solely on teachers who are working presently with technology. The present study was interested in capturing a range of beliefs about teaching and learning FSFL in online environments and therefore included them in this study. No doubt there are teachers who, while they are familiar with

online environments, have chosen not work in them because of their beliefs. This study aims to capture the beliefs of these teachers as well as those who are familiar and experienced with working in online environments.

A further contribution to the understanding of teachers' beliefs made by this study is the attempt to relate teachers' beliefs about teaching FSFL to a historical and conceptual framework, or context of approaches to language teaching and to use of technology in teaching FSFL. Rather than simply categorizing teachers' beliefs as being either constructivist or behaviourist as some studies might do, this study will aim to understand teachers' beliefs in relation to a larger, more complex framework that encompasses the entire context for language learning throughout the century with and without technology. Included in this framework is an outline of a vision of learning FSFL in the 21<sup>st</sup> century which is based on a constructivist approach and which is facilitated by online learning.

While there is a significant amount of research and literature that seeks to explain the role of constructivism in teaching and learning, there is little research that considers constructivism in relation to FSFL learning. The present study's focus on constructivism in relation to language learning represents therefore one of the few attempts at understanding the relationship of this theory of learning with second-language learning. This study recognizes that constructivism is a sufficiently broad theory to allow it to encompass a wide variety of domains beyond those of science and mathematics.

A further contribution of this study is its attempt to understand teachers' beliefs about using technology in relation to a particular content area or domain. Many studies will focus on teachers' beliefs about computer or technology use. This study recognizes that teachers use technology generally to deliver a particular content or focus on a specific content area. While the inclusion of the content area makes the study more complex, it parallels more closely the complexity inherent in teaching and learning. The present review of the literature uncovered no such studies. The present study is very broad and has a large scope. Such an approach was deemed necessary and important in order to gain a first insight into this complex and new area.

A final but significant contribution of this study to our knowledge about teachers' beliefs relates to the focus of the study. Studies on teachers' beliefs often tend to focus specifically on the teachers themselves profiling for example the system of beliefs held by individual teachers. Such studies are important and necessary in order to understand systems of beliefs and how beliefs affect practice. This study focused on individual beliefs while still recognizing the fact that individuals possess belief systems which house all the beliefs of that individual and that these systems represent complex organizations consisting of discrete sets of inter-related concepts (Wehling & Charters, 1969).

While it might appear beneficial to study entire systems of beliefs, such a focus may provide ambiguous results. As Klien (1996) observed, teachers' beliefs can be eclectic which means that teachers may hold contradictory sets of beliefs. For example, they may hold beliefs which reflect, at the same time, a constructivist and a transmissionist philosophy. This should not be surprising since teachers' beliefs or implicit theories are unlike official theories in that they are not organized into a coherent body of knowledge or an interrelated set of propositions or principles. Identifying particular, individual beliefs may assist in better understanding belief systems in general and the contradictions often inherent in them. Understanding individual beliefs can help to identify those beliefs which may be more central to a particular learning theory. On a practical level, an understanding of individual beliefs can assist in the design of professional development sessions.

### **3.8 Conclusion**

The literature considered in this review reminds us of the importance of beliefs in understanding the behind-the-scenes realities of what happens in the classroom. More importantly, the review provides us with a preliminary perspective on how teachers respond to new ideas, knowledge, new theories and technologies. Many of these studies will no doubt serve as useful points of comparison and as a means of understanding some of the beliefs in the present study.

Along with the literature which was reviewed in this chapter, we have a

conceptual and historical framework on which we can draw in order to interpret teachers' beliefs about teaching and learning FSFL in OLEs. This framework draws on existing knowledge about methodological approaches used throughout the last 100 years in language teaching. It also draws on our current knowledge about use of technology in second-language instruction. The role of the theories of behaviourism and constructivism in technology use and in second-language instruction is also highlighted. Such background knowledge about "official theories" will assist in our understanding of teachers' "implicit theories", personal knowledge or cognitive maps which they use to respond to reality.

One important contribution which this study makes to the literature on teachers' beliefs about teaching and learning FSFL in OLEs is the use of technology to collect data. Through one-to-one, one-to-many, and many-to-many conversations and discussions, teachers are given the opportunity to reflect on, share and articulate their beliefs. The methodology used in this study is unique, not only because it has not been used in other studies to gather beliefs but because of the way in which the methodology suits the topic. Using online environments to gather beliefs about online environments seems a logical approach to adopt. Not only is it logical, it is also innovative and effective. The following chapter explains in detail how the techniques of multiloguing, dialoguing and monologuing are combined in order to state what would otherwise be tacit, to make explicit the implicit, to make known what would otherwise be unknown, to reveal that which is hidden.

## **Chapter 4**

### **Methodology:**

### **Making Sense of a Teacher's Complex World**

We do not describe the world we see;  
we see the world we can describe.  
(Senge, 1995)

#### **4.1 Introduction**

The methodological approach chosen for this study is multifaceted relying on a variety of means to probe and profile the beliefs of teachers. The potential of the Internet as a tool for research is exploited by the present investigation which relies on an online discussion list, e-mail correspondence and questioning to collect data. The study also included use of a more traditional research technique, that of a mail-out, open-ended questionnaire. The investigation privileges teacher talk through multilogue, monologue and dialogue in order to make explicit and articulate the tacit. The multiloguing or discussion is accomplished through use of an online discussion list. The monologue is represented by the use of questionnaires. The dialogues are one-on-one exchanges that took place between the researcher and select participants in both the discussion list and the questionnaire. The data are collected and analyzed within the historical and conceptual framework outlined in Chapter 2 of this study.

The questions that guided the research are as follows:

1. What are some of the beliefs of teachers of FSFL in relation to teaching and learning in online learning environments?
2. What do these beliefs reflect in terms of the evolution of approaches and use of technology in the teaching of FSFL?

This chapter describes in detail the approach taken to the investigation of these questions. For each method used to collect data, a description is provided of the procedures, participants and the characteristics of the method. Prior to the description is

an overview of the general research paradigm as well as a discussion of the particular challenges related to studying beliefs.

#### **4.2 Multiple Worlds: Research Paradigm**

In his discussion of paradigms and research programs in the study of teaching, Shulman (1986) highlights the complex nature of the world of teaching:

I begin with the assumption that there is no “real world” of the classroom, of learning and of teaching. There are many such worlds, perhaps nested within one another, perhaps occupying parallel universes which frequently, albeit unpredictably, intrude on one another. Each of these worlds is occupied by the same people, but in different roles and striving for different purposes simultaneously. (p.7)

Schulman's assertion fits well with the epistemological framework or perspective of the present research. This investigation is premised on the notion that a teacher's world is a diverse and complex phenomenon. It assumes not a linear, rather a cyclical or circular direction of causality in the chain of behaviors of students' and teachers' classroom actions. Furthermore, it considers of primal importance the experiences of individuals and the meanings and interpretations they attach to these experiences. Learning is understood as being the social negotiation of shared meanings and interpretations which groups of individuals construct based on experiences and interactions with their environment.

Research is seen as a means of gaining insight into these experiences in order to understand the meanings of events and not to influence them. This inquiry is thus interpretive and reflective. It does not attempt to explain how things work, nor does it attempt to predict how they might work. The orientation of the present research aims to understand the meanings which individuals in a particular context have evolved. Specifically, it seeks to understand some of the underlying beliefs or implicit theories of teachers. It attempts to make sense, to understand, to make more explicit, this underlying aspect of teachers' complex world.

The present study can be described as “interactive” in the sense that the researcher actively participates in the discussion list along with the other participants. While the

researcher's role in the list may be more of a leader and an individual who prompts others, the role nonetheless involves active participation. Such research can be described more specifically as ethnographic. Ethnography can be defined as "analytical description of social sciences, individuals, and groups that recreate their shared feelings, beliefs, practices, artifacts, folk knowledge, and actions" (McMillan & Schumacher, 1997, p.427). Ethnography is a form of "naturalistic enquiry" (Taft, 1988). The emphasis on subjective realities as the focus of the investigator's attention has much in common with the philosophy of naturalism which purports that "there exist multiple realities which are, in the main, constructions existing in the minds of people" (Guba & Lincoln, 1988, p.81). These multiple realities are synonymous with Shulman's (1986) multiple worlds described in an earlier section of this chapter. The role of the researcher as ethnographer is to observe these multiple realities, to articulate, interpret and reconstruct them (McMillan & Schumacher, 1997).

The methodological approach adopted is designed to take into consideration the challenges related to investigating beliefs. Innovative and non-obtrusive techniques are required to elicit tacitly held beliefs and to provide an environment in which teachers will be encouraged to reflect on and articulate their beliefs. Many approaches might or could have been used to probe and profile teachers' beliefs. However, ensuring the integrity of these beliefs has to be a guiding factor in the choice of methodology. The present research model has been designed specifically to ensure the integrity of the beliefs and to provide teachers with an optimal opportunity to reflect and articulate their beliefs. The following section describes in detail the challenges related to studying beliefs.

#### **4.3 Hidden Worlds: Challenges Related to Investigating Beliefs**

Much of educational research has traditionally focused on teacher actions which represent observable and measurable phenomena that lend themselves easily to empirical research. Beattie (1995) notes that the major goal of this research was to determine the effects of teacher actions and performance on student achievement. Brophy and Good (1986) describe this type of research as process-product studies. Such research typically

concerned itself with causality and was conducted using quantitative research methods. Fang (1996) notes that this research was conducted under laboratory or contrived conditions and describes it as follows:

[Such] research assumed that the relationship between teachers' actions and their observable effects is linear and unidirectional. Data analysis was relatively decontextualized and objectified in a search for positive, generalizable principles which can be used to formulate teaching and learning theories. Statistical procedures used in these studies were often correlations and analysis of variance. (p.48)

In recent years, advances in cognitive psychology have resulted in a shift away from process-product studies towards a growing interest in understanding teachers' thought processes (Fang, 1996). This tendency has led to various attempts at investigating teacher beliefs. However, focusing on what happens inside teachers' heads presents certain obvious research challenges. Pajares (1992) argues that the construct of belief does not lend itself easily to empirical investigation. Beliefs have a very covert nature, might not be observable and even the teachers holding them may not recognize them (Milne & Taylor, 1995). Teachers' beliefs are often tacit and inarticulate (Driver & Erickson, 1983). They belong to the area of thought processes that occur inside heads and are thus unobservable in the same way that behaviour would be (Clark & Peterson, 1986).

Kagan (1992) has identified a number of challenges related to studying beliefs. She notes that they cannot be inferred directly from teacher behaviour, because teachers can follow similar practices for very different reasons. Furthermore, notes Kagan, "much of what teachers know or believe about their craft is tacit. For example, teachers are often unaware of their own beliefs, they do not always possess language with which to describe and label their beliefs..." (p.66). She therefore cautions against a style of direct questioning such as "What is your philosophy of teaching?" and characterizes it as "an ineffective or counterproductive way to elicit beliefs" (p.62).

Varying approaches have been taken by researchers in their attempts to understand teacher beliefs. One of the more common approaches is the use of Likert-type questionnaires to which teachers indicate agreement with direct statements on beliefs.

Another approach is that of forced-choice options that require teachers to endorse a particular option. Such approaches, however, are unlikely to provide an accurate indication of teachers' beliefs. Munby (1984) points to a number of drawbacks to such approaches to studying beliefs:

While the items of the instrument generate a response, they may be doing so not because the teacher would necessarily have thought of the belief represented by the items but because the test developer did. In other words, the scores represent what the teacher says is believed when he or she is physically presented with various beliefs of interest to the researcher (and possibly identified by many other teachers), and these do not necessarily correspond to the beliefs which are paramount to the individual teacher's handling of the immediate and unique professional environment. (p.29)

Like Kagan, Woods (1996) emphasizes the tacit nature of beliefs and the difficulties of accessing them. Even in an interview situation, direct questioning can produce misleading results:

...beliefs (and their interrelationships) may not be entirely consciously accessible, and teachers may, in responding to questions about generalized beliefs, answer according to what they would like to believe, or would like to show they believe in the interview context. When a belief or assumption is articulated in the abstract as a response to an abstract question, there is a much greater chance that it will tend more towards what is expected in the interview situation than what is actually held in the teaching situation and actually influences teaching practices. (p.27)

A further problem arises, according to Woods, in relation to the way in which the questions may be posed. Terms like *whole language* can have varying meanings for different individuals and their use by the interviewer may be misleading. As Woods explains "...language teachers know a lot about themselves in language teaching situations, but although they have had the experiences, they may not have categorized and labeled them. Therefore using abstract questions, symbols and categories that the interviewer might feel comfortable with may not allow themselves to express what is important to them" (p.27).

Fang (1996) expresses a similar concern about the approach of much of the research on teachers' thought processes and beliefs. He posits that studies of teacher

cognition and beliefs must address the personal experiences of teachers and their influence on shaping these beliefs. He recommends approaches such as life history, narrative, and autobiography in order to capture the complexities of teacher beliefs. Woods makes similar recommendations and proposes investigating the contexts of what he refers to as teacher stories about events, behaviours and plans. Munby (1984) argues that special attention needs to be given to providing teachers with opportunities to talk about fundamental beliefs.

The present study recognizes the challenges related to studying beliefs. It is in recognition of these challenges that the research was designed. Emphasis in the research design is on providing a means or mechanism to allow teachers the opportunity to bring to the surface their own theories, personal knowledge, or beliefs about the teaching of FSFL in online learning environments. The study has taken a broad focus as a means of providing an initial foray into an area about which little is yet known. Expressed in this study therefore is an interest in understanding the beliefs of both teachers who do and do not operate in OLEs. The broad range allows for an understanding of the beliefs of those who may value and those who may not value the use of the Internet in the teaching of FSFL. The study allowed for participation from a wide range of teachers from diverse educational and geographical backgrounds. At the same time, the study provided an opportunity to probe more deeply into the beliefs of a certain number of the study's participants.

An approach often taken to the study of teachers' beliefs is to focus in on a small number of three or four teachers and to probe their beliefs in-depth. The present study takes a very different approach. The study's data collection techniques allowed the opportunity to probe in-depth the beliefs of certain participants. The teachers involved in the study were able to participate in the large group discussion where many issues were raised and a broad range of topics discussed. However, at the same time, these teachers' beliefs were also probed in a more in-depth fashion through individual dialogues conducted via e-mail for the discussion participants and via telephone for the questionnaire participants. The range of topics generated allowed the researcher to capture

a broader range of beliefs than might have been possible if only three or four individuals participated in the study. The following section provides a brief overview of the data collection techniques.

#### **4.4 Overview of Data Collection**

The data were collected over a period of ten months i.e., from September, 1998 to June, 1999. Two primary methods were used to collect data for this study:

1. a French online discussion list and an English online discussion list
2. an open-ended, mail-out questionnaire

The English and French discussion lists were comprised of teachers from more than four continents but primarily from North America. The questionnaire was circulated among teachers of FSFL in the province of Newfoundland and Labrador, Canada. Comments made by participants in the discussion list inspired questioning or probing in the questionnaires. Some of the comments made in the questionnaires were recirculated by the researcher in the discussion list. Thus, the research could be described as cyclical and integrated, with each method of data collection influencing the content of the other methods.

In-depth probing, or *dialoguing* as it will be referred to in this study, formed a secondary means of collecting data. Sixteen participants from the discussion list were involved in e-mail *dialogues* with the researcher in order to gain further insight into individual beliefs. In the case of the questionnaires, five of the respondents were selected to participate in dialogues or interviews with the researcher. The following sections of this chapter describe in detail, the participants, procedures and instruments used in this study. (See Appendix A for a summary of the study's research methods).

#### **4.5 Discussion List: Multilogue and Dialogue**

This section provides in-depth information on the use of discussion as a means of favouring teacher talk, reflection and of bringing teachers' implicit beliefs to the explicit level. Comparisons will be made throughout this section in order to highlight the

similarities and differences between online discussions in asynchronous time and face-to-face discussions in synchronous time. An overview will be presented of the participants in and procedures of the online discussion that took place in the context of this study. The individual dialogues or discussions will also be explained.

#### **4.5.1 Discussion List: Definition and Characteristics**

Of all types of sustained direct oral communication, none is more common or important to our way of life than discussion (Brilhart, 1978). The following definitions of a discussion indicate the many interpretations that can be given to the term. These definitions also highlight many commonalities. The definitions include:

- a process of *shared* talking and listening by two or more people; (Brilhart, 1978, p.3)
- a small group of people talking with each other face to face in order to achieve some interdependent goal, such as increased understanding, coordination of efforts, or a solution to a shared problem; (ibid. p.5)
- a form of group dialectic; (ibid. p.7)
- the purposeful, systematic, primarily oral exchange of ideas, facts, and opinions by a group of persons who share in the group's leadership; (Potter & Anderson, 1976, p. 1)
- ...one or more meetings of a small group of people who thereby communicate, face to face, in order to fulfill a common purpose and achieve a group goal; (Borman, 1975, p.53)
- an effective technique for intelligent and productive self-expression. (Bergevin & Morris, 1965)

These definitions were created at a time when the online discussion was a yet non-existent phenomenon. It is therefore easy to understand why many of the authors cited above relied on the importance of face-to-face contact in their definition. In this age of asynchronous communication facilitated by the many tools of the Internet such as e-mail, the World Wide Web, chat rooms, MUDs and MOOs, discussions can occur without the

need for either physical or temporal proximity. Thus, for the purposes of the discussion that formed a major part of the research method of this study, the face-to-face element need not figure as part of the definition. Using these clarifications and with reference to the established definitions listed above, the discussion used in this study can be defined as follows:

A purposeful and systematic exchange of experiences, anecdotes, personal knowledge and implicit theories, by means of electronic, asynchronous, written communication by a group of teachers sharing a common interest in the teaching and learning of French as a second or foreign language in online learning environments.

There are numerous differences between a “live” discussion and an online discussion. The elements of time and distance play no role in the online discussion. E-mail discussion operates in asynchronous time whereby “messages are either e-mailed or posted on a system where, upon login, users are notified of the new postings they have not yet accessed” (Bush, 1996, p.2). Discussions are frozen on the hard drives of the participants and the discussion can be entered into at an interval convenient to the participant (Logan, 1995). The characteristic of asynchronicity means that participants do not have to be logged onto the computer system at the same time in order to communicate, thus freeing them from time and distance limitations. Asynchronicity also allows either reflective or spontaneous interaction (Harasim, 1986, p.6). In terms of distance, whether the discussion list member sends a message from 500 or from 50 miles away, the resulting message and relative speed of its delivery are the same. Physical presence is not a requirement for online discussion which has the capacity to “unite” a geographically dispersed group of individuals. In an online discussion, participants “share a common corner of cyberspace rather than sit at a banquet table” (Logan, 1995, p.276). The absence of physical presence means that members of the discussion cannot see each other.

Absence of physical presence has important implications for the discussion. The benefit of freedom from spatio-temporal limitations allows for more interaction and flexibility in communication among members and thus potentially more exchange of

ideas, increased participation and variety of interchange (McComb, 1993). The fact that the communication is taking place online has important implications for the amount and types of participation. "The time for reflection and the distance of the written interaction allow the slow thinker or shy person opportunity to interact just as much as the quicker or bolder person, who can, however, still interact at his or her own pace without having to wait for permission" (McComb,1993, p.8). While some might argue that online discussions are limited by lack of physical interaction, others see significant benefits to the freedom of spatial limitation. Feenberg (1987) considers the advantages of computer-mediated communication (CMC):

CMC users often feel they gain a more immediate access to each other's thought processes, undistracted by the status signaling and social games that are played simultaneously with speech in face-to-face encounters.... ordinary individuals possess the 'literary' capability necessary to project their personalities in written texts. The loss of the interlocutor's bodily presence does not signify impersonality, but freedom from undesirable social constraints. (p. 174)

Computer-mediated communication facilitates a greater equality of participation than does a face-to-face discussion. Such communication can benefit most those who would normally be shut out of the conversation because of shyness but also because of other factors. In a review of the literature on computer-mediated collaboration, Warschauer (1997a) summarizes some of the findings related to the equalizing nature of computer-mediated discussions. He explains that factors related to race, gender, status, handicap, accent or status do not impact on the discussion. Certain non-verbal clues such as frowning and hesitating which might normally serve to intimidate certain participants are eliminated. Finally, individuals can contribute at their own time and pace.

Another characteristic of online communication that distinguishes it from its real-world counterpart is its oral nature. In spite of the fact that communication via e-mail is written, the style of communication in an online discussion bears more resemblance to oral communication. Logan (1995) explains:

The protocols and rituals associated with the use of the Internet are not the formal patterns characteristic of literate communication but are more like

those of an oral society, despite the underlying literate substrata that infuses the use of computers. The primary mode of communication, e-mail, is written, but, in contrast to traditional literacy, the form of writing is not formal. Grammatical structures are frequently relaxed and shorthands and jargon are liberally used. The writing is frequently infused with hieroglyphic signs used to connote feelings and tone and are meant to replicate the kind of information that facial gesture and vocal tone convey during face-to-face conversation. (p. 268)

Shank (1993) likens Internet communication to a conversation. He notes that messages tend to be informal and phrased in conversational form, and can engender a great deal of interchange. He also distinguishes the online discussion from all others through his reference to the term "multiloguing". Shank distinguishes between three types of conversation: the monologue where "there is only one sender, and one or more multiple receivers who listen passively to the message of the sender"; the dialogue whereby "the sender and receiver take turns" (p.2). The third type of conversation is the discussion whereby "we have one person who starts as the sender, and multiple receivers. While it is important for the receivers to take turns as senders, in the discussion, the initial sender still retains control of the conversation" (p.2). However, argues Shank, these models of monologue, dialogue, discussion, do not capture the dynamics of Internet communication. For this reason, he claims, a new linguistic model is needed - that of the multilogue:

In the multilogue, we have a number of players. We have the starter, or the initial sender, who starts the "thread" (a well-established Net term, by the way). Once a thread has been started though, it is no longer under sender control. This is because the mechanics of Net response do not require turn taking. From the oral side, it is as if everyone who is interested in talking can all jump in at once, but still their individual voices can be clearly heard. From the written side, it is as if someone had started writing a piece, but before he/she gets too far, people are there magically in print to add to, correct, challenge, or extend the piece. Therefore, what we have is a written quasi-discussion that has the potential to use the strengths of each form. Since the "feel" of Net communication is still oral, I think it is best to call this form of communication "multiloguing", to retain the link with its oral heritage. (p.3)

The pattern of communication or conversation in the online discussions that took place in the context of this study's discussion lists can be described as multiloguing. The researcher served most often, though not always, as the starter. The participants developed the thread such that the researcher as participant-observer needed to intervene to maintain momentum, to start a new thread where necessary, to probe further or to request clarification. Multiloguing served as an effective technique for ensuring a context in which teachers could "talk", share ideas, opinions, questions and debate without too much intervention by the researcher.

Besides defining the term discussion, it is important to understand in detail its characteristics. Hyman (1980) highlights seven such characteristics. The first of these characteristics is that of the discussion as a social activity whereby several people react to each other. A minimum group of five individuals is necessary to provide the opportunity to talk and yet allow some shifting of roles within the group. Secondly, a discussion is also a cooperative endeavor without winners or losers unlike the argument and debate which thrive on competition. Thirdly, unlike the free conversation among friends, the discussion can be distinguished by reason and purpose and a focus on an agreed-upon topic. Participants are required to think reflectively and to weigh arguments. The characteristic of being systematic implies that there will be some progression in the discussion. The fifth characteristic of the discussion is that it is creative. It is through the participants asking of, responding and reacting to questions, that remarks are shaped and that the discussion is created. A discussion requires participation. Active, attentive listening as well as active responsive speaking constitutes a sixth characteristic of the discussion-that of participation. The speakers and listeners constitute the integral participants. The discussion benefits from a broad range of participants.

The online discussion conducted in the context of this study followed a systematic exchange among teachers. The discussion provided them with the opportunity to reflect on their practices, the curriculum, their theories and knowledge. Through a cooperative sharing of ideas and experiences, teachers were able to respond and react to each other, to weigh arguments, ask questions, compare practices and ideas, express concerns and

clarify issues in order to better understand how best to work and learn in OLEs. Providing teachers with the opportunity to talk about their experiences, theories and knowledge meant that they were having to reflect on their practice as well as on the environment in which they work. Such reflection brings closer “to the surface” issues, knowledge, theories, ideas and feelings that might otherwise have gone unexplored, unquestioned and unnoticed. Teachers were guided in this process by the researcher who served as a leader of the group discussion.

A discussion requires leadership in order to keep it focused, rational, purposeful, creative, systematic and participatory. The leadership of the discussion may take at least three different forms: that of the leader-centered group, the leader-guided group or the group-centered group (Hyman, 1980). In the first group, it is the leader who provides the motivation and direction and makes decisions for the group. The leader functions like the hub of the group without whom the group might cease to function. It is the leader who chooses the topic, sets the tone and focuses the discussion. In the leader-guided group, the leader functions as a facilitator who guides the discussion, contributes facts and opinions, clarifies ideas and raises questions. The third type is the group-centered group in which case there is no official leader. Instead, all members function as leader so that the discussion is not focused by one person rather each participant is responsible for providing the focus.

Specific discussion skills are required in order to lead the discussion. Hyman lists six skills which he identifies as being necessary to ensure an effective discussion. The first of these skills, that of contributing, involves supplying requests for information, providing information not provided by the participants themselves, offering opinions, and suggesting new ways to view a point. Crystallizing is the second important skill for the discussion leader and essentially involves stating concisely, summarizing or interpreting the remarks of the participants in order to get at both the explicit and implicit, overall meanings. The leader may clarify statements made, offer alternative ways of perceiving meaning of remarks or offer a reflection on remarks. The third skill is that of focusing or putting the discussion on its intended course and ensuring that progress is

made in the discussion. Focusing may also involve linking remarks with previous remarks, setting limits on what can and cannot be discussed.

In addition to the three leadership skills is the skill of introducing/closing the discussion. Introducing the discussion involves getting it off the ground by presenting the topic while closing the discussion involves ensuring that the discussants have a sense of satisfaction about their participation. The introduction also provides an important opportunity to deal with procedural issues related to the discussion. Closing the discussion involves more than ending it. A summary or recapitulation of the important points made along with suggestions for future discussions are important parts of the closing process. Participants can also be asked by the leader to perform the role of summarizing the highlights of the discussion. The fifth discussion skill is that of questioning or probing which serves to stimulate greater participation by the discussants and allows opportunities to solicit further opinions, explanations or generalizations or to explore relationships between ideas and remarks. Mixing the skill of questioning with other skills allows the leader to avoid dominating the discussion by interrogating. The final, but not the least important skill for the leader, is that of supporting. Praise, humorous remarks, and facilitating participation by shy or inactive members or even reducing any tension in the discussion constitute different ways of supporting.

The discussion that took place in this study could be described as a leader-centered discussion. The researcher functioned like the hub of the group, providing the topic, focus and direction of the discussion. The skills of contributing, crystallizing, focusing, introducing, closing and questioning were exercised in order to ensure the flow of participation, and to elicit comments, and remarks that would provide insight into teachers' beliefs. As leader, the researcher also had to ensure that the motivation in the group remained sufficient to ensure continued participation of members. Members no doubt needed to feel that the discussion was of benefit to them in their attempt to better understand how to work and learn in the new environment of the Internet. The participants volunteered to join the group knowing that the ultimate purpose was to collect data on their beliefs. At the same time, a second purpose for them or incentive to

participate was that, in so doing, they might come to a better understanding of teaching and learning in OLEs .

The role of the leader in the discussion used in this study could also be characterized somewhat as that of the participant-observer. Brillhart (1978) describes the role of the participant observer in discussion groups:

The participant-observer is a person who is a regular member of the group, engaging actively in its deliberations, but who at the same time is observing, evaluating, and adapting to its processes and procedures. In terms of role, the participant-observer directs part of his attention to task functions and part to maintenance functions, trying always to be aware of what the group needs at the moment. (p.45)

In the role of participant-observer, the researcher did not actively engage in the deliberations except to provide questioning, probing, direction and focus. It was important, however, as participant observer, to observe, evaluate and to adapt the discussion in ways most conducive to making beliefs explicit. In this sense, as participant-observer, the researcher acted more as a leader-observer than a true participant. Certainly, the online, virtual nature of the discussion that took place in this study allowed the researcher to play a more invisible role than what might have been possible in a face-to-face discussion. In the online discussion, there is no physical presence of the participants or the leader. In the case of this discussion, the participants had never met physically. Instead, their interactions were all virtual - i.e. via their individual e-mail messages sent through the list. Thus the focus becomes less on who is delivering the message than on the message itself.

As leader and participant-observer, it was important to construct what Hammersley and Atkinson (1983) refer to as a working identity. This identity allows the researcher to exploit any relevant skills or knowledge that she possesses. In this way, the participants can perceive the participant-observer, not as an "exploitive interloper", but as someone who has something to contribute. To maintain the participants' interest and continued participation in the list, it was necessary for the researcher to provide such a contribution. This contribution took the form of suggestions of sites, contacts, resources,

answers to technical questions, some support with and feedback on projects and occasional summaries of information or research. A collaborative and cooperative tone was thus fostered in this discussion.

#### **4.5.2 Discussion List: Procedure**

Internet discussion lists can also be referred to by the generic term of mailing lists which is a collection of e-mail addresses (Carroll & Broadhead, 1994). Thus, any message sent to the list is automatically distributed to all members of the list in asynchronous time. Messages and information from mailing lists are distributed via regular Internet e-mail. Special software is not required to read or send a message to the list (Ibid.). Anyone with an Internet e-mail address can choose to join a mailing or discussion list. Mailing lists represent interest groups or topics of discussion (Falk, 1994) and constitute a convenient method for people on different computer systems from different parts of the world to discuss particular topics or share information. This study provided for discussion in both French and English by means of an English list called **CREDO** and a French list called **CREO**. Invitations to join CREDO were sent to six lists that relate to education and/or language learning (see Appendix B). Invitations to join CREO were also sent to six lists (see Appendix B). These lists in turn distributed the invitation to their members who would have immediately received the invitation to subscribe. Subscriptions were processed by a listserve (a specialized piece of software provided by the service provider) that managed the process of list administration (subscribing and unsubscribing). To send out a message to the list or to respond to any message on the list, subscribers needed only to send their message to `credo@stemnet.nf.ca` or to `creo@stemnet.nf.ca`. Haughey & Anderson (1998) explain how the listserve program manages the list:

A list server program maintains a list of the names and e-mail addresses of everyone who is subscribed to the list. The list owner has the capacity to restrict membership in any way that he or she chooses. When a list member wishes to send a message to the other members on the list, he or she composes the message on e-mail software and addresses it to the list. When the message arrives at the server, it is reposted to all the members.

Each member then receives a private e-mail message in his or her “inbox”. Replying to this message sends it to all the members of the list, which in turn supports e-mail interaction among many people. (p.23)

The questions and topics for the discussion came from various sources. Besides topics, issues or questions raised by the participants themselves, questions and topics were also generated from the topics and issues raised in both the review of the literature in Chapter 3 and the conceptual and historical framework in Chapter 2. The discussion lists represented a highly effective means of providing an opportunity for teachers to articulate their reflections, recount their experiences, present anecdotes, ask questions, provide comments and suggestions, express frustrations and seek and share advice. The discussion list was meant to be an indirect means to provide teachers with an opportunity to express beliefs. For this reason, the questioning did not focus specifically on beliefs but rather on issues that might generate a discussion in which beliefs would be indirectly expressed.

In terms of the postings, their frequency was irregular with an average of approximately four to five postings per week over a period of approximately 40 weeks. Certain threads of discussion might prompt numerous responses during a week-long period. Other threads or comments and questions raised by the researcher elicited few, if any, responses. The number of postings and their frequency was highly irregular and unpredictable. The total number of postings, excluding those of the researcher, exceeded 200 for the duration of the study. While some of these may have been as much as two pages in length, others were a few lines or several paragraphs long (for examples of participant postings see Appendix C). Not all discussion was initiated or directed by the researcher (for examples of postings by the researcher see Appendix D). Participants frequently asked questions or posted comments in reaction to the comments of others. The English list CREDO was more active than the French list which had fewer members and which represented a more geographically dispersed and diverse range of individuals who may have had less in common pedagogically than their counterparts in the English list.

#### **4.5.3 Discussion List: Participants**

All participants in the discussion volunteered themselves after having seen the invitation/announcement about CREDO and CREO which was sent out to other lists in the Internet (see Appendix B). Immediately following their subscription, participants were sent an initial message (see Appendix E), a welcome message (see Appendix F) outlining procedures for unsubscribing, a form indicating their willingness to participate in the study (see Appendix G) and guidelines for participation in the list (see Appendix H). As well, all questionnaires contained an invitation to participate in the discussion list. While some of the individuals who completed the questionnaire agreed to join the CREDO list, none posted any messages.

The participants represented a select sample or group in the sense that they would all possess a minimum level of skill in use of the Internet. To be able to receive the initial message, they had to have been already subscribed to a discussion list because it was through the discussion lists that the invitation was distributed. Participation in a discussion list implies that the user has established an Internet account, has achieved a basic comfort level in the use of e-mail and is familiar with how to subscribe to discussion lists. As such, the participants in the CREDO and CREO lists represented Internet users as opposed to non-Internet users.

Demographic information on the participants was provided by means of an introduction to the group which each individual was asked to provide using a "template" in the form of the introduction of the researcher to the group (see Appendix I). Not all participants adopted the format of the introduction template. Thus, some participants provided more demographic information than others. This study did not aim to focus on or control for any variables related to gender, experience, programs, or geographic location. The demographic information was necessary for both the researcher and the participants in order to contextualize certain comments particularly in relation to the grade and program that the individual was teaching.

The individuals came from diverse backgrounds with a range in teaching experience from pre-kindergarten to college and university level. The majority of

participants were, however, teaching school-age children. Core French and French Immersion programs were represented among the participants. Many of them had been involved in Internet projects and some were intensely involved in integrating the Internet into their teaching. Numerous continents were represented by the participants. While the majority of CREDO participants were from Canada and the U.S.A., there were also participants from Australia and Austria. In the CREO list, there were participants primarily from Europe i.e., France and Italy. However, there were also some participants from South America, Africa and Québec.

#### **4.5.4 Discussion List: Dialogues**

In the course of the discussion which ran for a period of ten months, it was often necessary or useful to contact certain participants individually i.e., without posting to the entire list. Such was the case, for example, when clarification was required on a point or when the researcher wanted to probe more deeply or even when the researcher wanted to encourage greater participation from a member of the group. As well, it was not uncommon for some participants of CREDO or CREO to send an individual e-mail to the researcher to request information on a topic, to express an opinion which, for participants' own reasons, they chose not to express to the entire group. This type of exchange is referred to in this study as dialoguing as opposed to the multiloguing exchanges which took place between all members of the group in the context of the discussion lists.

Besides the informal dialoguing that took place as described in the above section, a more formalized system of dialoguing was also incorporated into the discussion list. The purpose of the formalized dialoguing, like that of the informal dialoguing, was to probe more deeply into beliefs of some of the discussion list participants, to seek further clarification on comments made in the context of the list, to encourage participation and exchange and flow of "conversation". The primary difference between the informal versus the formal dialoguing was that the latter involved the same question sent out approximately once per week to each participant in the dialogue. The question served as

a catalyst for further questioning or dialoguing with the participant (see Appendix J for sample dialogue questions).

In terms of the participation in the dialoguing, 22 members of CREDO and 14 members of CREO each received an individual e-mail from the researcher inviting them to participate in dialogues (see Appendix K for the invitation). These 36 individuals were invited to participate based on a variety of factors. The majority were invited to participate because of what the researcher perceived as an ability on the participants' part to articulate their beliefs and experiences. Others were chosen with an aim to increase participation from a wider range of experience in terms of geographic location or programs. Whereas 16 of the 22 individuals invited from the CREDO list agreed to participate, no members of the CREO list agreed to join in the dialogues. We can speculate that as to why no CREO members agreed to participate. The general degree of participation on CREDO was greater than on CREO for the discussion list as a whole. As such, the researcher was more easily able to create a rapport with the participants of CREDO than with those of CREO. Although it cannot be determined conclusively that the rapport contributed to the willingness of participants to dialogue, it may have been a contributing factor in their decision.

For those who did agree to participate, their involvement amounted to responding to approximately one question every one or two weeks. The questions were determined by the researcher. In terms of the number of postings by individual dialogue participants, these were irregular. There were some weeks when certain individuals did not respond because they were unavailable for various reasons ( see Appendix L for an example of a dialogue posting or message). It is possible as well that they did not respond because the question was not meaningful for them or simply because they were too busy to find the time to respond.

The number of postings for the dialogue as well as the multilogue were irregular. Their length also varied considerably. While some may have been more than two pages in length, others were no more than a few lines. Certain threads of discussion for the multilogue or questions for the dialogue might prompt numerous responses during a

week-long period. Other threads, or questions raised by the researcher elicited few, if any, responses (see Appendix M for an individualized summary of the postings of the multilogue and dialogue participants). For certain participants, their multilogue and dialogue postings combined exceeded 20. Others exceeded 10 or 15 which represented a large amount of in-depth data (see Appendix N for a numerical comparison of the participation in the multilogue and dialogue). Those participants who posted little nonetheless provided an important peripheral contribution in the sense that their messages/postings often served to stimulate discussion in other participants.

#### **4.6 Questionnaire: Monologue and Dialogue**

The online discussion list provided an opportunity for teachers to reflect, share information, express concerns and to articulate their own theories about teaching and learning FSFL in online learning environments. Those who volunteered to participate in the online discussion list generally represented a group of individuals experienced in using the Internet. The fact that these individuals were willing and able to participate in an online discussion meant that they had to have a certain level of competency in the use of e-mail. Many of the participants were involved in Internet projects and some were even responsible for training other teachers in use of the Internet in teaching.

These teachers represented a select group who, it might be expected, would hold some similar beliefs about use of the Internet in teaching and learning. The aim of this study was not only to profile the beliefs of teachers who were comfortable and competent in teaching in OLEs, but also, to gain insight into the beliefs of those teachers who work in these environments very little or not at all. Even though these individuals do not work in these environments, they are still adequately familiar with them to be able to express their beliefs about them. It may well be because of their beliefs that these individuals do not choose to experiment with online learning environments. Thus, the beliefs of these individuals are important in building an understanding of teachers' beliefs in general. These beliefs provide a point of comparison to the beliefs of those who work frequently in online environments.

#### **4.6.1 Questionnaire Design**

In order to capture the beliefs of a wider group of teachers, a mail-out, open-ended questionnaire was used. The sampling for the questionnaire targeted a wide geographic range including all ten school districts in the province of Newfoundland and Labrador as well as a range in grades, programs and small versus large schools. The instrument (see Appendix O) included a consent form and a two-page questionnaire with eight, open-ended questions. The questions were designed to elicit responses that would reveal underlying beliefs. No attempt was made to ask explicit questions such as “What are your beliefs about the value of the Internet as a teaching and learning environment?”. Instead, the aim was to provide teachers with an opportunity to provide information on or to “discuss”, in general, issues related to the following:

- their approach to teaching with and without the Internet;
- the strategies needed by teachers and students for Internet use;
- the impact of the Internet on their teaching;
- their experiences in using the Internet;
- the types of activities in which they engage when using the Internet;
- why they do or do not use the Internet.

The questionnaire was designed to assist teachers in revealing implicitly their personal theories about the teaching of FSFL in online learning environments. The following section of this chapter outlines the procedures of the questionnaire.

#### **4.6.2 Questionnaire: Procedure**

The questionnaire was piloted by 11 individuals during the months of October and November, 1998. The participation in the pilot study was requested by the researcher. The individuals chosen represented a range of participant types and included a university professor, teachers in training, Core French and Immersion teachers. The most important changes made in the design allowed for wording that would accommodate users who either did not use the Internet or who used it little.

The questionnaires were mailed to French Program Specialists during the month of January and distributed to schools and the individual teachers through district mail. Teachers were asked to return the questionnaire by February 15<sup>th</sup>, 1999. This time of year was chosen to avoid the busier times of year such as at the beginning or end of year or reporting times. Each questionnaire included a return, stamped envelope as well as a small button with a slogan related to the teaching of French such as *J'aime parler français*. If the questionnaire had not been returned by the end of February, a follow-up letter was sent to the teacher (see Appendix P). If the questionnaire had not been received by the middle of March, a second follow-up letter and questionnaire were sent out (see Appendix Q). This letter also included an Internet address of a site created by the researcher where participants could complete the questionnaire online. The final response rate was approximately 68% with 88 out of 130 questionnaires returned.

#### **4.6.3 Questionnaire: Participants**

The questionnaire was distributed to 130 teachers from Kindergarten to grade 12 in the province of Newfoundland and Labrador, Canada. All ten districts were represented in the study. The districts represent ten geographic regions of the province including the island portion of Newfoundland as well as the mainland portion of Labrador (see Appendix R for a map). The regions represented include schools in urban as well as rural centres, large and small schools, centrally located as well as extremely isolated schools. The inclusion of all ten districts as well as a selection of schools from within the district was based on the premise that technology integration and teacher exposure to the Internet would vary based on a large number of factors some of which would include the size of school as well as its location.

A form was sent to French Program Specialists in each of the ten boards to request participation (see Appendix S). The Program Specialists were asked to choose teachers from as wide a range of schools as possible as opposed to choosing all the teachers from the one school. The selection included Core French and French Immersion programs and all grades from K-12. Using combinations of grades and programs (i.e. Core French K-3,

Core French 4-6, etc), each Program Specialist needed to select 16 teachers. Since some districts do not offer certain programs such as French Immersion at the primary level, they were not able to provide the researcher with a name of a teacher at that level. For this reason, specialists provided 130 names as opposed to the 160 requested (10 districts X 16 names).

#### **4.6.4 Questionnaire: Dialogues**

Recipients of the questionnaire also had the opportunity to participate in individual dialogues or questioning in the same way that participants in the discussion list were involved in individual dialogues with the researcher. The cover of each questionnaire contained a section inviting participants to participate in an online discussion and/or an interview. Twenty two individuals expressed an interest in participating in interviews. Five individuals from this 22 were selected to participate. These individuals were selected because they indicated in their questionnaires that they never used the Internet for teaching. Some of them had not used the Internet at all for any purposes. The discussion list profiled primarily the beliefs of individuals who were comfortable with online technologies and who were, in the case of many of the participants, teaching and learning using the Internet. An essential aim of the research was to capture a range of beliefs. The dialogues between the researcher and these five individuals provided the means of capturing beliefs of individuals, who, in terms of their online comfort level, were at the opposite end of the continuum of use as compared to the discussion list participants.

The dialogue was conducted using the telephone since the participants all lived in rural areas at some distance from the researcher. Our discussion began by talking about our experiences. The researcher as well as the participant, exchanged stories about professional and, sometimes, personal lives. Following the establishment of a basic rapport, the discussion centered around responses made in the questionnaire. From this discussion, we engaged in a more general dialogue about the Internet, its use in the classroom and, most often, the participants then talked about the challenges related to

Internet use. The dialogues could be described as open-ended and non-directive (Hammersley & Atkinson, 1983). The participant was encouraged to converse at length and on his/her own terms.

#### **4.8 Data Analysis, Coding and Categorization**

The purpose of analysis is to “make sense of the data” and to “make meaning” (Merriam, 1998, p.178). It is an “ongoing cyclical process integrated into all phases of the research” that begins with the data collection ( McMillian & Schumacher, 1997, p. 502).

As Merriam (1988) explains:

Data collection and analysis is a simultaneous activity in qualitative research. Analysis begins with the first interview, the first observation, the first document read. Emerging insights, hunches, and tentative hypotheses direct the next phase of data collection, which in turn leads to refinement or reformulation of one’s questions, and so on. (p. 119)

In the case of this study, there were seven stages of data analysis. In each stage, the data underwent a certain reduction and transformation. The stages which are each described separately in this section of the chapter, are as follows:

1. On-going analysis during data collection;
2. organization of the data;
3. reading of and conversation with the data;
4. data reduction;
5. descriptive coding leading to the presentation of the data;
6. pattern coding leading to the interpretation of the data;
7. thematic coding leading to conclusions and recommendations about the data.

The first stage was conducted during the gathering of the data. In the context of the discussion lists, ongoing analysis of participants’ postings led to the researcher’s posting of particular questions or comments. The analysis of the postings led, as well, to the formulation of questions for the dialogues with discussion list participants. A

preliminary analysis of the responses in the questionnaire led to the formulation of particular questions in the discussion list. Finally, analysis of the questionnaires led to the formulation of questions for the dialogue with the five questionnaire respondents.

The second stage of the analysis began once all the data had been collected from all sources. The aim of this stage was to organize the data into manageable formats. All the postings from the discussion list multilogues and dialogues were first organized chronologically and included the postings of the researcher. Such organization was necessary in order to follow the "train of thought" of the discussion. The total postings amounted to approximately 300 pages and filled two large binders. The questionnaires were assembled together into a binder but not according to any classification system.

The third stage of the research involved becoming familiar with the data that had been collected. Unlike the ongoing analysis where the data are viewed in isolated bits, this stage allowed for viewing of the data from a holistic perspective. The multilogue and dialogue postings as well as the questionnaires were read through several times. The tapes were played through numerous times. Merriam (1988) describes this stage of the analysis as one of "holding a conversation with the data, asking questions of it (sic), making comments, and so on" (p.131). Notes taken during this process comprised a preliminary organization and sorting which led to the following stage: that of data reduction.

The data collection yielded several hundred pages of postings, 176 questionnaire pages as well as approximately two hours of recorded telephone dialogues with the five questionnaire participants. Some data could not be used because of risk to anonymity of informants. Reporting of certain comments made would have possibly revealed the identity of some of the participants. Many pages of data could be compressed because of the nature of discussion list postings. On occasion, an individual's response may have constituted only two or three lines. However, their message may have comprised as many as two or three pages because of the identifying headers, signature files, and, most of all, because, they were replying to previous comments made and these comments were included in their message. Thus, once the postings were printed, it became obvious that

there was considerable repetition of postings. Other postings were not relevant to the issue. For example, at one point in the discussion, a long posting was made by one participant in relation to an ongoing political dispute between the United States government and a middle-eastern country. Other postings were of a personal nature or simply unrelated to the discussion whereby individuals may have related anecdotes, described their education, or asked questions related to personal issues. Finally, the postings of the researcher were removed from the collection of data.

Reduction or elimination of material from the discussion list postings could be easily accomplished. The entire collection of postings from CREDO and CREO could be retrieved as one file from an archive created on the computer of the service provider. The files were imported into a word processor where cutting and pasting allowed for easy organization of the data. Any data not relevant to the study were cut from this file. Headers were removed, repeated postings were deleted, signature files removed and comments from the researcher were removed as well. The dialogue postings could not be retrieved from the archive but were saved in a "mailbox" from which they could be easily retrieved. For each message, the headers and repeated or second postings were removed. The remaining postings were combined or added onto those of the multilogue to create one large file which comprised, at the end of reduction, approximately, 70, single spaced pages of data.

In terms of the questionnaires, it was possible once again to eliminate some of the data however, there was far less data reduction than with the discussion list postings. This is not surprising given that the questionnaires were far more structured and responses were directed by the questions in the questionnaire. The questionnaire comments were read and reread. Using a highlighter, it was possible to isolate all parts of the data that were relevant. Once these comments were highlighted, they were then typed into a word processor. While there were 88 questionnaires each two pages long, many respondents did not write for the full two pages. The reduction in the data resulted from abbreviating the respondents' comments in order to highlight the essential points.

A similar procedure was followed for the cassette recordings of the dialogues with

the five participants from the questionnaires. A certain portion of these dialogues could be eliminated or reduced because the discussion centered around developing rapport, getting to know the individual, making him/her feel comfortable, explaining the purpose of the research and answering questions about the research. The tapes were listened to repeatedly, notes were taken on the comments made to assist in the later development of themes and patterns. The final product of merging all the data into one text resulted in approximately one hundred single-spaced pages of typed text.

The next important step in the process of analysis was to code the data. "Codes are tags or labels for assigning units of meaning to the descriptive or inferential information compiled during a study" (Miles & Huberman, 1994, p.56). They are astringent in the sense that they pull together a lot of material (Ibid.). The initial coding simply involved writing a descriptive word next to a given excerpt in order to summarize what the excerpt was about: for example, resources, training, time, teaching, learning, Internet, equipment etc. Once all the data had been coded in this way, categories and sub-categories could be established.

All of the data were coded manually with the categories written in the margins alongside each excerpt. Then, through the use of the cut and paste features of a word-processor, all excerpts could be moved into the categories into which they had been coded. At this stage, the data could be reported or described. Chapter 5 thus presents the data grouped into categories. This presentation of the data does not include any interpretation. The presentation provides an answer to the first research question which was: What are some of the beliefs of teachers about teaching and learning FSFL in OLEs?

Once the beliefs had all been identified, it was possible to move to the next level of analysis, stage six, the aim of which was to interpret the data. The data were interpreted in light of the conceptual and historical framework which was outlined in Chapter 2 of this study and the aim was to provide an answer to research question 2: What do these beliefs reflect in terms of the evolution of approaches and use of technology in the teaching of FSFL? The interpretation was accomplished through a search for patterns in the data which related to elements identified in Chapter 2. In the descriptive coding of

the data, key words were used in order to group the data according to topical categories. In order to identify patterns, similar types of beliefs were grouped analyzed, explained and interpreted.

The final stage in the analysis of the data involved identifying overall themes. These themes allow us to draw conclusions from the data, to determine the implications of the findings and to make recommendations for educational practice. The conclusions, implications and recommendations are presented in Chapter 7.

#### **4.8 Data Reporting**

The process of reporting the data did not aim to group all the beliefs of one individual together. Instead, the aim is on grouping the beliefs based on the codes, patterns and themes. This means that the data are reported as excerpts. In the course of a discussion, a teacher might have revealed numerous beliefs some of which might relate to different topics. Such beliefs may therefore be reported in different sections under different categories. In some cases, it was necessary to report only part of a sentence in order to focus on particular beliefs. Every attempt was made to ensure the integrity of the individual's comments and beliefs in spite of the fact that only parts of comments might have been reported and in spite of the fact that many beliefs are not presented in the context of the discussion in which they were generated.

Every effort was made to ensure the anonymity of the participants. Therefore, names of places or persons which might serve to attribute a comment to a particular individual were replaced by fictitious names. In cases where reference was made to a country or continent and where the reference is significant in terms of the meaning, the place name was not changed if it did not appear to compromise the identity of the participant. In cases where the identity could not remain anonymous in spite of changing the names of the place or person, the data were discarded.

In relation to gender, use of "his/her" was avoided. Teachers are referred to instead with the feminine "she" or "her". Also in terms of the reporting, it should be noted that teachers' discussion postings often contained errors. Logan (1995) reminds us

that e-mail correspondence is often less formal than other forms of written correspondence. Errors are noted with a “sic”. However, missing accents, in the case of the French postings are not noted with a “sic”. While some participants were able to make use of the computer’s capacity to transmit accents, others were not. Some participants asked of others that they expressly not use accents because their own e-mail software did not support them and because they had difficulty reading them.

#### **4.9 Conclusion**

Shulman (1986) reminds us that, in terms of the classroom, there is no “real world”. The worlds experienced by teachers may each be different. However, they have in common that they are all complex worlds. What the teacher believes about these worlds is no doubt equally complex and, added to that, it is often hidden, not conscious but tacit. The only way to effectively ‘observe’ these multiple, complex and hidden worlds was, therefore, to become a part of them. Thus, the researcher joined in a discussion with participants in order to improve the vantage point from which to ‘observe’ these worlds.

Senge (1995) reminds us that “we do not describe the world we see; we see the world we can describe”. However, perhaps too, our efforts in describing these worlds, in bringing to the surface our beliefs, leads us to see this world differently and more clearly. In this sense, the research has served more than one purpose. The teacher was given the opportunity to see how others view their world and to think about how they see their own world. The participants may well now have a greater ability to describe their world and therefore to see it.

In the chapters that preceded this one, a conceptual and historical framework was presented. The review of the literature presented relevant studies of beliefs. This present chapter has explained the approach which was taken to collect the data. This chapter has also shown how the information presented in Chapters 2 and 3 were incorporated into the analysis and interpretation of the data. In the chapters that follow, the results of the study are presented and interpreted.

## **Chapter 5**

### **Landscapes Without Bearings:**

#### **Presentation of the Findings**

The classroom is a place where order prevails. The infusion of information and communication technologies (ICTs) creates a zone of uncertainty for both teachers and learners, engaging them in a process of risk and exploration for some time to come. (Bracewell et al., 1998)

#### **5.1 Introduction**

This chapter presents a synthesis of teachers' beliefs about teaching and learning French in OLEs. The focus of this chapter is on describing the beliefs and, as such, considers research question 1: What are some of teachers' beliefs about teaching FSFL in online learning environments? The aim is to present the beliefs without extensive interpretation or analysis. The following chapter, Chapter 6, will present an interpretation and more extensive analysis of the findings.

The analysis of the beliefs involved coding using key words. As a result of this coding, 12 categories were established. These 12 categories represented 12 topics into which all of the data could be grouped. However, among these categories, it was apparent that there were differences and similarities between each of the 12 categories. While some categories grouped data which viewed use of OLEs in a positive way and expressed their advantages, other categories appeared to group data which emphasized the challenges related to the use of OLEs. The next step therefore involved regrouping each of the 12 categories into two broad categories: beliefs that emphasize the advantages of OLEs for the teaching and learning of FSFL; beliefs that emphasize the challenges related to the use of OLEs. Although there was no attempt whatsoever to group the categories evenly, there were six categories of advantages and six of the challenges. Thus, the data were grouped into what this study refers to as two categories with six sub-categories in each of the two broad categories. The two categories are:

1. beliefs that emphasize the advantages of OLEs for the teaching and learning of FSFL;

2. beliefs that emphasize the challenges related to the use of such environments for this purpose.

These categories were useful and effective in terms of finding a boundary for the data. The data did not need to undergo extensive interpretation or analysis in order to be classified in one or the other category. Within each of the two broad categories six, more specific sub-categories were identified as a result of coding the data. These categories are as follows:

<b>Advantages</b>	<b>Challenges</b>
Resources and information	Time and the curriculum
Communication and collaboration	Training, support and vision
Real-world learning	Access and equipment
Motivation	Control and monitoring
Learning	Students
Teaching	Online learning environments

Table 5.1 Belief sub-categories

The presentation or description of the findings in this chapter attempts to capture the essence of the beliefs which are often expressed in complex and conflicting ways. The use of a dichotomy of categories (advantages versus challenges) does not imply that participants expressed either one or the other set of beliefs. On the contrary. The same teacher oftentimes expressed both categories of beliefs simultaneously. For example, it was not uncommon for a teacher to express the belief that the use of OLEs allowed her to improve or advance her teaching practices while simultaneously arguing that she lacked the necessary time and training to achieve effective use of OLEs. The next chapter provides an interpretation of the beliefs and therefore an explanation for the conflicts and contradictions which arise in the beliefs described in the present chapter. This chapter does not attempt to interpret the beliefs instead it describes or presents them only. This

description begins with the first category of beliefs which relates to the advantages to use of OLEs.

## **5.2 Beliefs Related to the Advantages to use of OLEs**

The beliefs that have been grouped into this category share a positive experience or perception of use of OLEs for the teaching and learning of FSFL. This section includes beliefs of teachers in which they express the value of the tools and technologies associated with online learning. The first sub-category groups those beliefs which emphasize the value of OLEs in providing access to resources and information which can be used to enhance teaching and learning. Global communication and collaboration constitutes the second sub-category and presents examples of how teachers believe OLEs can facilitate contacts and cooperation with Francophones around the world. The third sub-category - that of real-world learning, describes the value of OLEs in making learning more relevant and authentic. Motivating students constitutes the fourth sub-category. The final sub-categories emphasize the capacity of OLEs to enhance teaching and learning.

### **5.2.1 Resources and Information**

Beliefs on this subject described Internet information and resources related to the teaching of FSFL as being current, varied, appealing to a variety of senses and a range of interests, useful, immediate, cheap, authentic, universally accessible and often uniquely available online. One teacher described her reaction to the availability of online resources: "Because educational leaders are always talking about resource-based learning, we are delighted to find resources at our fingertips, literally". Not only are the resources described as being easily accessed, they are also described as being voluminous: "There is a wealth of information and resources available". One teacher described how the Internet "permits access to a multitude of information". The information and resources are described as being readily available, not only in English, but also in French: "If I find any more Francophone sites, I am afraid we will need to add another five - ten hours to the day. I believe we have a wealth of information available in French... more than we

will ever be able to use". Whether the information comes from a Francophone site is not important to some teachers because, even when it is in another language, it can be translated online: "I believe there is plenty of material in French. Using the AltaVista translator you can even translate any site into French, Spanish, German and Italian." Another teacher described how the availability of resources has affected her practices: "... now there are many resources available to the students in French. Previously I had to find all the resources needed to complete a certain task. Many times the resources were not readily available since resource centres/libraries did not carry a wealth of French materials. I find the Internet to be a great tool, assistant, additional wealth of resources...."

Teachers described a wide variety of ways in which students can use OLEs to access information and resources such as: "to search out background information", "to do small research projects", to access "French literature, newspapers, sports, music", to access "up to date news articles" and "dictionary sites", to do "research of information on French-speaking cities, countries, communities", and to find "songs and lyrics of French music". As well, teachers can find "information to support the literature component" of their programs. The following teacher describes how OLEs provide her students with resources that would not have been available to them prior to use of the Internet:

I required the schools to which I taught to have a French language newspaper (*Le Journal des Jeunes*) in pre-Internet times. Now, there is a great selection of newspapers on the Internet and many other resources that I have located for Core French. Now, I can require students to do Internet searches for projects and class activities, I can prepare "Ralleys" that must be done on the Internet....My fear of students not having adequate resources with which to complete a project/assignment has now disappeared.

Access to information is useful in the French Language Arts' class, but, as well, in the teaching of content using the French language. In the following excerpt, a teacher recounts her experiences of using the Internet to find valuable online information in relation to the theme being studied:

I will be teaching immersion history after Xmas and I know that the

internet will be invaluable especially in my ancient history course--I'll be taking the kids to the major museums of the world to see the antiquities displays, especially the mummies!! Just to complete the activity list: during the spring last year in my Ancient and Medieval History course, we decided to have a Med. feast. We researched the traditional feast on the net (and immediately decided that it was too elaborate to pull off during class) but found a wealth of recipes that my students took home and made and brought in. We invited the principals, brought in med. music and shared recipes after because some of the dishes were excellent!

Resources are not only abundant but also more "up to date" than the resources to which teachers would traditionally have access. As one teacher explained: "To have an effective Immersion program, one needs resources that are current. The internet provides this". It is in fact the nature of OLEs that makes the information appear so current: "The impermanent nature of the sites in itself - constantly updated - gives students the feeling that they are dealing with living data, as opposed to the sometimes stultified, and definitely sancro-sanct (sic) nature of data in books". Access to current, updated information provides added benefits for students and teachers:

I believe that the immediacy of the information adds another element to what the student is doing. When we use documents from current newspapers, journals, etc. the student is interacting with something that is contemporary. He/she reacts contemporaneously with what the native speakers are doing. This is appealing particularly if he/she can connect the piece to what is happening globally at the present moment. The study of French then becomes the study of current events, social studies, etc. and speaks to the need of cross-disciplinary teaching.

The wealth of information available online combined with its current nature may contrast sharply with the type and quantity of information traditionally available in libraries. In the following excerpt, the teacher predicts how, in the future, school libraries may be replaced by high-tech retrieval of online information:

I believe that retrieval of information will become so high tech within the next 10 years that I want to get a head start. We already have seen the reel-to-reel taping system become a thing of the past, making way for cassettes and CD's. I may be wrong, but I believe that school libraries will become obsolete in the same way, or will become a last choice if the internet is down! The wealth of info that is available with a mouse-click

just can't compare to the outdated materials we have in our tiny library. I don't think students, given a choice of traveling to their public library or switching on their computer, will choose the former in years to come.

Teachers also expressed beliefs about the type of information available through the Internet. The information and resources for French on the Internet were described as varied and unlimited. As one teacher noted: "You can get information on just about any topic". Another teacher expressed the belief that the information available online was more diverse than what was available in "traditional resource centers" and another, that the Internet makes it easier for teachers to expose students to "a wider base of knowledge and resources". One teacher explained how use of OLEs offers students access to information not available elsewhere: "it also allows me to direct my students to other sources of information not readily available in other forms (books, magazines, etc.)." The following comments provide an example of the convenience afforded by use of online resources:

Avec Internet, le chercheur a sa portee et a moindre frais, acces a la plus grande majorite non seulement des medias, mais egalement de tout type d'informations . Par exemple, apres ecoute en classe de la chanson "LEA" du groupe "Louise Attaque" de nombreuses interrogations ont eu lieu: Combien de personnes? Jeunes? vieux? plutot punk? cheveux longs? gens normaux ? etc...Un simple clic sur le site internet grace au moteur de recherche Yahoo.fr que nous utilisons en permanence et voila nos apprenants informes par leur propre recherche.

Online resources are described, not only as being easily accessed, varied and affordable, but also as being able to meet the needs of a wide range of learners: "The Internet is an excellent source of different topics to fit the interests of each student." This capacity of OLEs to meet the needs of a range of learners may relate to the multimedia aspect as one teacher explains: "The internet's World Wide Web has become the premier place online for finding multimedia resources and connecting students to real-world events and people. Students have unlimited access to documents, photographs, maps, video clips, sound bytes, references and other learning materials". The value of the multimedia aspect of OLEs is attributed by one teacher to its capacity to generally

enhance learning: "Use of still and animated graphics, sound and music clips can greatly enhance understanding and possibly promote greater retention of facts since it appeals to more senses. The students gain even more if they are the ones who create the material". The multimedia format of the Internet also presents certain advantages which may not be available in the regular text format: "I have used the Internet with one French class to research info on Francophone countries which they then used to create a travel brochure. This was much better than using an encyclopedia-easier to read, nice graphics, links to pertinent information".

Besides its appeal to a wide range of learners, online information has the added value of being "authentic". Online access to such resources is described as filling "one of the voids that existed in pre-Internet time". One teacher explains the importance of such resources to teaching: "The availability of authentic French resources is becoming more and more important. I believe in the importance of authenticity in teaching materials, especially for second language learning, in order for the language not to be so "foreign" afterall (sic)". The following excerpt illustrates how the Internet's authentic resources have made a difference to one teacher and her students:

Imagine the delight to find so much authenticity on the Internet. The topics are pertinent and very high interest for my students, levels 1-5. The 'match book' poster search, along with the resto menus are now downloaded so easily. I have always been in contact with MacDonal'd's in francophone countries, as well as with Burger King....and have had to politely beg for any of their publications. Le resto St. Hubert in Quebec has always obliged me with publicity handouts, menus, etc., and from that point I can initiate discussion which is meaningful to my classes, not to mention to the prof. I have always been a newspaper freak regarding Spanish and French newsprint, so the fact that I don't have to depend on my friends' generosity in snail-mailing me all those goddies is a relief. That being said, "La Presse" from Montreal is on my desk today --the cartoons, as well as local stories with a twist on the positive side of humanity.

The capacity of OLEs to provide access to resources is a valuable one particularly for schools in remote or isolated areas: "I neglected to mention in my last posting that the Internet has indeed helped in my teaching French to remote small schools. These schools do not have many French resources in their resource centres. They may have had a

French-English dictionary, but that is it". Remote and isolated schools can also benefit from online access, not only to resources, but to other communities, schools and individuals. Beliefs about the advantages of OLEs for such contacts are described in the next section.

### **5.2.2 Communication and Collaboration**

Teachers' beliefs about online communication indicate that OLEs offer significant advantages in terms of providing opportunities for meaningful communication from the classroom. Teachers in this study remarked that the Internet "provides avenues for real communication, be it in the form of key-pals, interactive projects, chat lines, net meeting". Students and teachers can make use of OLEs for "finding, sharing and exchanging information and ideas", for "authentic conversation", for "interaction and communication with students and teachers in French-speaking schools", for "correspondence by e-mail", for "contacting groups in other parts of the world" and for "journal correspondence with other schools".

The potential of online communication makes the Internet of special value to the teaching of foreign languages such as French. This potential for communication is described in the following excerpt as filling a void that existed up to now in second-language education programs:

I do believe that no one stands to gain more from les nouvelles technologies than foreign language classrooms. For years we have lamented the fact that our students have no concrete application of their language, and here we have, literally at our finger tips, a whole world of francophone kids, waiting for a chance to communicate with us. It is indeed, exciting.

Online communication also presents particular advantages to students living in isolated areas. As the experiences in the following excerpt illustrate, geographic isolation no longer presents a barrier to meaningful communication and conversation between Francophones and students of French as a second language:

The fact that I'm a primary French Immersion teacher in a somewhat

isolated community on the south coast of Nova Scotia is further impetus for looking to give my students and myself better options in using the second language. Because of the school's location, it has been extremely difficult for our children to find meaningful opportunities to use their second language even though we are in a bilingual country. In essence, our students have had little opportunity to truly engage students from a French culture in honest conversations about who we are and who they are. While the Internet offered potential and promise in the early years, it has come to have real application in my teaching. My students are actually communicating/interacting with other students. I now see it as a valuable and viable conduit to L2 success.

Resources and information can be found in a library or a book and as such in the regular classroom with or without access to the Internet. However, communication cannot: "E-mail and chat rooms provide an environment that cannot be duplicated in the classroom". Online communication provides a means of "meeting francophones", carrying on "authentic conversation" and participating in the reality of communication as it exists outside of the classroom-something which cannot be found in a book:

The realia is none other than real-life kids on the other end! For my young French immersion students, the written information available on the Internet is secondary. A good book or CD-ROM is usually far superior to anything they'd find on the Net. But the opportunity to communicate with kids their own age in real - or almost real - time is something we've been dreaming of for years.

This capacity of OLEs to provide a communication tool is of particular value to young children. In the following excerpt, a teacher argues that this capacity is what represents the important value of the Internet for learning:

With young children, the Internet is best used as a communication tool. There is little information available on the Net for elementary kids that a good book or CD-ROM couldn't do better. But for immersion kids to be able to communicate with francophone kids the world over - that's something entirely different.

A particular online communication tool described by participants in this study is that of chat rooms. Teachers described such 'rooms' as a popular means of facilitating communication while at the same time simulating real-life communication situations and

environments. This feature of OLEs allows students to converse in French with classmates and presents particular advantages for certain types of students:

My newest adventure is into the chatrooms. We have a site on the Imaginet Page that has an empty room and we all sign into it, take on identities and chat with each other in French! I circulate around the room and give advice on grammar errors or expressions that I see on the screens without everyone else knowing who I'm talking to! Also, we debate certain topics and the anonymity lets the shyer kids who might not participate in an oral discussion express their comments.

The capacity of OLEs to facilitate communication is an important one. One of its greatest advantages is that it encourages participation from shier children. Chat rooms also offer teachers the opportunity to focus on grammar using a different approach:

... my kids sign into that chat room and take on 'handles' and chat with each other. I circulate around the room and correct/fine tune the grammar or suggest little phrases that might add some spice or be more comical...they love it! Sometimes the conversation degenerates and we're obliged to exit but usually, they respect the rules and we have a civilized chat! Sometimes I let them free chat, sometimes I assign a topic and we debate it. It allows the shyer students to express their opinions whereas in the oral setting, they might never dare to. It also allows me to clarify grammar as all my kids are looking at the screens and they all see what I am asking be corrected at the same time. Better than using an overhead! It's not perfect but it gets everyone participating and hopefully learning something.

OLEs need not be used only to offer opportunities for conversation within a classroom, but as well as outside of the classroom with native speakers. Such conversation provides students with opportunities to be exposed to other language models. The Internet "can provide interactive communication with native speakers. The teacher should not be the only model". Opportunities for communication can also be coupled with global, virtual visits to other countries or places where French is spoken. The following teacher describes her experience with such visits: "The Internet has been a great boon for me as a professor of French. It can work to the benefit of students in that they can now "visit" French-speaking countries and it's really not that expensive - if your

school has the appropriate access". Students can participate in "virtual tours which allow the students to see parts of the francophone world". Online communication has represented a great advantage for this immersion teacher: "Of great value has been the communication that we have been able to carry on with other francophone classes and individuals. This provides a much needed personal exposure to the French language for my immersion students".

The exposure to the French language provides opportunities for communication as well as collaboration. Collaboration represents an important means of linking students to the realities of learners in other classrooms around the world so that they can share ideas and learn together online: "The Web makes possible new levels of individualization and encourages collaborations that take students far beyond the classroom; individual e-mail accounts enable students to initiate contact with other learners and resource people, take part in collaborative projects, and communicate with family and friends." Students can work on projects, carry on conversation and collaborate in OLEs with many added benefits: "Students have the opportunity to work on collaborative projects with other schools, other countries, resulting in a sense of international solidarity." Racial tolerance as well as international solidarity may be achieved through online communication:

I also believe in the world being a global community. My students correspond with people in other countries by e-mail, chat, icq whatever way they can! They are ravenous for contact with the outside world, and want to learn about and share themselves with as many people as will listen. That is why I am pushing e-palling. The more that our next generation learns about people in other countries and comes to accept other cultures while sharing their own, I believe we become one step closer to fulfilling the concept of a "global community" and one step closer to promoting tolerance for all races and cultures.

Online communication and collaboration can result in truly meaningful connections and communication particularly when friendships are formed between classes in different countries:

There's one particular school in France that I've been corresponding with since 1995. We've collaborated on many themes from Christmas rituals to preferred seasonal activities and have sent each other "care" packages with

odds and ends (put together by the students) about our communities. We've also done and exchanged a video presenting our particular school. This has become a very special relationship, as you can appreciate. The Internet has certainly helped it to flourish.

Global communication and collaboration provide students with opportunities that might not otherwise exist in their classrooms. These opportunities provide for greater contact with the world outside of the classroom - the 'real world'. Beliefs related to 'real-world' learning are described in the next section.

### **5.2.3 Real-World Learning**

For students living in areas far from Francophone cultures, the study of French might not be easily associated with its real-world context. Certainly a challenge for the teacher of FSFL is to help students link with this world, its language, culture and people. However, when the only exposure to the language and its people is through books, it may be challenging for students to appreciate the study of French as being any more than the study of a subject with little relevance to the real world. However, as one French teacher remarked, in OLEs "students can see for themselves that French is not just about what we do in school, books-grammar etc.. It is indeed a living language." The Internet can allow "students to see French as something real -not just a subject taught in school". Online learning experiences can thus help students "to see French as something existing other than in the classroom" and "to realize that French is not 'a dead language' when they surf the net and find millions of sites in French, in both Canada and around the world." One teacher described the positive impact of real contacts made with another class through OLEs:

I teach in a small community in Montana. Many of my students will never travel outside the United States, let alone the western US. Last year when a teacher from Québec contacted me to set up a letter exchange, I saw how real the French became for my students. Things I had been trying to tell for several months became very clear because they discovered for themselves the answers .... my students are exposed to more French than I could ever provide in our classroom.

The use of the Internet can serve as a support to the teacher in her attempts to ensure that students appreciate the real-life applications of the French language: "I feel that it has made my teaching more 'real' for lack of a better term. My students feel more in touch with the francophone world when they see what I'm talking about on a screen in front of them. I believe they come to understand the value of French in a whole different way." In general, learning French in OLEs can have a positive effect on the learning environment even while students are not online in the sense that there is a certain carry-over of the positive effects to the classroom learning situation:

Any learning must take place in relevant, real, challenging and connecting contexts. Internet allows teachers and students to make this happen. Learning a second language becomes far less contrived and simulated. It is hoped that the experience then brings forth enough positive energy to create oral interaction in the classroom. It creates oral interaction when preparing and anticipating before an activity, it creates interaction when researching, questioning, discovering during the activity and it creates interaction when reviewing, giving feedback, discussing their learning after the activity.

Another important aspect of making the study of French more 'real' is in providing students with an audience for their work. Having an audience can affect the type of work that students produce: "They also tend to be more careful over what they say and how they say it because of the wider and varied audience; they have a real audience and a real purpose." OLEs provide students with opportunities to produce original work and then share it online with others outside of the classroom:

Building a web site to share student-generated work is another important use of the Internet. Again, its use as a productive (rather than receptive) tool is what gives it its value. We finally have an audience for our kids stories and poems, and it's an authentic one. That's what the Internet means in an immersion school.

According to the following teacher's comments, use of OLEs requires abandoning traditional models which were more suitable to book modes of learning:

...we have to think Internet as opposed to book learning when we use the Internet. The linear model of learn, answer questions, test, is based on what is manageable for the book and paper form of learning. Actual

real-life learning on the job takes place much more diversely and has an actual real application. Therefore why not get students to do more projects based on their real questions about the world, find info. talk to real experts on-line and find their own answers.

The opportunities to talk to “real experts” and to ask “real questions” can be made easier in an environment where the information in general appears more real. Such opportunities can also result in more effective learning as the following teacher’s comments illustrate: “The internet is also a place where shock value has it’s (sic) place. Nothing brings home the Holocaust better than a virtual visit to Auschwitz or to a Holocaust museum, or to a skinhead’s hate page. It is really in-your-face learning and it hits home more effectively than looking at a distant TV screen up in the front of the class”.

The beliefs expressed on the topic of ‘real-world’ learning through use of OLEs suggest that such learning is, in some ways, more effective than regular classroom learning. One of the reasons for this increase in effectiveness may have to do with the relationship between making learning more relevant for students and student motivation. In the following section, teachers describe how OLEs increase student motivation and generally result in a more effective learning environment.

#### **5.2.4 Motivation**

Participants in this study expressed the belief that OLEs had an influence on the motivation of students learning French. Teachers noted that students are “more interested in doing research this way than from books”, that they “get very actively involved and interested”, that they tend “to be more positive about French”, and “find it fun and interactive”. The Internet “makes the student more interested” and “increases motivation.” In general, as one teacher noted about students: “I find that they are more interested in French class and learn more when i (sic) assign Internet activities”. Another teacher concluded similarly and remarked that students “seem to respond a little more enthusiastically when you say the information came from the net”. The experiences of one teacher led her to conclude that, not only are her students motivated by working

online, but that they have an opportunity to learn how much French they understand while doing research online: “My students seemed to be motivated in a big way by the Internet technologies. They seemed to want to know how to use all these technologies, not only in French classes but across the curriculum. However, they have been very interested in doing research in French and very surprised at how much they understood in the second language.”

The following teacher explained just how positively her students responded to online learning experiences: “I have a much more enjoyable time with these youngsters because they are so positive in their response to my class. They are eager to learn and are willing to try any type of new activity. Even if the activity is a “disaster” they are supportive”. Students will exert a special effort in order to learn how to use the technologies and may show more interest in doing research in French when they do it online. The extra effort can be particularly motivating for those who may normally encounter difficulties with learning:

...students always display an interest in using computer technology regardless of the purpose. I have witnessed students putting more effort into assigned tasks simply because they are using a computer. They are always enthusiastic participants and most of my students are quite proficient with computer use which provides them with feelings of success when they are able to successfully complete assigned tasks. This is especially important to student (sic) who usually struggle with their regular class work. They often seek out extra assignments when they are finished.

Students’ high levels of motivation can result from having instant feedback, being able to visit exotic destinations and doing interactive exercises. In the following excerpt, one teacher describes how she incorporates these sorts of online activities into her teaching and how, as a result, her students are motivated to use more French than normal:

I love using the internet for my French classes and my kids do too! I have taken them into the University of Texas first year French files and they have participated in interactive grammar exercises where they type in answers and at the end of 10 questions, they get an instant correction page. They love having the instant feedback and it is more interesting than a worksheet. I have also done guided travel tours, that I must research myself first, and the kids visit all kinds of exotic destinations-searching for

the answers to questions on the guide sheet. We have explored comic strips, written letters to Santa, listened to French Radio-looked up the kids' favorite music groups--Spice Girls, Blur, Hansen etc, the possibilities are endless!! .... My grade 12 immersion did "Le Petit Prince" this semester and to break up the monotony, we came to the internet lab to read the book on-line. The kids also were able to read reviews of the book. They thought that was kind of neat, even though they still didn't want to read the novel!! I love this medium. It keeps their attention and they are reading and conversing 100% in French, something they wouldn't do in the classroom.

Students' motivation may well derive from the fact that they have an audience for their work, thus making them more responsive and generally more interested:

In general, this tool is a great motivator for the students, and I see this as probably its greatest benefit, at least given the amount and the types of uses to which we are limited. The students want to discover the answers to the questions posed or follow up on activities they have been engaged in because it involves someone in another community or country even. It lends a certain amount of exotic flavour.

The "exotic flavour" may help motivate students who would otherwise not be motivated to learn French. Lack of motivation may be observed amongst second-language learners particularly when there may be competition to learn other second or foreign languages such as English. For students living in areas geographically removed from Francophone areas, and where other languages may have a greater influence than French, OLEs can play an important role in motivating students to learn French:

J'avoue que nos étudiants ne sont pas très motivés pour apprendre le français. D'abord parce que l'anglais s'impose de plus en plus, deuxièmement parce que la deuxième langue qu'on étudie maintenant est le portugais (du Brésil) à cause du Mercosur (marché commun de l'Amérique Latine qui a comme principaux partenaires le Brésil et l'Argentine). Le français n'est plus pour nos étudiants ce qu'a (sic) été pour leurs parents ou grand-parents. Il y a beaucoup d'influence française en Argentine, surtout à Buenos Aires. Les générations du début du siècle jusqu'aux années 50 se formaient en France, ou en Europe en général. C'est à cause de cette démotivation pour l'apprentissage du français que j'ai commencé à travailler sur le projet d'introduire le français par ordinateur.

Lack of motivation may be more common, not only as a result of geographic

isolation, but also as a result of the student's age. Allowing students to learn in OLEs may counteract the lack of motivation particularly when they can have fun doing so:

I have two reasons why I wish to use the internet in my second language classes. First of all, it allows students to experience another place where French exists. As well, students at the intermediate level are not particularly motivated to do much work in their other classes, let alone French which "sucks" as they so eloquently put it. They need motivation and I feel if they can have fun while still encountering the target language either through comprehension or production activities, then they are more likely to put an honest effort into the activities I choose for them.

Motivating students may also be accomplished by focusing more specifically on students' particular needs and by generally improving or enhancing the learning process. The beliefs described in the next section highlight ways in which use of OLEs can allow teachers to concentrate more specifically on the needs of their students and improve the learning process in general.

### **5.2.5 Learning**

Many teachers in this study expressed the belief that OLEs represent an effective means of meeting the changing needs of today's students: "The nature of student learning has changed dramatically in the past decade as teachers have a more difficult task of motivating their students. The students are accustomed to numerous stimuli, (ie. (sic) virtual video games, etc.), thus the teacher has to be more creative to obtain and maintain their attention". In the following excerpt, a teacher describes how she maintains students' attention and meets their changing needs through use of technology:

Today's students are quite different from those of even 2-3 years ago. I am motivated by the desire to make my classes as interesting and relevant to my students as possible. Let's face the fact that today's students grow up in a world that is super hi-tech. These youngsters are raised in a world in which they are "turned on" to a very audio-visual environment from infancy. As a teacher I must deal with this situation on a daily basis. So, my decision is to make the class as stimulating/interesting/relevant as possible through the manner in which I introduce/reinforce information. I have made a decision to implement all types of technology in the classroom. Within the past two years I have added e-mail exchanges with

students in other countries; the use of CD-ROMs; internet sites, etc. into my curriculum.

The way in which students are changing can affect the way in which they do research and the tools with which they do this research. One teacher described her students as being more comfortable with an “arborensence” (sic) approach of the Internet rather than a “linear and traditional approach” common to text-book learning. This teacher’s comments focus on students’ growing dependence on the use of electronic tools such as the computer and provide a prediction about how their needs will continue to change over the course of the next decade and beyond:

I also believe that students are becoming lazier...just as they must use their calculators as a crutch because most of them are unable to do simple math calculations in their heads, so will they begin to depend on the instantaneous reply of the computer to respond to their research needs. Most will probably not know the inside of a library and how books are classified or ever consult a card catalogue within 15 years!

Not only does use of OLEs allow teachers to better meet the needs of students, but it can enhance learning in other ways as well. Teachers described how the Internet “broadens the students’ horizons” and allows “students to be creative and learn through experience”, to have “more independent learning in class” and “to learn on their own while using an alternate approach to teaching.” One teacher commented that the Internet is a “nice change of pace from the regular classroom setting”. Teachers commented on the range of activities in which students can engage online such as “internet competitions”, “interactive activities, treasure hunts, crosswords”, activities for special occasions, i.e., Christmas, Valentine’s day, holidays, festivals”. They can also access “games, puzzles, maps”, or have fun “sending greeting cards”.

The multimedia capacity of OLEs can have a positive effect on the learning experience: “Use of still and animated graphics, sound and music clips can greatly enhance understanding and possibly promote greater retention of facts since it appeals to more senses.” OLEs may also appeal, not only to more senses, but, as well, to different types of learners: “Differences in learning styles and individual abilities and strengths can

be addressed through the variety of skills and types of activities involved with projects which take advantage of the computer and the Internet in particular”.

OLEs can have an overall positive effect on the learning situation by allowing students to reconceptualize their role and the role of the teacher: “Used in the context of group work and resource based learning, it can help create a situation in the classroom whereby the students become more responsible for their learning. They realize that the teacher does not have to be a font of information, rather a guide. Hopefully, this will encourage them to become lifelong learners.” One teacher provided support for this change in the role of the student: “Students become more responsible for their own learning and research and this is a good thing. It makes them become more responsible and independent learners.” In general, use of OLEs can make students less dependent on the teacher to provide them with the necessary information and tools that they need: “My students are becoming less dependent on me to find information. They often find their own sites”. OLEs can allow students more autonomy in learning, by providing them with the tools and information necessary to construct their own knowledge:

Les équipements actuels rendent surtout plus facile le travail en autonomie. Parce que l'apprenant possède, virtuellement, toutes les sources d'informations dont il a besoin, il lui est possible de construire seul son savoir. Parce que le matériel de formation en autodidaxie est plus accessible et plus facile à manipuler, la formation devient plus facile (mais cela ne signifie pas que "l'autonomisation langagière" de l'apprenant - ses capacités à se débrouiller seul en langue/culture - soit rendue plus aisée).

Along with a change in the role of the student may come a change in the level of thinking that they do while learning. One belief about OLEs suggests that learning online draws on higher levels of thinking skills than might be found in traditional learning environments: “When students use the Internet in their second language learning certainly they have to problem solve: analyze, interpret, synthesize the materials that they are using on the Internet”. In the following excerpt, one teacher explains how a simple Internet activity can require students to engage in critical thinking and problem-solving:

If, for example, in planning a trip to Quebec City, the students had to use the Internet to develop an itinerary for their trip, they would have to be

within a certain budget. So, they would do a guided search under the supervision of the teacher (provide some sites for the students), they would have to make comparisons, decisions, and report back to the class with the planned itinerary. They must also be ready to explain why they chose a certain activity and not another. This, to me, would be an example of students using critical thinking and problem solving in an Internet activity in the French classroom.

Changing students' role and bringing them to higher levels of thinking are some ways in which OLEs are described as affecting students' learning in general. However, OLEs were also described by participants in this study as specifically affecting students' language skills. In general, use of OLEs with students is described as something which "enriches their language experience". In particular, "opportunities to develop written communication skills are abundant". In terms of the types of writing activities in which students can engage, participants in this study noted that students can create "class web pages where students can post autobiographies and display their art work", that they can engage in "creative writing with online feedback" and that they can engage in "writing for publication".

As well, according to some teachers, online learning can make up for the lack of interaction in the regular classroom by providing opportunities for the development of listening skills and by helping students to see a purpose for language learning:

I also use web sites for listening activities - there are many radio stations online with reports that can be downloaded, music clips, etc. It does take planning and lots of time to incorporate such activities into the curriculum, but I think the time is well spent as the students enjoy the lesson so much and begin to see a purpose to learning a language and even to learning grammar! This year I will be using a discussion board and chat rooms with guest "speakers" from various French-speaking countries in all level of classes that I teach. Granted, it's not oral communication, but this is more of a cultural exercise. As the students go through the lessons I want to incorporate several "side tripss" (sic) to websites to make France and French more of a reality to them. What they lack in classroom interaction could, in part, be helped through use of the Internet.

Opportunities for online communication provide for enhanced learning experiences. Furthermore, enhanced interest levels in students as a result of working

online can possibly encourage students to use more French than in the regular classroom:

I figure the more time they can work in groups and chat amongst themselves in the target language the better, and using the internet provides the dual opportunity of leaving the classroom setting, and presenting an activity that is relevant and interesting so that they are too involved in the task to begin speaking English.

Online learning also provides an opportunity to develop an appreciation for the cultural aspects of French. The Internet “opens up the classroom to many more cultural inputs than the library did, especially because of direct contact with francophones, be it through listservs such as CAUSERIE, or WWW sites which can linger on cultural details books simply cannot afford to do economically...”. As well, the exposure to these cultural aspects may be more enriching than what students typically encounter in the classroom: “At last, we have a chance of truly integrating that cultural piece that seems always to elude us. At last, we can get past the beret and baguette!”

According to some teachers, OLEs appear to provide students with an opportunity for a learning experience which the teacher cannot provide: “The internet is enhancing their learning..is filling in blanks that I, as a stand-up teacher, can't possibly hope to fill and it is keeping them on task for the whole period..something that rarely occurs in a regular classroom setting (for me, anyway!)”. Increased use of OLEs in the classroom can have an effect not only on the students but, as well, on teachers. The following section groups those beliefs that centre on how technology is changing and improving teachers' role and their teaching practices in general.

### **5.2.6 Teaching**

One of the important advantages described by teachers in the use of OLEs is the wide range of activities available for students and teachers. Teachers described a large variety of ways in which OLEs can be used in second-language teaching such as for the “creation of tailor-made multimedia learning activities”, for “enrichment”, for reinforcement of “grammatical points and structures learned in class”, to access “dictées, short stories, proverbs”, for the “development of themes” and “vocabulary development,

“to access games and enjoyable activities for students”, to “search for ideas/lesson plans or articles to share with students”, to “improve the cultural content of program”, for “reinforcement of previously learned concepts”, and “incorporation of sites to be used in learning centres”, to “provide opportunities to go beyond expected curricular outcomes”, for “skills development”, to “access to teaching strategies” and to promote “hands-on learning”. Teachers may also find OLEs useful “to access upgrades for software and information on various topics, mostly software or classroom related”.

Many teachers in this study expressed the belief that OLEs were influencing their teaching practices and their role in a positive way. Participants gave different reasons why they appreciated using OLEs. One important use discussed was that they can use it to “share ideas and to take part in on-line discussion lists dealing with second language pedagogy”. One teacher commented that the Internet provided her with “a much broader perspective on education” and another that it provided “access to the latest trends, ideas and philosophies, good and bad, on education from around the globe”. Teachers commented that researching on the Internet gives them teaching ideas as well as a variety of ways to approach more familiar concepts: “The ‘Net’ is a source of knowledge, ideas, inspiration, solutions to problems....You don't always find what you are looking for, but often you come upon something of real value that you might never have discovered otherwise”. The Internet was also described as providing “another teaching technique”, and “a means for alternate teaching methods” to which students are exposed. In the following excerpt, a teacher describes the positive effect that the use of OLEs has had on her teaching and has made her a better teacher:

I get to vary my teaching style, it pushes me to keep changing--it is so easy to get into a comfortable rut! I get to offer the students worlds by visual aid of the computer that I could have never dreamed of by "normal" teaching methods. I guess it is making me a better teacher and I am more proud of the product I am delivering--it is now multi-dimensional rather than dry and boring.

Some participants focused on how use of OLEs assisted them in the delivery of the curriculum by serving as “a great resource to supplement the current curriculum

material” by providing “support for the cultural objectives of the Core French Program” and by supplying “valuable supplementary information” for use in “developing the themes contained in the Junior High French curriculum”. One teacher noted enthusiastically that “There are more and more valuable French resources appearing online, which is a boon to those of us in “cultural isolation” in terms of French Immersion programs”. Furthermore, the Internet offers opportunities “to converse with other teachers to discuss and share ideas” and generally “promotes contact among teachers” which makes it “excellent for sharing units of work etc.”. Such contacts also can provide teachers with opportunities to keep up with their French as the following excerpt explains: “Personally, I have found it a very valuable means of keeping up with my French. I subscribe to several French listservs and have made some close (continuing) contacts over the years.” Maintaining one’s French is made easier through use of OLEs particularly through use of chat features: “I correspond by e-mail with French friends but it is when we move to the chat rooms and converse in “real time” that my language maintenance and learning takes place...all those everyday expressions that you don’t tend to include in letters..and the gestures and yes, the sighs and frustrations!”. In general, for a French teacher living in non-Francophone area, maintaining one’s French is a difficult task made easier through use of the Internet:

As a non-francophone, French immersion teacher, I have to say that one of the greatest benefits that I derive from Internet access is the ability to keep up with my French. At least 75% of my e-mail correspondence is carried on in French, for the most part with francophones. In some cases this has also resulted in the development of valuable and lasting friendships.

Use of OLEs can also make teaching and learning more interesting and motivating for the teacher by providing opportunities to go beyond the prescribed curriculum:

Yes, the minister wants a particular curriculum covered and yes, it is very tempting to just stick to the provided texts but how boring to use ONLY the prescribed materials and not have enough interest or motivation to spice up our own teaching and the students' learning by experimenting with new methods of instruction..videos, cooperative learning, internet etc! Many of the old school teachers will stick religiously to the text book

and they believe they are on the cutting edge and providing enrichment by showing a pertinent video in class--to me, that kind of stand-up delivery classroom is like using a film-strip or a reel to reel tape. It has merit, and information will certainly be transmitted to the students, but how much more could be done in that room in the allotted time by using the advances and tools that are now available to most of us in our schools.

OLEs can also provide teachers with the opportunity to develop courses which are richer, better structured and which allow for more independent learning on the part of students: "Parce que l'enseignant a maintenant à sa disposition toutes les sources d'information qui lui faisaient naguère défaut, il est maintenant capable de construire des cours plus riches et mieux structurés (à condition qu'il accepte d'y consacrer du temps), et des cours permettant mieux le travail en autonomie".

OLEs' support to teachers by allowing them easy access to "up-to-date information" may explain why some teachers described the Internet as supporting a resource-based and communicative approach to language teaching. They explained that they tend to teach more "from a resource-based perspective" and to give more research projects knowing that they can avail of the Internet. The Internet's capacity to support a resource-based or project-based type of learning can also provide support for a change in the role of the teacher and the relationship between teacher and learner:

Because of a number of factors, I have found myself moving more towards a cross-curricular, resource-based, project-centered approach with my students. To borrow a phrase, I am trying to become more the "guide on the side" as opposed to the "sage on the Stage". I have found that the Internet offers resources and access that help foster the types of activities/opportunities that I want to create. This type of approach, though, can be very demanding. It requires a great deal of time and lots of organization and background work. For the past few years, I have tried to develop and introduce one, new Internet based project and add it to those that I have already developed. In addition, there are many worthwhile activities sponsored by other classes that I incorporate (sic) into our classwork - again, offering the same approach of making the students more responsible for and in control of their own learning.

Some participants in this study discussed how OLEs provide support for and even forced teachers to adopt the role of "facilitator" as opposed to "a disseminator of

knowledge”: “One of the ways in which using the Internet changes one's way of teaching is that if you had not adopted the role of facilitator, technology will force you to take on this role.” Another teacher provided support for this change in role: “The teacher does not have to be at the center of instruction. When one can get past this, then integrating the Internet becomes fun and exciting”. Instead of being the specialist, the teacher can be researcher who sets up the learning experiences for students:

The internet permits the teacher to adopt the role of facilitator (so often espoused in professional development but difficult for many to achieve in the classroom) rather than all-knowing sage. It also allows the generalist teacher to link from an area of strength, i.e., information researcher rather than French specialist, to effect learning opportunities for students. Many of the generalists with whom I work have fine reading skills in French but are hampered by poor oral skills/confidence; the medium of internet increases their ability to participate and lead effectively.

For some teachers, use of technology can move teachers towards a more facilitative approach. As one teacher explained: “I used to apply the direct approach with repetitive drill, teacher led lessons. My style now is more constructivist, facilitative, multi-disciplinary in nature and I tend to approach themes with the given, that the computer is an integral part of activities, center work, etc.” Changing the teacher's role can help breath a new life into the profession providing that the teacher is willing to reconceptualize his/her role. The new role requires a shift in the locus of control between teacher and student:

...the Internet has changed my practice of teaching, by allowing the student more control and therefore encouraging more active learning in the class. As long as a teacher is willing to give up the 'sage on the stage' concept, and become a 'guide on the side',--the technology becomes an asset and not a liability. We needed a breath of new life, teaching had become stagnant, and now we are on the right track, in my humble opinion. I look forward to surfing the net, to make the language current and pertinent.

The change in roles means giving more control to students and allowing them to explore. One teacher offered encouragement to other teachers about the new role but also stressed the importance of being willing to change:

Teachers have to be open-minded and not worry about losing 'the spot of authority' that they have traditionally held in front of the class. If they are not fearful of empowering the students to explore, than that will enable the teachers to expand their horizons. The willingness to watch other teachers in action, and to see what their approach is also critical to proper use of the Internet.

### **5.2.7 Summary**

The beliefs expressed in this section provide evidence of the enthusiasm felt by teachers as they experiment with new online technologies. In the following tables, the beliefs related to the advantages of use of OLEs are summarized.

<b>Resources &amp; information</b>	<b>Communication &amp; collaboration</b>	<b>Real-world learning</b>	<b>Motivation</b>	<b>Learning</b>	<b>Teaching</b>
Resources easily available at fingertips	Provides avenues for real, authentic communication	Students see French as a living language	Students are actively involved and interested	Students prefer the arborescence approach of OLEs	Promotes contact among teachers
Wealth of information available, voluminous & abundant	Provides meaningful opportunities to use their second language	Makes clearer things that are being taught in the regular classroom	Students are more interested in doing research using this format	Students grow up in a high-tech world and OLEs appeal to them	Provides teachers with a broader perspective on education
English sites can be translated using online tools	Reduces geographic isolation	Students are exposed to more French	Students find it fun and interactive	Broadens students' horizons	Supplements current curriculum
Provides unlimited access to materials in a wide variety of formats	Means of meeting Francophones & interacting with native speakers	Provides students with an authentic audience for their work	Students are more eager to learn online & respond more enthusiastically	Abundant opportunities to develop written skills	Provides access to information, software & upgrades
Able to meet needs & interests of a wide range of learners	Students can work on collaborative projects	Students can consult real experts	Counteracts lack of motivation for learning of French	Enriches students' language experience	Promotes hands-on & active learning

<b>Resources &amp; information</b>	<b>Communication &amp; collaboration</b>	<b>Real-world learning</b>	<b>Motivation</b>	<b>Learning</b>	<b>Teaching</b>
Adequate resources now available for research	Allows for a concrete application of the language	Students come to understand the value of French	Students learn more with Internet activities	Allows students to learn through experience	Helps maintain teacher's French
Resources useful for teaching of content in French	Presents communication advantages to shier children	Learning becomes less contrived and simulated	Students are supportive of all types of online activities	Allows for more independent learning	Sites can be incorporated into learning centres
Information & resources are current, constantly updated & more alive than what is in books	Provides communication tools that cannot be duplicated in the classroom	Creates positive energy to promote oral interaction in the classroom	Students' computer proficiency provides them with feelings of success	Use of multimedia enhances understanding & promotes greater retention of facts	Provides opportunity to vary teaching methods thus making teaching more interesting
Information is immediate	Provides alternate language models	Students feel more in touch with Francophone world	Maintains students' attention	Students become more responsible for their learning	Useful for dictées, short stories, proverbs
Varied & diverse information available on all topics	Students can make virtual visits inexpensively	Provides students with a real purpose for learning French	Encourages greater use of French	Promotes problem solving and critical thinking	Useful for skill & vocabulary development

<b>Resources &amp; information</b>	<b>Communication &amp; collaboration</b>	<b>Real-world learning</b>	<b>Motivation</b>	<b>Learning</b>	<b>Teaching</b>
Available to students regardless of geographic location	Increases interaction among students	Makes teaching more real	Students put more effort into online work	Allows students to be creative	Allows students more control
Large number of Francophone sites available in French	Promotes international solidarity	Results in more effective, in-your-face learning	Makes French appeal more to intermediate-level students	Students are becoming lazier & are dependent on electronic tools	Teachers can participate in online discussions
Multimedia format appeals to a variety of senses thus enhancing learning	Provides opportunities to see parts of the Francophone world	Provides learning in relevant, real, challenging & connecting contexts	Students' positive attitude makes teaching more enjoyable	Can be used to access activities for Christmas, Valentine's day, holidays, festivals etc.	Source of knowledge, ideas, inspiration, solutions to problems
Information easier to read than an encyclopedia	Promotes racial and cultural tolerance	Useful as a productive rather than receptive tool	Students display an interest regardless of purpose of activity	Provides opportunities for the development of oral skills	Allows teacher to adopt role of facilitator
Provides more diverse information & wider base of info than what is available in a library	Can be used for finding, sharing and exchanging information and ideas	Students realize French is not a dead language	Students often seek out extra assignments when finished their work	Allows for effective integration of culture & provides for enriched exposure to culture	Supports a cross-curricular, resource-based, project-centred approach

<b>Resources &amp; information</b>	<b>Communication &amp; collaboration</b>	<b>Real-world learning</b>	<b>Motivation</b>	<b>Learning</b>	<b>Teaching</b>
Authenticity of resources helps makes language less "foreign"	Allows establishment of new relationships & friendships	Students see French not just as subject taught in school	Students want to know how to use all the technologies	Encourages students to use more French	Allows teachers to share ideas & units of work with others
Provides information not available in other forms	Allows for creation of global communities	Students tend to be more careful of what they say online because of audience	Allows students to experience another place where French exists	Differences in learning styles & abilities can be addressed	Teachers can create courses which are richer & better structured
Inexpensive source of information	Makes possible new levels of individualization	Sharing student-generated work is an important use of Internet	Students are motivated by the instant feedback	Students can construct knowledge on their own	Allows a more constructivist, facilitative, multi-disciplinary style of teaching
Useful for searching out background information	Allows for communication with family & friends	We must think Internet & not book learning when we use Internet	Students are more positive about French	Allows student to learn on own while using alternate approach to teaching	Can be used to create tailor-made multimedia learning activities

<b>Resources &amp; information</b>	<b>Communication &amp; collaboration</b>	<b>Real-world learning</b>	<b>Motivation</b>	<b>Learning</b>	<b>Teaching</b>
Useful for accessing French literature, newspapers, sports, music & dictionary sites	Can be used for correspondence by e-mail	Linear model of learn, answer questions, test is based on book learning	Students are reading & conversing 100% in French which they would not do in the classroom	Students can engage in Internet competitions	Allows for reinforcement of grammatical points & structures
Fear of students not having adequate resources has now disappeared	Can be used for journal correspondence with other schools	Projects can be based on real questions about world & students can find their own answers	Feelings of success online are important to students who usually struggle with regular class work	Students can access games, puzzles, maps	Useful for enrichment & to go beyond expected curricular outcomes
Students gain even more if they create the online material	Communication provides personal exposure to French language	Learning on Internet is more effective than T. V. screen in class	Interactive grammar exercises are more interesting than a worksheet	Students realize teacher does not have to be font of knowledge	Source of latest ideas, methods & approaches & techniques
Provides information to support the literature component of program	Represents a valuable & viable conduit to L2 success		Internet increases motivation	Students can use OLEs for sending greeting cards	Provides access to games & enjoyable activities for students

<b>Resources &amp; information</b>	<b>Communication &amp; collaboration</b>	<b>Real-world learning</b>	<b>Motivation</b>	<b>Learning</b>	<b>Teaching</b>
Can be used to find songs and lyrics of French music	Teacher should not be only linguistic model			Provides interactive activities, treasure hunts, crosswords	Technology forces teacher to be a facilitator
Useful for doing research on French-speaking cities, countries, communities	Online chat allows opportunity to clarify grammar			Keeps students on task	Provides support for cultural objectives of program
Impermanent nature of sites gives students feeling they are dealing with living data	Internet is best used as a communication tool			Today's students are different from those of 2-3 years ago and are raised in audio-visual environments	If teacher is willing to be guide on side, technology becomes an asset
Helps in teaching to remote small schools	Students are ravenous for contact with outside world			Reports & music clips can be downloaded for listening activities	Can be used in the development of themes

<b>Resources &amp; information</b>	<b>Communication &amp; collaboration</b>	<b>Real-world learning</b>	<b>Motivation</b>	<b>Learning</b>	<b>Teaching</b>
Speaks to the need of cross-disciplinary teaching	Encourages collaborations that take students far beyond classroom			Opens up classroom to more cultural inputs than library	Willingness to watch other teacher's approach critical to proper use of Internet
Provides access to most media				Presents activities that are relevant and interesting so students are too involved to use English	Boring to use only prescribed materials & not spice up teaching with new methods
Students interact with information that is contemporary				Provides a change of pace from the regular classroom	Allows teacher to vary teaching style and pushes teacher to keep changing
Access to info fills a void that existed in pre-internet times				Provides students with other language models	Can be used to search for ideas, lesson plans or articles

Table 5.2 Summary of beliefs related to the advantages to use of OLEs

In many cases, coupled with the enthusiasm about the advantages of OLEs are the frustrations experienced by some teachers as a result of their attempts to make use of OLEs. The next sections of this chapter concentrate on a different category of beliefs than what was presented in this section. Learning and teaching may be enhanced through use of OLEs. Yet for some teachers, the frustrations experienced or perceived have led the teachers to form beliefs that raise important issues and questions about the use of OLEs in language learning.

### **5.3 Beliefs Related to the Challenges to Use of OLEs**

In contrast to the previous section which concentrated on the value of OLEs for the teaching and learning of FSFL, this section highlights those beliefs which generally question its value or which raise concerns about use of OLEs. Issues related to time and the curriculum constitute the first sub-category in this section. The lack of training, support and vision constitute the second sub-category. The third sub-category focuses on issues related to connectivity, online access, access to computer labs and supply of equipment. The fourth sub-category concentrates on beliefs which present the challenges related to monitoring students while online and controlling what they do and access while online. Students themselves are the focus of the next sub-category as teachers describe their beliefs about how, sometimes, students may resist their attempts at trying to teach and promote learning in OLEs. In the final sub-category are beliefs which emphasize the particular challenges related to the Internet, and such issues as navigation and information overload.

#### **5.3.1 Time and the Curriculum**

In this sub-category, two main issues provide the focus of beliefs: time and the curriculum. Some of the beliefs in this section could have been grouped separately, i.e. some in a sub-category of time and others in a sub-category related to the curriculum. However, while teachers might believe that the Internet is “good resource” for the curriculum, they may also see it as a “great time-waster”. The importance of time

management in teaching was expressed by this teacher's comments in relation to use of the Internet: "Time is of the essence when teaching therefore one is apt to give up before achieving success." Many teachers in this study referred to lack of available time to be able to prepare for use of the Internet in their teaching: "All of potential (sic) for internet is unlimited but like many others there is no time to get on it. I do not have preparation time of any kind and I have to leave some time for a personal life". Teachers expressed the belief that use of the Internet in the teaching of French is "time-consuming", that it requires opportunities for "advance preparation" and that "availability of preparation time necessary to use the internet in class is limited". While a teacher may want to devote more time to the Internet, "There are so many demands put on teachers, it is very difficult to find the time to do all the things one would like to do".

Time can be consumed by "surfing aimlessly", by students "browsing the web in other areas", by needing to screen sources "so as to ensure that communication is in French" waiting for information to be downloaded, translating sites and posting student work on the Internet. Preparation time may be lengthened as the technology becomes more sophisticated: "je passe plus de temps à analyser une vidéo qu'à analyser un vieux film fixe ou une photo; je passe plus de temps à préparer, dans mon ordinateur, un exercice avec des liens hypertextes qu'à ronéotyper un texte, je passe un temps fou à essayer de suivre les trop rapides évolutions informatiques...".

The vast nature of the Internet can challenge the time that teachers have available to them: "I am constantly exploring new sites that friends or the listservs that I belong to recommend and trying to come up with innovative seasonal projects as well. There is so much material on the web and so little free-time to access it!" Time is necessary in order to plan properly in order to make best use of instructional periods: "Few teachers are willing to spend the time it takes to find sites, plan lessons around them and assess their effectiveness. Without that commitment, these projects can eat up valuable time and lead nowhere". Another teacher described needing the preparation time in order to reach a certain comfort level in the use of technology: "I can't seem to find the time to get prepared where I feel comfortable using it as a teaching tool".

In terms of teachers' beliefs about time and the Internet, the curriculum plays an important and conflicting role. Having sufficient time to devote to the curriculum may mean that there is not time for integration of the Internet as this teacher explains:

I'm afraid that the projects will take a long time to complete. I'm always pressed to cover all the objectives by June and I'm afraid that I'll fall behind by taking my students to computer room. The Internet seems like something extra that needs to be taught, even though i now (sic) it's supposed to be integrated into the curriculum like any other tool.

Some teachers in the study described not using the Internet more because of a lack of "instructional time to complete the prescribed curriculum". They noted that use of OLEs may actually decrease "the necessary instructional time needed for the completion of the prescribed curriculum". Concerns about time led one teacher to affirm that "Using the internet with young children is not using instructional time wisely". In the following excerpt, a teacher described in detail the challenges related to use of OLEs and time at the primary level:

The time needed to plan effective use of the internet is daunting. Simply finding appropriate sites takes forever when you end up with over 500 hits on a certain topic and those hits have links, and the links have links.. well, before you know it, you've been on-line for 3 hours and still haven't figured out what you're going to do for your internet class! This being said, I have to admit that this is very time-consuming. Working with young children always is. Typing even a few sentences takes forever, and when you add typing in a second language, correcting, using accents, etc., it's even worse. (And this is assuming that your computers are up and running when you need them). This is the problem with keypal activities, too.

Finding sites related to the curriculum that are at the appropriate level of difficulty for the students and evaluating if the sites are at a level the students can understand may also consume valuable time: "With such an intense curriculum, to use the Internet one must have appropriate sites to ensure objectives of lessons could be achieved and make maximum use of time". Teachers remarked that they already have plenty of resources with which they are very busy, that their program is "already so jam-packed full of activities, you have to make an effort to fit in an Internet activity usually

at the expense of something else". Others explained that they cannot use the Internet because there is "too much other curriculum to cover". One teacher described the conflict between time, technology and the curriculum:

Our educational system works against these very valuable but time-eating learning projects. There's the "curriculum to cover" - always more than is ever possible even without the extra projects. Why do just two themes when we can do six? And what's wrong with a system that has kids and teachers running from one subject (sometimes even one room) to the next, with no time to reflect, to process, to - gasp! - relax? It drives me crazy. And as long as teachers are willing to play by those antiquated rules, the nouvelles technologies will remain just that.

As one teacher observed: "Every one of my colleagues says the same thing: 'I'd love to do that (e-mail correspondence, joint research projects, global surveys, etc.), but I don't have time". The traditional curriculum always takes precedence, and 'covering the material' as laid out in the district curriculum guide is forever the driving force". Other teachers may argue that the problem is, not with lack of time and curriculum demands, but with the teachers themselves: "I think that teachers do feel pressured by many factors to cover their curriculum but I think the main problem why teachers don't "fit " anything else in is with the time-management skills and the motivation of the teacher." Personal factors may also play a role: "There is no free time at school and I have a very busy family life. Computers and technology are not 'interests' of mine. I tend to focus more on creative aspects of teaching (i.e. art, music, singing, writing etc.)." It may also be that what is needed to balance time and the curriculum is commitment:

The number one skill to master is time-management! Teachers need time to search out international schools that seem promising for collaborative work; time to correspond with teachers on the other end and to plan the course of action; time to look at their own curricular needs - either thematic (Native Americans, the human body, the rain forest, etc.) or linguistic (literacy skills, vocabulary development) and to embed those objectives into the project; time to work on the project in class and still get in math, reading, science, etc.; time to assess the project and students' individual performance; and finally, time to learn the technical stuff. If teachers can manage all that, they have all the skills they need. But that is one huge task, and without a deep-seated commitment to looking

"outside the box," that just ain't gonna happen!!!

Certain issues related to curriculum and teaching independent of the issue of time may, for some teachers, present challenges to use of OLEs. One teacher questioned the Internet's "relevance to the curriculum". Another noted that she did not "see a lot of benefit coming from it". Other teachers commented that "matching projects/activities with curriculum objectives is sometimes a problem" or that "the activities and lessons suggested are not conducive to Internet usage". Others explained that they do not use the Internet because they "...have a very good program to use and time is also a factor ...". Another teacher explained: "I do not feel that I need to use the Internet more often since it is important to vary teaching methods and resources to provide students the best opportunity for learning". Beliefs about what constitutes effective learning can also affect a teacher's willingness to use or interest in OLEs: "While a great deal can be learned from the Internet, it should not be used as the sole resource. There are many other valuable resources available which should not be overlooked simply because we, as educators, have jumped on the 'computer bandwagon'. Moderation and variety are the keys to successful learning".

Teachers may need to be reassured that there is indeed a benefit coming from use of OLEs. Curriculum outcomes and objectives must be the driving force behind attempts at technology integration according to this teacher's beliefs:

It is a resource, however, that needs to be used with specific goals in mind which require frequent evaluation to determine if the technology is indeed able to meet curricular outcomes. I find it somewhat disturbing that some educators feel they are progressive in their methods simply because they use computers. Again we must keep our objectives in clear view and ensure that students are benefitting from the technology.

Use of OLEs, on one hand, and the curriculum, on the other, may be seen as being in competition with each other. Teachers commented that "there is too much material to be covered in the curriculum to allow teachers to experiment with the Internet". This may be the case particularly for primary teachers: "I find the primary

French Immersion program to be ‘surchargé’ already because we really have to build up children’s language levels so that they can understand the materials and information which come at them everyday.” The following primary teacher explains why she does not believe in encouraging online learning with her students:

Teaching grade 2 students to go on the Internet (regardless of Fre-eng) when they should be taught sound reading and writing principles seems to me to be putting the cart before the horse. Our curriculum is overloaded. Therefore one would have to be done at the expense of the other. Above all else, I want my kids to enjoy and value a good book.

Other challenges that were raised by teachers focused specifically on working in a second language in OLEs. In the following excerpt, the teacher argues that there are challenges that arise in online learning simply because of the fact that students are working in a language which is not native to them:

But most importantly, we are talkng (sic) about a second language here! Unless you happen to be fortunate enough to have French-speaking support in your media center, it is up to the teacher to provide the linguistic help that non-natives need to navigate their way through the Internet. Project-based learning is very different in the L2 classroom, where students' language acquisition is far below their intellectual abilities. It doesn't matter if you're in a third grade French immersion class, in high school or even at the university: unless your L2 reading level is on a par with that of your native language, everything takes twice as long, and the teacher's role as language resource is critical if students are really going to benefit from their time spent on the ‘Net’.

The following excerpt presents the results of one teacher’s attempts at conducting an online project. The teacher describes her frustrations with trying to teach her students how to design web pages in French:

I am pleased with the pages but I feel as if I did not meet the objectives of the French curriculum. Most (all really) of the classes in the lab were conducted in English. It is impossible to teach grade eight Core students how to do something so complicated using the French language. Also, because we have only 16 machines and each class has 25+ kids of varying abilities and motivation, several kids finished a week before the others. Add into this the students who were absent every time we went

to the lab (they don't even have a web created!), and it made for some confusion

The conflict and problems evident in the beliefs in this sub-category highlight the problems encountered by teachers in relation to trying to organize their time in order to meet the demands of the curriculum and of working in OLEs. Increased training and support may not address all of the issues related to time and the curriculum, but, as the next section may illustrate, some teachers believe that the lack of training, support and a clear vision represent significant challenges to use of OLEs for the teaching and learning of FSFL.

### **5.3.2 Training, Support and Vision**

As its title suggests, this sub-category groups beliefs relates to three areas. For some teachers, training is a type of support. For others, while they do not require specific instructions in how to use the technologies, they may require assistance, technical support, or moral support. The link between training and support, on one hand, and vision, on the other, comes from teacher's belief that, as part of learning how to integrate technology, they need to understand why they should integrate it, for what purposes, and with what benefits.

While some may think that teacher preparation programs would train teachers in how to make use of OLEs, often this is not the case. As one teacher noted: "I tend to fall back on the way I learned best which did not include the Internet (sic)." The fast pace at which technology changes can present an even greater challenges in terms of trying to keep pace and learn new skills: "Technology changes so fast, anything I would have learned in my schooling is outdated. (And I graduated in 1996!) The schools are all too often outdated themselves, creating a reverse problem, the new teachers understand how to use the new technology but the school (sic) has the old stuff." Texts, experience and university training are not always effective means of preparing teachers for use of the Internet:

Since I believe that there is such a thing as a "teacher's personality" (with all the suspicions these stereotypes justly evoke), I am sure that we tend to invest a much more considerable part of our preparation time for internet courses. We all tend more or less to be "perfect" and want our lessons to be adequate. Whereas experience and routine as well as textbooks (in the largest sense) help us as guidelines, we are completely helpless when attacking such a new thing as internet. Besides, we also have no idea of what kind of result we can expect. We also have a certain knowledge of teaching techniques from university - but for most of us this modern device was non existent when we were trained.

The lack of training and, subsequently the lack of knowledge in how to make use of OLEs, results in high levels of frustration for some: "With such emphasis on technology/internet etc. in the schools now...I am extremely frustrated as a teacher because inservice in these areas is not provided. If I am expected to do it along with everything else I do outside of the many extra hours I work at home, then I say no!" The frustrations experienced by some teachers may also be accompanied by certain fears about using new technologies. In the following excerpt, one teacher expresses the belief that training must take into consideration teachers' emotional response to the new technology:

While I agree that children's learning opportunities are often severely hampered by the slow pace of teacher development and that even leading edge technology can wilt if teachers default to their old ways, we need to remember that many adults are petrified of this stuff...The focus in teacher development should be on tapping into the excitement of technology without putting a lot of pressure. It should be made clear that NO one is an expert, that we're all in the same soup learning along side our students and our colleagues.

In terms of teachers' emotional response to technology, training may be important in order to give them the confidence needed to believe that they can effectively deliver a lesson. As one teacher commented: "In terms of adjusting, I am still a lot more cautious than I would like to be about using the technology....I feel great when a lesson works well, but I don't relish the sense of nervousness I feel before a lesson!" The nervousness experienced by teachers may lead them to avoid using computers

because they “feel intimidated by their lack of knowledge”. Concerns and fears about wasting time or about the perception of colleagues may, as well, discourage a teacher from making use of the Internet in teaching:

Je crois qu'Internet sert beaucoup pour une classe, tantot quand tout le monde est ensemble, tantot pour un travail individuel. Mais je ne sais pas comment utiliser Internet dans ma pratique quotidienne, j'ai peur d'amener mes étudiants au centre de ressources et perdre les 40 minutes de classe d'autant plus que les professeurs de langue ne sont pas censés utiliser cet espace. Nous avons notre laboratoire avec audio et vidéo. Il y a beaucoup de résistance au changement et si je vais au centre et que je perds mon temps, ça ne va pas être très agréable. Au fait, je veux travailler avec Internet en classe de FLE mais je ne sais quoi ni comment. Un vrai problème, n'est-ce pas?

Feeling “comfortable” is important to some teachers in terms of their willingness to use the technology in the classroom. One teacher commented that she was “Only at (sic) basic stage of being comfortable with Internet”. Another commented: “I tend to rely on the tried and true. I guess I don't feel comfortable enough with it myself to show stuff to students.” And another: “We have a long way to go before the ‘net’ becomes a comfortable part of our school day. A lot of money is pent (sic) on hardware/software but not on support/training.” To feel comfortable using the Internet, teachers may believe that it is important that they know more than the students on the subject: “I don't feel comfortable myself using the Internet. I feel that when we use it as a group activity I know less than most of the kids”. Without adequate training, teachers may feel ill-equipped to help students: “I do not feel like I have adequate skills to help my students utilize the Interenet”(sic). The lack of comfort with technology led one teacher to conclude: “If I cannot do it myself I cannot teach it”.

In terms of training, some participants in this study believe that teachers need skills “to fix things”, “to find the information” needed, and “to use it efficiently in class”. They require “inservice on ways to integrate it into the curriculum” and “further instruction on project based learning” as well as “appropriate follow-up on an on-going basis”. Some teachers in this study indicated that were very willing to use the

technology, recognized its potential, but needed training in the technical aspects of using the Internet:

Quant à l'Internet comme instrument de recherche...j'y vois plein de potentiel sans avoir appris à en profiter. J'ai toujours de la difficulté à accéder au RFI par exemple, parce que "download RealPlayer" n'a jamais réussi. En bref, je suis consciente du potentiel, mais je reconnais que les profs qui sont beaucoup moins enthousiaste que je ne suis et qui connaissent les problèmes techniques que je connais n'y arriveront pas.

Teachers are also interested in "knowing what sites to access and what the objectives of using the sites are". They are interested in "knowing which sites are appropriate" and "knowing what sites are available" and which ones "fit with the prescribed curriculum". One area in which training may be lacking and needed is in the identification of appropriate resources and activities. Teachers indicated that there is a "lack of info about suitable on-line activities or uses" and that they "are not aware of sites" which correspond to "curriculum outcomes". Another noted that if teachers knew good sites, they would be able and willing to access them: "If someone could point out valuable sites or activities to me, I'm open to becoming involved".

Knowing which sites are available and which ones are appropriate represents a type of training from which some teachers would benefit. Others may also believe that they require training to understand the vocabulary and to have a "knowledge of the computer terminology in French":

I think the greatest pitfall in foreign language education is the fact that teachers often do not know this vocabulary in French themselves and so fall back on the English out of expediency. High-school teachers who have relied primarily on text-book language would find it extremely difficult to teach computer-related skills in French. And then to get onto the Internet and encounter texts cold - with no chance to look up new words - can be very threatening to teachers who are used to following a text book. I applaud those teachers who have taught themselves the lingo and who work on their reading skills so that they can be effective teachers in improvised situations. But I don't think many teacher-preparation programs include this kind of learning experience.

For some teachers, training represents a means of understanding how to integrate

sites into pedagogical material: "For me, the internet is like a huge resource centre full of partially catalogued (sic) books. I need somebody to help me find what I am looking for because I don't have the time to read each table of contents for those books not yet catalogued....The part I find the most frustrating is finding the time and energy to decide how these sites will be useful to my students". Training may help teachers understand, not only how to use the technology, but why to use it. Some participants in the study indicated in terms of the Internet that they were "not aware of its value in improving learning" or that "We would need a reason to go online" or, as another teacher stated: "I would need to decide exactly why I am using the Internet with my class". Others need concrete suggestions or ideas about what they might do with online resources and tools: "Maybe it's because I'm not very creative, but I have difficulty coming up with ideas for projects which could incorporate the Internet".

Not knowing how to integrate use of OLEs into present practices presents a significant challenge to some teachers: "I must confess I am one of those teachers who believes that the internet is a very useful teaching tool but have not yet figured out how to incorporate it into my teaching on a regular basis. I have not yet learned how to create a web page and my main use of the internet at present is for e-mail and discussion (sic) groups." In spite of an interest in and willingness to use new technologies, some teachers may be completely unaware of how to exploit the material pedagogically:

Mon problème est que je ne sais pas trop comment utiliser l'Internet en classe. C'est qui me manque est une formation pour transformer ce que je trouve en Internet en outil didactique. Peut-être n'y a-t-il pas une formation de ce genre? Et c'est nous les professeurs qui devons trouver l'utilité didactique à Internet? Avec d'autres outils (articles de presse, K7, vidéo), je sais comment les utiliser car j'ai été formée pour cela. Sauf peut-être pour la vidéo, mais j'ai lu des livres du type "La vidéo en classe de langue". Mais en ce qui concerne Internet, je me trouve face à un support très riche, varié, hétérogène et je ne sais pas m'en servir du point de vue pédagogique. Ça me passionne les endroits que je découvre, mais que faire pour transformer cela en matériel didactique?

In the following excerpt from a discussion with one of the study's participants,

there is a criticism of certain approaches taken to training in use of OLEs. The individual argues that too much emphasis is placed on technical training and not enough on the pedagogical training needed by teachers in order to effectively integrate OLEs into their teaching:

Les nouveaux paradigmes pédagogiques ne sont pas perçus, appréhendés, -donc non-appropriés-, par les enseignants. Ils continuent à travailler comme par le passé sans information et sans maîtrise des outils. Les formateurs des enseignants sont surtout familiers des technologies informatiques... De ce fait, l'accent est mis sur la technologie informatique, les réseaux, comment ça marche...; rien sur les usages, encore moins sur la nouvelle pédagogie à prodiguer. Je peux compter l'expérience d'enseignants qui à l'issue de 5 jours passés en formation, ne maîtrisaient pas la recherche l'information sur les moteurs de recherche.....Ils ne reçoivent donc aucune formation à l'accompagnement pédagogique, tout étant mis sur la maîtrise technologique, à savoir faire fonctionner la machine, (ce qui peut bien sûr dépanner les profs en peine de le faire), mais les élèves dans ce cas sont laissés à leur appréhension faute d'un projet d'ensemble.

While some may believe that there is too much emphasis on technical training to the detriment of pedagogical training, others may argue that without the necessary technical training which must come first, teachers will remain essentially fearful of and uncomfortable with the new technologies:

Internet, c'est d'un seul coup pour des profs étrangers souvent beaucoup plus isolés et limités dans leurs pratiques de classe qu'on ne croit, quelque chose d'infiniment ouvert et qui donne le vertige. Dans un premier temps, bien comprendre ce qu'on peut faire avec l'outil rassure. La formation ne doit en aucun cas faire l'impasse sur les différents usages et sur les pratiques nécessairement participatives qu'ils induisent mais dans un second temps. Si l'enseignant se sent dépassé par la machine, il ne peut en aucun cas apporter une dynamique à sa classe, déterminer des objectifs et évaluer des travaux. On n'est pas sérieux envers les enseignants en leur laissant croire que la technique est vite apprise qu'elle n'est rien. Non, elle est un préalable parfois difficile à assimiler, qui demande des répétitions, de la pratique avant de l'oublier pour se consacrer à l'essentiel: les questions pédagogiques. Si on oublie ça, on crée des gens mal à l'aise avec les nouveaux outils qui n'osent avouer leurs peurs parce qu'il faut être moderne et connecté.

A similar belief about the importance of technical training as a prerequisite to pedagogical training is expressed by the following participant in the study:

En clair, avant de parler des usages d'une technologie comme Internet en classe de langues, il faut de leur point de vue apprendre d'abord à se servir de l'outil. Inutile d'explorer les ressources disponibles sur la toile si les techniques de sauvegarde d'une image, d'un texte n'ont pas été assimilées. Inutile de savoir quels sont les avantages pour la classe d'une correspondance électronique si on ne maîtrise pas correctement un logiciel de messagerie. Il faut un minimum de maîtrise de l'outil pour aborder les questions d'ordre didactique.

In some cases, teachers may not believe that it is training which is required rather it is an increased level of support from administrators: "Some administrations do not give release time and/or make compensatory accommodations for teachers who want to integrate technology into the curriculum and assess its effectiveness in reaching curricular objectives". For others, it may be technical support which is required: "I teach in a small school where computer literacy especially trouble-shooting is limited. This discourages computer use in my very busy demanding teaching day". Support can also take the form of providing teachers with a desire to want to change and to try something new:

All too often teachers are left in their room and the only support they have is their textbook and the other materials dictated by the powers that be! No wonder they don't want to change. We work so hard to create excitement in our students and hope that it will spread through the rest of the class, that we forget to fuel the excitement with other teachers.

Another form of support is that which comes from fellow teachers: "I believe more teachers would be more apt to use the Internet if they had more support and training. Anything I see done at present is all done through the individual teacher's initiative. There is not much mentoring between the teachers that do know how to use technology and those that don't". The lack of mentoring may be difficult to achieve when fellow teachers have different beliefs about what it means to teach effectively. The

following teacher describes her beliefs about colleagues' reaction to her use of technology:

I am considered a nut, albeit a nice, friendly one, by my colleagues. Nose in the computer, out of touch with "reality" and so on and so forth. For years, I tried to convert them, with absolutely no success, but occasionally with some backlash. Please note that my colleagues are all hard-working, very dedicated teachers whose goal is to get their students (university level, ranging from beginners to advanced) to master the French language and literature. But they are convinced that the only way to do this effectively is for the teacher to be the almost-only source of input of knowledge. (the almost part consists of supplemental materials, carefully chosen, such as slides, video, audio and even the occasional web site - the latter being rare). There is an unspoken, perhaps unconscious, distrust of the ability of students to learn on their own... they must be carefully led to knowledge and that knowledge structured according to the priorities of the teacher. And testing... sigh... I can best describe that sort of testing as a regurgitation of what the teacher has tried to instill, mostly in terms of grammar correctitude (yes, I know that's not a word).

Teachers may have different beliefs about teaching and learning that can affect their interest in technology integration. The newness of the Internet can affect teachers' beliefs about its usefulness and result in less support for teachers interested in making use of it. One teacher described her experience and beliefs about her colleagues' perceptions in this area: "Since I am delving into "waters" as yet unexplored I have little support from my colleagues. (Many of them think the use of technology in the classroom is a "passing fad" and are unwilling to use it.)". The perceived lack of support may result from different levels of enthusiasm and interest in using OLEs:

My frustration is that few others at our school share this enthusiasm, and without that sense of adventure and excitement, it is hard to be motivated to put forth the extra time and effort that Internet projects require. I do not really fault my colleagues; we are so overwhelmed by the demands of teaching in an immersion program where everything has to be translated, adapted and squeezed into too few hours. Teachers are stressed and tired (and it's only October!) and just want to get through their curricula. And the biggest reason for the apathy is the lack of tech support available to us. Every year we get more and more equipment but no added time to learn how to use it or how to implement it in the classroom. Most teachers

have simply given up.

As the beliefs in the previous excerpts have shown, there are many issues related to training and support for use of OLEs in the teaching of French. A further issue raised by participants in this study is that of the ultimate aim of training and support. The following excerpt suggests what this aim should be by pointing to the pitfalls of lack of training and development:

The one piece that is crucial to the success of Internet-based teaching - and which is so often lacking - is staff development. As I mentioned above, without good tech support to ensure that equipment is working, teachers lose interest. And without staff development time (which means \$), we will continue to teach in the same old way, tinkling with machinery but never really redefining how we teach. New technology has to mean new teaching practices, but we are not there yet.

A similar insistence on changing existing practices and on forging new paradigms is expressed in this criticism of the current vogue of interest in new technologies in France. The individual's criticism points to a need to move beyond a purely technological vision in the use of OLEs:

L'effet de mode "NTIC" qui sevit en France conduit a sur-valoriser la technique, le cote marchand, a en faire un passage oblige; certainement pas a insister sur les nouveaux usages, sur les enjeux pour la formation des jeunes, sur les nouveaux paradigmes dans l'apprentissage (sic) et dans le rapport au monde, sur les nouvelles ecritures, etc..., bref a indiquer les tendances et a clarifier les reels atouts de ces technologies pour repondre a des besoins identifies. Pour moi, ces comportements ou attitudes recelent un risque potentiel de derive, d'echec dans l'introduction de ces technologies dans l'enseignement si on en reste a une vision purement technologique.

While a vision that moves beyond the technical aspects may be necessary for effective use of OLEs, still, some maintain that for full integration of the Internet into teaching, large-scale systemic change as well as changes in thinking of teachers, parents and students will also be needed:

If we accept that the majority of education will be conducted by means

of the internet, then we're going to have to start from the bottom up, demolishing ivory towers and slaughtering sacred cows on the way. \*All\* of us would have to be re-educated, though some (like me) would need more re-education than others. That's a big "if". Those of us in the trenches know it would take a while, even if accepted philosophically, because it would require incredible amounts of money to implement. A lot of our colleagues (sic) are very comfortable with the way things are now. So are a lot of the parents of the kids we teach. So are a lot of the folks in the universities who are teaching our soon-to-be-colleagues. If we, as a society, decide to go this route, there are a \*bunch\* of challenges ahead.

Having a vision and wanting to bring about change may require facing many "challenges ahead". The beliefs expressed in the following excerpt suggest that such challenges may be insurmountable:

In order to implement this degree of change, we'd have to teach the teachers how to use the internet, and help guide them toward developing their own courses. Then, we'd have to cut class size down from the present 25-30 student average to about half that many kids. We'd have to give teachers prep periods (most Alabaman teachers do not have prep periods during the school day - if you need to prepare classes, you do it at home, or at school before and after the school day). While doing this, you have to convince the State Board of Education, the parish (that's Alabaman for county) school board, and the parents that you're doing the right thing. Re-reading this, it sounds an awful lot like whining, but that's not the point. I just wanted to point out that there may be reasons other than conceptual disagreements to not hurtle into using the internet as the primary resource for teaching.

A further challenge to bringing about full integration of technology into language teaching relates to the difficulty in changing the way people think. In the following excerpt, the teacher is critical of repeated attempts to change ways of thinking, practices and roles by introducing a new tool:

Les formateurs devraient être des pédagogues familiers des concepts et des usages d'une pédagogie active, bien-sûr mais d'un autre côté on ne peut pas changer brusquement les mentalités. A chaque fois qu'un nouvel outil fait son apparition dans la classe de langues c'est la même histoire, on veut tout lui faire porter..et les mêmes discours messianiques reviennent..on va bouleverser les pratiques pédagogiques, on va faire du

prof un incitateur, un facilitateur et l'élève va se former seul avec la machine,etc..

Some may argue that what appears to be a vision for technology integration is nothing more than an illusion. In the following excerpt, a teacher reflects on what can happen as a result of having a view that is too technocentric:

Beaucoup de decideurs et d'enseignants sur-valorisent la technologie (ce que j'appellerai " l'illusion technologique"); aucun accompagnement a la mise en place de projets pedagogiques n'est reellement mis en place, ni suivi et evaluation a fortiori...j'employais le terme d'ILLUSION TECHNOLOGIQUE pour denoncer 2 types de comportements: - le premier qui consiste a ne voir la technologie que comme une fin en soi, un but. On achete, on installe des equipements (micro-ordinateurs et modems, le plus souvent des PC bas de gamme peu evolutifs, peu chers pour avoir le maximum de machines, achetes chez l'assembleur du coin, mais avec tous les problemes de maintenance que cela induit tres vite et tres souvent) et pour le reste,- a la fois les contenus pedagogiques, les usages pedagogiques, les logiciels educatifs, les budgets pour un reel fonctionnement (ne serait-ce qu'une ligne telephonique dediee a l'Internet, les couts de connexion, ...) ne sont pas pris en compte par les financeurs ou l'Education Nationale. Cela est laisse aux etablissements qui ont toujours la meme enveloppe de fonctionnement et cet aspect peut etre critique....Pour developper un peu plus ce concept d'illusion technologique, - et cela est mon deuxieme point -, ce discours technologique est devenu dominant dans la bouche de quelques universitaires en sciences de l'education, ceux qui decouvrent ces technologies aujourd'hui et qu'elles fascinent plus qu'ils les utilisent. Tous les problemes d'acces aux savoirs, a la formation, etc... seraient resolus grace a l'Internet, l'extranet, l'intranet, les Cd-roms... sans distinguo. Il ya la un mythe sous-jacent. On s'achemine ainsi à former des "developpeurs" de produits de formation, pas des pedagogues Nouvelles Technologies Educatives...

Myths, illusions or visions? The beliefs expressed in this section on the challenges related to use of OLEs suggest that the issues of training and support are indeed complex issues particularly because they relate to larger issues or questions such as: Why are we using the technology ?, How should we use the technology? and, Should we use the technology?. The following section considers other challenges

related to technology use. These challenges relate less to theoretical issues such as visions and changing mentalities, and more to practical issues such as having the required equipment and obtaining online access.

### **5.3.3 Access and Equipment**

While many of the beliefs about the obstacles to computer use may relate to human factors, some of these beliefs relate as well, to strictly technological issues such as lack of equipment, unreliable equipment or access to services or to the computer lab, slow connections and lack of technical assistance. Teachers' reluctance to use the Internet in teaching may be related to lack of access to the Internet at home: "I am not connected at home so I find it time-consuming after school to prepare lessons." In other cases, access may only be available outside of school at the local library. Newfoundland teachers are provided with ten hours per month of free online access through STEM-Net<sup>1</sup>. However, teachers may find such access to be insufficient if they have to use this account for student projects. One teacher explained why she would not use OLEs with her students: "I presently would have to use my own stemnet acct".

Even within the school, access may be limited: "We can only access the Internet from the resource centre where there are only 4 computers-it is simply a waste of time if you have 25 students wanting to get online. So we direct students to more traditional sources using the internet where possible". One option to limited access might be to send students off to work on their own on the computers either in the computer lab or the resource centre while the teacher continues working with the rest of the class. Such an arrangement may appear practical to some teachers but not to all:

Working independently on the Internet is, for many students, not an option. For younger children, there often is not the freedom to wander in and out of the media center without their teacher. And high school students have one period a day in which to work on their project. If there are computers in the classroom, there's a fighting chance that a few kids at a time can work at the computer, but it is unrealistic to think you can

<sup>1</sup> STEM-Net is a computer network for professional K-12 educators in the province of Newfoundland and Labrador, Canada.

get twenty-five kids through a project without a computer lab and a set time to work on it.

Where access is available, connection speeds may not suit the needs of teachers: "Internet access is somewhat slow & difficult in our region as our phone lines seem to be of an antiquated system and the long distance call is a disadvantage also." For some teachers, lack of access to equipment may represent an obstacle to use. The fact that there is "...not always one computer per student" may discourage integration by teachers: "I don't use it more because in many cases I would prefer for the students to work on individual computers". As one teacher explained, frustrations arise, as well, from having "to work on outdated computers" or from situations where there are "not enough computers in working order". Teachers may respond negatively to arrangements whereby students must work in groups of two or three on one computer: "I just wish I had one computer for each kid, we only have 10 in the lab and they double or triple up on a machine--not too much fun". In some cases, computers may need to be shared among large groups: "I have "dabbled" with the use of the internet in my classroom but found it difficult when there was only one computer for 25 kids in the class and no computer lab in the elementary school".

Lack of access to computer labs represents another perceived obstacle to use of OLEs in teaching. Teachers in this study described how, "all labs are busy" and how "booking the facilities is difficult due to a high demand by other classes". Some described the computer lab as being "too widely used". Lack of access is attributed in some cases to competition with courses such as science and math: "I have to book the computer lab-which is practically in full use with computer science courses." One teacher described the importance of lab access and the challenges faced by language classes in gaining access: "The other issue of lab access is critical, especially in secondary schools. I hear all the time how low on the priority pole language classes are in terms of scheduling lab time. Business, math & tech ed. are placed first. As was mentioned by another Credo contributor, we have to accept that students will have to use

other means to gain www access, e.g., home computers, libraries.”

The issue of reliability of equipment and access is critical in terms of being able to work effectively in online environments. Teachers described how: “all sorts of things go wrong”, “the network is a problem because it crashes” and a teacher “could have a lesson planned and the Internet is down for the whole period”. Problems with reliability may appear overwhelming at times: “Half the time, all the computers are not up and running. If a kid is lucky enough to find something, then most likely the printer doesn’t work. One hassle after another”. For teachers who have planned an entire lesson around use of the Internet, reliability of access is important: “It is sometimes frustrating when you plan and the network is down or you can’t get access”. The experience may also appear “frustrating for students who lose site (sic) in the middle of researching due to computer freezing.” The frustrations with limited access and unreliability of equipment may relate in part to the belief that teachers have little or no control over the technical problems that might occur when trying to use the Internet:

The limiting factor for me is computer lab time, and reliability of equipment - it is a very common situation to go into the lab and have half the computers not work, or work extremely slowly...I can be flexible about a lot of factors while teaching, but it is more difficult when one feels that the factor is out of one's control to a certain extent. It's tough on the students (as well as the teacher!) when they are expecting an activity-filled, profitable period and they are twiddling their thumbs while I try (mostly without success) to get cranky computers to behave.

In addition to problems related to accessibility and reliability of equipment, there is the problem of speed of access and accessibility of sites. One teacher described how “connections are slow and lots of times the lines are overloaded”. In the following excerpt, a teacher describes her experiences with the problem of slow access:

Well, after seeing how others are incorporating the internet into their second language classes, I decided to try a very small project - just to add a little variety to the lesson. I intended to have the grade nine Core students access a site about Celine Dion since the info in their text is outdated (according to the text she is still single, etc.). I just moved to a new school with newer computers than my former school so I figured I

was all set! Luckily, I decided to access the site from school before trying it with the class; after a 10 minute wait, the server still had not accessed the site! Imagine if this happened during class with 25 "bored" 14 year olds!

Access may be unpredictable thus forcing teachers to come up with alternate solutions:

Unfortunately you are at the mercy of the server and the time of day. My morning classes bring info up faster than afternoon classes because of user demand at those times. I always have them take their books to the lab so if worse comes to worst, they have an alternate activity to do. Sorry, I can't offer any alternatives. If it's a good class, we usually just sit there and chat until something happens or the bell rings.

Some of the solutions to problems with access may involve use of specialized software and extensive planning:

I have used webwhacking programs (WebWhacker and WebBuddy) to simulate web navigation of one site; this allows limited ability to delve through several layers of a site. This was useful in exploring WWWpals, a site for establishing e-pal and pen-pal contacts world-wide. Students could select their country and individual "on-line", then move to pen and paper, then word-processing to create a letter. I uploaded them myself from one computer. It is often up to the teacher to find sites and on-line resources, download them to paper, develop class activities, save student products on network files or disks and then upload them to the site. Is it ideal? No.

For teachers in France and some parts of Europe, access to OLEs may be made difficult because of the associated costs. As a result of these costs, some teachers may believe that the value of use of OLEs does not measure up to their costs: "...je suis persuadé que deux ou trois profs se lanceront dans cette nouvelle aventure, mais la grande majorité d'entre elles a estimé qu'au prix de l'abonnement et des communications téléphoniques, le jeu n'en valait pas la chandelle".

As the beliefs in this section have generally indicated, lack of access and suitable equipment as well as high costs present numerous challenges to teachers and may, in

some cases, discourage use of OLEs. In the next section, beliefs about the need to control and monitor students' online activities point to other challenges faced by teachers while teaching in online environments.

#### **5.3.4 Control and Monitoring**

Monitoring and controlling what students access and do while online presents an important area of consideration for many teachers. Beliefs about this issue were expressed frequently in the context of this study. Unlike the classroom where natural limits or boundaries may lessen the need for control and monitoring, OLEs were described by some participants in this study as presenting challenges in terms of control.

One belief expressed was that teachers have less control over the pedagogical material which their students access while online: "I try to help my students learn how to find the answers. With the Internet I don't have control over what vocabulary is used or the complexity of the grammar structures". An additional concern for teachers in terms of control relates less to monitoring vocabulary or grammar and more to ensuring that students remain on task and at sites where the teacher expects them to be: "Some students are extremely adept at using the Internet. This is a problem because they start going into areas where they should not". The issue of control relates to a broader issue of students accessing "inappropriate sites" as well as to the issue of determining when the browsing is pedagogically acceptable and when it is not: "The most difficult part is the control. It is wonderful to let a student go and discover what s/he may and watch the excitement. But how do you grade that? Or how do you let them wander and yet still put boundaries up in way of proxies and supervision in the name of what is fit for the classroom and what isn't".

In the excerpts that follow, teachers relate experiences they have had in relation to the issue of control and their beliefs about how best to deal with this issue. In this first excerpt, the teacher explains how it is the role of the instructor to ensure that students act responsibly while online:

One other problem is, of course, the inappropriateness (to put it mildly) of

many sites - sites that kids can stumble upon quite innocently. I was doing a search on Paris attractions recently and in no time at all found myself at the Folies Bergeres, and you can imagine what that page had to offer! We do not have to take on the role of Internet "vice squad," but it is our duty as adults to help our students - especially adolescents - make appropriate choices. The presence of the instructor and other students can help kids be responsible "cybernautes."

The teacher's role in ensuring that students access "appropriate sites" is described by the following teacher as one of choosing sites, guiding them and monitoring their online activities:

I would not have the students do a general search without guidance! I saw what that could lead to in a music class, where, the music teacher was doing an activity in the computer lab with my class. Ten minutes before the end of the class, she decided to let them do a search for the "Spice Girls" which the students had been requesting. Well, the results of that search certainly were not appropriate! We must be careful and guide the students to appropriate web sites that we have chosen and that we continue to monitor.

The following teacher's beliefs about her role in controlling access to sites consists of more than just guiding students. Here, the teacher stresses the importance of ensuring that students access only sites which are at an appropriate pedagogical and age level by putting in place both guidelines and consequences:

The adult level of most www sites -- in terms of interest and reading level means that teachers and parents must be vigilant in supervising children and/or must set up very clear guidelines and consequences for on-line behaviour. Our school requires that all parents and students sign an appropriate use policy at the start of each school year, and our computer program goals include enabling students to become powerful searchers and responsible thinkers.

While some beliefs emphasize the importance of control, other beliefs focus more so on the need to educate children about uses and misuses of computers:

Il ne s'agit pas tant de mettre un policier derrière chaque ordinateur que de faire un véritable travail pédagogique en apprenant aux enfants tout ce que permet de faire un ordinateur ( et le réseau) mais aussi quels en sont les

dangers. C'est pourquoi, dès la rentrée prochaine, nous envisageons de mettre en place un petit groupe de pilotage internet, composé d'élèves volontaires qui seront chargés (sous le contrôle du responsable informatique) de rechercher et mettre en forme des informations qui seront alors mis à la disposition des autres élèves du collège. N'oubliez jamais qu'il est rigoureusement impossible de suivre chaque ordinateur, ne serait-ce que parce que nous n'aurons jamais les ressources humaines suffisantes et que les logiciels seront toujours, en ce qui les concerne faillibles. Par contre, un véritable travail d'éducation s'impose et ce d'autant plus que de nombreux enfants disposent d'accès au réseau chez eux, c'est à dire là où nous ne pouvons rien contrôler.

Another approach to monitoring students' use of the Internet is through extensive preplanning on the part of the teacher. In the following excerpt, the teacher explains how such planning aims to encourage effective and efficient use of students' online time by ensuring that classes are interesting and goal-oriented:

For me, the crucial element is to have the period planned well, otherwise the temptation is there for the students to start surfing if there is any down time. I find that if there is a set project with a goal, they will focus and work time-effectively. We have Cyber Patrol as our filter but some of our students are so computer-savvy that they are up to no good in seconds and bringing everyone else with them! I try to make the internet classes interesting enough to keep their attention, but also language-related and this unfortunately requires a lot of preparation and ultimately, correcting as they must pass in the completed assignments by the end of the internet class.

In spite of attempts by some teachers to ensure that students do remain focused on the task, maintaining students' attention can present serious challenges: "I just had them surf on 3 sites and I thought they would enjoy them and they did, but only for about 5 mins each. It was impossible for me to keep them on track after they had fulfilled their part of the bargain and investigated the sites". Some teachers believe that they can ensure student control by preplanning and preselecting the sites which students can access during the lesson and by disallowing random browsing:

I do not conduct many classes in the computer lab that require random browsing. Usually the students must do a guided search or I have

pre-selected the sites that they must visit to find out certain information. During a 40-minute class it would be impossible to have much constructive on-task work completed if students were permitted to randomly browse sites.

Preplanning can involve previewing sites. For the following teacher, previewing sites is combined with intensive monitoring and consequences for those who go where the teacher does not want them to be:

...I most often preview the site I want a pair of students focusing on---I also rove around constantly, and found one day last year a student who had quickly reverted to his Metallica homepage---I hollered and told him he was off navigating (my chosen site) for at least a week. The fact that he had to keep his fingers still and go back to the 'old way' of learning a FL scared the heck out of him, and it never came up again. I also threaten that I will review the "GO" button on the tool bar to make sure everyone has followed la bonne piste. Of course, I never do, like who has the time? Three teachers use my classroom during the span of two days (A/B Block)..we barely have enough time to close down the server. I am never in my room during the day, which makes pre-planning a must, especially on the Internet.

Testing sites or previewing and strictly controlling which sites students visit may be a solution to the problem of control for some teachers but it is not believed to be a solution by all: "Something I gathered from reading the various mails is that most colleagues seem to "test" all the sites beforehand. I doubt that this is the use of the possibilities of the net to its full, because pupils are much more inventive and likely to try out things (i.e. sites) we would not think apt or even find."

Consequences such as revoking students' computer privileges is one means of ensuring that students do not "abuse the time allowed in the lab":

I have one guy who is a comp. whiz and he is playing muds and moos in class and knows that I know less than he so he can hide what he is doing most of the time. It's frustrating but I will be revoking his computer privileges soon if he continues to do this. I guess that is my ultimate threat...they will lose comp. privileges and sit at the desks if they abuse the time allowed in the lab. Simple as that.

Teachers' beliefs about the need to control students' online access may relate to external pressures to guard against students accessing inappropriate sites:

I live in a very religious, small community. Our network goes through a proxy which hopefully filters out any undesirable sites. However our district is very worried about something going wrong and watches everything we do. Because of my strong desire to keep our access to the Internet I am very much like a dictator on what they are allowed to do.

Placing restrictions on how and where students "surf" while online as well as having a carefully controlled lesson represents another way to ensure that students' online activities are acceptable to the teacher:

Next time they will have an objective for each of the sites that they will either have to pass in or I will circulate and verify they have written the answers down. It still boils down to guided surfing, Elizabeth. It's all fine and good to think you're restricting them but they're only kids! Most of them don't have internet at home and they are desperate to explore their own sites and will sneak them in however they can! So..preplan..visit the site before the kids, make sure there is an objective for the lesson that can be evaluated at the end of the period and be vigilant.

In spite of the teaching and learning value of certain sites or technologies, the lack of control available to the teacher can discourage use of such technologies: "I have used chat lines to speak to friends in other countries; we have used live chat and it is a great technology. However, I would not use chat rooms on the Internet with students due to the lack of control that we would have over topics that could be addressed".

The issue of control in the second-language classroom, can also present itself in the form of monitoring students to ensure that they are working in and with the French language as opposed to with their mother tongue. Monitoring becomes even more essential on the Internet where so much material is available in English. The following teacher explains the approach she takes: "For elementary core French, I must preview sites in order to find visually-rich pages with child-level language; otherwise, kids will go to English sites and translate later". Monitoring students while they are online is important to some teachers in order to ensure that they make effective use of

instructional time as the following comment suggests: "I would not want my students to waste too much time while doing their research". Guiding students may be necessary given the nature of the Internet and the broad array of information to be found there: "Since there is a lot of info to be gotten on the 'net' i (sic) feel that a teacher would need to guide the students closely with assignments." Such guidance may result in fairly elaborate strategies to ensure that students are capable of working effectively. These strategies result in a highly controlled activity:

I make a point of using <http://www.altavista.com> as a search engine because of its ability to do rudimentary translation of sites and text. As well, I ensure that projects are simple enough and have lots of frame language (i.e., repetitive sentence stems or criteria blanks — find out xyz about n) so that students can weed through all that information to find key points. One strategy that I have used is to locate the sites(myself) that the students will be required to visit. Then I prepared my activities by requiring the students to find specific information. In this way, the students are not so overwhelmed by the amount of text that they are presented with. I make sure that the material is not too difficult by reading it through in advance of assigning a project that would require the students to use the Internet...

The issue of control and monitoring focuses more so on students themselves than do issues related to training or time-management. The beliefs in the next section centre specifically on students' interests, reactions to the technology and skills and how these may present challenges to teachers in the use of OLEs.

### **5.3.5 Students**

Challenges to Internet use faced by teachers can result from many factors. It is not surprising that teachers believe that students themselves should present some of the challenges since it is students who ultimately are the focus of all teaching and learning efforts. In this chapter's section on teachers' beliefs about the advantages of OLEs for learning, OLEs were described as an effective means of meeting the changing needs of students. Students' attitudes, fears, reactions, skill levels, interests and willingness to accept change are some of the factors teachers believe challenge their ability to

effectively promote learning in OLEs. As the following section will illustrate, not all teachers believe in the capacity of these environments to effectively meet students' needs.

Participants in this study focused on the issue of students' willingness or openness to change. One teacher concluded the following on this issue: "So with the technology, unless you are going to use it consistently (sic) the students don't want to change, or get used to a new idea". The following teacher's beliefs illustrate her experiences with integrating technology and her students' subsequent reactions with use of an approach that is not transmissionist in nature:

Student reaction: the top 10 % love my approach - lots of messages to the effect that "no one has ever asked me to tackle a topic on my own"and so forth. But then I wonder: the top 10% can survive quite well under *\*any\** approach. The middle 50% sort of humour me: oh - is that what she wants? Fine, I'll do it that way... Then there's the bottom ( 40% or so) who fiercely resist the approach. They want to know **THE TRUTH, THE ANSWER**. They think in black and white terms, even unto the fourth year of university. They want to be able to take notes, memorize rules, and pass the exam based on those criteria. Under the old regime, I used to get evaluations which rated me as excellent as a teacher, but not very open to student opinions. Now I get so-so as a teacher (that 10% excepted) but *\*very\** open to student opinion. In terms of promotion and tenure, that's not exactly a plus. Now why do I persist??

In this chapter's section on advantages of OLEs, beliefs in the sub-category of teaching and learning referred to how online learning entails a change in the role of the teacher requiring her to become more of a guide or facilitator for learning. The following excerpt explains how one teacher believes that, because her students are unaccustomed to the role of teacher as facilitator, they are frustrated by it:

I would like to be more of the facilitator but my students are not used to teachers being in that kind of a role. They prefer the "holder of all knowledge required to pass this class" role. Many students get frustrated with me when I answer their questions with another question. I try to get them to see the pathway they should take to find the answer rather than just giving them the answer. As a facilitator the students take charge of

what they learn and how they learn it.

The frustrations experienced by students unaccustomed to new approaches or methods are also experienced by teachers. One teacher explains how her beliefs about teaching and learning are not shared by all of her students:

At the beginning of this list someone (sorry I don't remember who) posted "Seymour Papert -in his book-"The Connected Family" argues that we are moving away from the 3r's and towards the 3 x's: explore, express, exchange." I wholeheartedly believe this. Now I just have to convince my students that they too need to change. The dilemma I find in my classroom is that some of my students are longing for this 3 x education while others will not let go of the 3 r's. I am working to help my students move forward and get frustrated.

Particular approaches to teaching such as exploratory learning may or may not suit the learning styles of certain learners. This may be particularly the case when learning a second language in OLEs. The following beliefs emphasize the complexity of learning styles of second-language learners combined with Internet use:

If students have not learned basic investigative skills needed to explore the Internet, they will not learn them through SLL... in fact, trying to master language skills while exploring the Internet in its cultural applications may be an exercise which frustrates those who learn deductively (left-brain). The inductive crowd revels in it, but I've found they're in the minority. There's a large group in-between, but for many of them, exploratory learning is something done under duress rather than out of an appreciation for the approach: the activity is required for the course, so they'll do it - for the grade, and with the minimum level of energy. They profit from it, of course, even with that attitude, but they don't value it or appreciate it.

Students' attitudes, fears and preferences also served as the focus for some of the beliefs of participants in this study. One belief about students' attitudes expressed by a teacher was that using the Internet in learning is "seen as [an] irrelevant 'free period' by students". In addition to this attitude, is the issue of students' particular fears and general likes and dislikes about using the Internet for learning. One teacher concluded that "Most students dislike reading screens and screens of information as much as they

do pages and pages in a book'. Teachers also focused on students' fears related to online learning by expressing beliefs such as: "I have found that for some students the anxiety level is raised just by mentioning that they will have to use a computer. Many are afraid they will break it" or "Students who have no access at home are sometimes intimidated by the technology & hesitant to use it".

Students' level of ability as it relates to Internet and computer use also formed a subject of discussion by some participants. One teacher expressed concerns about the lack of technical ability on the part of students: "And what about the students who are not computer geniuses and the technology actually becomes more of a hinderance (sic) than a help?". Students' linguistic ability level as it relates to learning online may also present problems according to some teachers. Some teachers expressed doubts regarding students' ability to function effectively in an online environment given the language level: "Most students cannot handle the vocabulary level". Their lack of ability to learn in online environments may be of particular concern when it comes to reading: "Reading articles from 'French sites' would be far above the ability level of my students". For younger students who are working online, the level of language of the sites might determine whether or not online learning would be of any value to their learning experience: "Elementary students have limited experience in reading French. They would need very simple activities". In relation to the issue of students' ability levels in the primary grades, one teacher expressed the belief that students should possess certain prerequisite skills for Internet use: "...students would need some degree of word recognition skills which may not be developed in the primary grades".

In relation to students' ability levels is the specific issue of research skills needed for learning in OLEs. The following teacher's belief compares research done using books versus that done online. This belief also raises epistemological issues related to concerns about students' ways of knowing:

The project has helped me to understand how the students typically do research. It is titillating, but less thorough than research from the bookshelf: they understand little because their approach is not to read, but to scan for words they understand, and to look for visuals. Books are

more static, and so can be held to the scrutiny of reading for meaning. Sites are more dynamic, and so invite exploration in a more erratic fashion. This latter technique is certainly the approach that most of my students find comfortable, and it is not without its attraction. It is difficult however for people who have learned otherwise to appreciate that the process has probably given rise to quite a different way of "knowing"...and leaves some of us older sceptics wondering how well things can be known which are simply scanned and not necessarily sounded. Perhaps the information base builds cumulatively - in any case, the language acquisition doesn't proceed at a formidable pace, ...

In relation to students' approaches to online research, teachers argued that: "students depend too much on this source of information and neglect other possible sources". They concluded that students tend to value online research over other forms: "Very quickly, it has become an automatic reaction to do research using the internet before going to other sources". A problem related to doing research noted by some teachers concerns the choice of language and the dilemma of trying to promote use of French when so many of the Internet sites are in English: "It seems that when my students are surfing for specific information, they hesitate to pursue French sites. They prefer to translate from English". Sometimes however, regardless of the language "...students find that often when searching for something specific, it's just not to be found".

The relative newness of the Internet in schools may explain why some teachers expressed the belief that "students know little about moving around in internet sites, where to click, what links are" or that "students have had difficulty finding appropriate sites". The following teacher noted that her students did not have the skills necessary to search effectively in French: "I tried to get them to search in French...but more often than not, their searches turned up thousands of websites, and they couldn't understand the site descriptions enough to decide if they should look at a certain site or not". It may be teachers' perception of the ability of students to search online that led the following teacher to conclude in general that "... students need guidance when doing projects that require them to use the Internet resources".

Another belief expressed by participants in this study relates to the overall effect

OLEs and computers have on students' general behaviour. Teaching in French can pose a challenge to teachers' ability to maintain students' interest and this ability can be further challenged by use of the computer: "As most are staring at the computer screen it is hard enough to get their attention in English, let alone do the 'song and dance' in French". Maintaining their attention becomes something of a competition between the "educational programs" and the computer programs: "I find the compulsive and obsessive manner of children at the computer scary. They also zoom on the games. It's difficult to get them back on the educational program (french) which are not very attractive in comparison". This attention span can shorten even further when the speed of connection is not fast: "attention span shortens with slower internet source". Although not specifically related to learning, the following teacher's beliefs express a disapproval of the effect of computers on students' behaviour: "Many students who have computers at home spend too much time 'playing computer'. They don't know how to socialize & how to play when placed in a situation that requires inventing a game or finding a way to occupy themselves".

Students' reactions to and attitudes and feelings about OLEs formed the subject of beliefs in this section. Some of the beliefs about these reactions, attitudes and feelings may be further highlighted in the next section which presents the sub-category of teachers' beliefs about OLEs.

### **5.3.6 Online Learning Environments**

This section focuses on beliefs which highlight the limitations and challenges related to use of OLEs for the teaching and learning of FSFL. Some of the participants in this study quickly dismissed the value of OLEs in the teaching of French. Others simply displayed little enthusiasm for their value. Teachers described the Internet as "merely a resource for research", "a replacement for encyclopedias", "a place to find information", "a free-for all", "just another teaching tool" which "needs to be more easily accessible and user friendly" or simply, "a resource to be used with other resources in the classroom and school." One teacher claimed that "other resources such as books

are more helpful” and another that “It needs to be interactive”. The portrayal of the Internet as nothing more than a “glorified encyclopedia” to support “web research” highlights the perception of the Internet as little more than books in a digital format: “Too much of what is on the Internet is simply the text in a more readily available format. Personally I can’t read too much on my computer screen without getting lost or giving up. A book on the Internet is great but I’d much rather curl up in a big chair with the book in my hand and a soft light”. If indeed the Internet represents nothing more than text in another format, what might be its value in the teaching and learning of French? From this teacher’s perspective, its value is overrated:

How many of the FL pages on the net are actually valuable new material that can best be used by s’s on line and how much of the FL material is basically books being transferred onto another medium? This seems to be happening a lot, especially on the EFL pages. If this is the case, then aren’t we wasting our time on the emperor’s new clothes?

In the following excerpt, a teacher compares books and earlier technologies such as cassettes with new technologies. Ease of access and of use are described as the advantages of a technology that offers information identical to that available in books but in a modified format:

Les équipements modernes n'apportent, dans leurs contenus, pas beaucoup plus que les livres et les cassettes de naguère. La forme et l'accès sont plus aisés. Au lieu de déplacer les 21 tomes de votre encyclopédie, vous manipulez un cédérom. A la place d'un manuel d'enseignement, de cassettes audio et de cassettes vidéo, vous trouvez le tout sur un autre cédérom qui vous permet, avantage suprême des liens hypertextes, de passer d'un texte à une vidéo ou à un enregistrement. Au lieu du prof, c'est la machine qui souligne les mots que vous avez mal écrits et qui vous ouvre directement la page du dictionnaire. Et plus loin que votre pauvre bibliothèque familiale, vous passez, avec Internet, les portes d'une immense bibliothèque mondiale. Vous avez tout, maintenant, et ici. Là est le progrès. Les informations sont identiques, la diffusion est modifiée.

Whereas the previous teacher believes that online information is identical to that which is available offline, another questioned the accuracy of this information: “I’m

leery of the accuracy of the information on the Internet". Others describe the information as "too advanced for students" or "not always pertinent to Junior High level". Teachers also hold beliefs in relation to the quantity of information found online. One teacher described how "At times you can experience a serious 'information overload'" and another complained that there is "too much info to access". The excess of information led one teacher to conclude: "It is quite easy to become overwhelmed with the available information". The type of information is also an issue. As one individual noted: "there is a lot of garbage on the net". The quality of the information led the following teacher to affirm her belief in the need for the Internet to change: "...mais c'est l'Internet aussi qui doit changer, car il y a encore peu d'informations fiables et encore moins de sérieux dans la divulgation du savoir (je pense notamment à toutes les erreurs / horreurs en matière d'orthographe, pour le français)". For some teachers of French specifically, there is the issue of the language of online information. Teachers observed that "much of the information is in English" that, "there are fewer French sites than English ones" and that "sites must be translated".

In terms of the issue of online information, others may focus less on its characteristics and more on what students and teachers do with this information: "The Internet provides information but it does not teach a student how to use this information". One teacher described how the challenge she faces lies in teaching students to critically evaluate the information they find online: "...j'ai trouve que la principale difficulté était de devoir prendre le temps d'éduquer les élèves à ne pas prendre pour argent comptant tout ce qu'ils trouvent sur l'Internet et à questionner leurs sources, autrement dit, à faire un travail de journaliste ou d'historien". Another teacher explains how providing students with information is only part of a much larger process:

Information can be shared on the Web, but knowledge can't. One must "make" one's own knowledge by processing the information presented, in other words, by making sense of it oneself. This is why giving students information by presenting them the answer is not giving them knowledge. Students must be coached to develop some higher-order thinking skills to process information and to create knowledge of their own.

Another characteristic of the information which may present problems for teachers is the fact that it is constantly increasing: "The capacity (sic) of computers doubles every 18 months. If you think about it  $2 \times 2$  is only 4 isn't too bad but when you start doubling 1024 it becomes rather unyielding. With the amount of Information available, increasing daily, we as teachers are finding ourselves overwhelmed". Not only is it increasing, but it is also changing:

Like many have said the hard part is staying on top of the technology. Last week I had found about 6 addresses for my students to find information about castles. The next day when we went into the Lab, one of the addresses had changed. This is a medium that will be ever changing. You cannot write a lesson plan and use it for the next 10 years. You'll be lucky if the information stays the same or in the same spot for over a month.

Accessing the information efficiently is important to teachers. One teacher noted: "I dislike the time one often wastes in trying to find certain information" and another "accessing small tidbits of information may take hours". The skill required to access information is another issue of importance for some teachers who may become overwhelmed when trying to conduct searches:

I am a reluctant participant of Internet use. From my personal experiences, I found it rather like being able to browse thousands of magazines at once. It can be overwhelming although interesting. I have sought & found some pertinent information for my courses in the past but I always fell (sic) that it has more to do with luck than with any particular skill or expertise.

Efforts to access information effectively can be hindered by problems with navigation and may explain why certain teachers tend to use the Internet less than they might otherwise: "If I could use the internet without having to search forever to find sites i (sic) think i (sic) would use it more." This teacher attributes her difficulty with searching to her own lack of patience: "I find it difficult to find what I am searching for but that is because I don't always have the patience to sit and refine my search. I expect instant answers." Refining one's search may be necessary to avoid difficulties such as this teacher has experienced: "I find it extremely difficult to narrow down the choices

supplied by the browser ex 50,000 articles concerning the topic being searched.” Sorting through the information and deciding what is useful or pertinent can also present challenges: “Often you have to wade through so much junk before you hit a relevant item. It’s so easy to become distracted bu (sic) other items of interest you may come across”.

Problems with navigation led one teacher to note that “the internet is very frustrating”. Others noted: “sometimes I get frustrated if i (sic) don’t find what I need” or “I get bogged down and find it frustrating to find nothing after many tries”. Links from one site to another may prove disorienting and thus frustrating for some: “I have found that many sites (in any type of research) send the searcher on useless tangents and thus much time is often wasted, and it may become very frustrating”. The amount of information supplied as a result of some searches presents challenges to this teacher: “I sometimes find the amount of sites you hit after a search can be very overwhelming and time consuming”. A similar challenge was expressed in this comment: “Sometimes it is very difficult to find a narrow enough route to the information needed”.

Another aspect of the information which presents challenges is its reading level and the “difficulty of the language”. One teacher commented that “The French is often above my students’ heads.” and another that “sites tend to be so difficult for weaker French students.” The following teacher questions the linguistic and pedagogical value of online material in French: “Since the Internet would require reading and some type of response to the reading, I would think that French Internet sites would not be suitable for my students’ curricular needs”. The reading level in particular and the content level in general may present concerns for some teachers especially in cases where children are young: “I am weary about finding sites that would be useful for primary core French”. Use of graphics in sites may provide a solution to problems with reading levels: “It would seem most beneficial if sites used graphics rather than text since the reading level of primary students is quite low in French and their ability to decode unknown/known words has not yet been developed”.

Problems encountered by teachers in their use of OLEs may lead some to

conclude that they are designed moreso for a particular type of student: "My perception of the Internet is that it's great for children who already know how to read well, classify information, and who have a purpose for use." In the excerpt that follows, a primary teacher describes her beliefs about the value of the Internet for young school children and explains how she adapts sites to suit her students' needs:

I am a third grade French immersion teacher. I have found that very few French sites are kid friendly, so I always make up some kind of activity sheet to accompany the web site. For example, there's a Canadian site that includes an interactive game called "Les Mineraux et les Metaux: Un tresor a couvrir." By clicking on everyday objects around the house, you get a whole list of the minerals and metals that are found in them. My kids can't read all those names of minerals - plus they don't know what they are - so I made it into a simple treasure hunt. First they have to predict where they would find gold and silver in their house, then they go to the web site and click on the pictures. Within the list of metals, they only have to recognize "or" and "argent." They fill out the activity sheet, we compare predictions and results and in the meantime we have reviewed lots of everyday vocabulary. There are hundreds of kid sites in English, but even if you're lucky to find them in French, they are written for francophone kids and the reading level is usually still quite difficult. So it does take me a lot more time to find appropriate sites and to write up an accompanying activity sheet.

The emphasis on reading is an issue from the perspective of the level of difficulty it may present for some students. However, it is also an issue for this teacher who argues that the Internet's value for learning does not go beyond its ability to provide reading selections:

But dealing specifically with the Internet. Are we just using it as another source of realia? An authentic (sic) reading selection that the student is to glean information from? I believe there is a greater potential for interaction, however I have not been able to find an educational site that goes beyond the grammar exercises. The computer people don't know how to make something educational and the education people don't know how to computerize (Is that a word?) the education.

The emphasis on reading presents a further concern as explained by this teacher of Core French: "The Internet would have no real value to the teaching of core French

since it would not facilitate learning in speaking and listening”. The Internet’s capacity to develop oral skills, particularly that of listening, is described by the following teacher as being completely lacking on the Internet: “A major problem - at least for my pupils - is listening comprehension. This important aspect is unfortunately (sic) completely neglected in the net - at least we have no sound cards in our machines, and I have no idea whether French spoken language is available at all”. The belief that the Internet primarily favours text-based learning is an important one given the need to develop listening and speaking skills in language learning: “Oral skills take a back seat to reading. Maybe some day, speaking and listening will be as integral to web sites as text and graphics. When that day comes, the Internet will truly be the language learner’s dream”.

The pedagogical value of OLEs for learning second languages may be questioned, not only because of the emphasis on reading, but because of perceived limitations of the technology itself:

Mais les équipements ne peuvent parvenir à comprendre l’interlangue d’un apprenant, à comprendre ses erreurs, à le suivre dans son cheminement cognitif, à lui proposer une réponse adaptée à son apprentissage individuel. Les équipements n’apportent pas beaucoup non plus aux principes fondateurs d’approches telles que la suggestopédie, la “total physical response”, ou “l’approche naturelle”. J’aurais donc tendance à considérer les machines d’aujourd’hui au même titre que les machines d’hier.

The belief described in the following excerpt also compares today’s machines with those of the past. In this case, the emphasis is on the technology’s didactic control:

Ce qui me paraît le plus gênant est que l’on retrouve parfois dans la machine une attitude relevant de l’enseignement traditionnel: la machine détentrice d’un certain savoir comme le maître autrefois, elle ne propose qu’une vérité que l’apprenant ne peut contester, elle présente souvent une seule approche cognitive de la langue, mais surtout, elle ne permet pas à l’apprenant de s’exprimer. Le problème n’est pas nouveau: l’autodidaxie pratiquée avec un livre et des bandes magnétiques rencontrait il y a 30 ans les mêmes difficultés. Les problèmes des machines d’aujourd’hui sont les mêmes que ceux des machines d’hier. Les équipements d’aujourd’hui ont beaucoup de limites semblables aux équipements d’hier.

In the previous excerpt, the teacher described the technology's tendency to dominate the learning process. In this excerpt, another individual argues that it is the teacher who decides on the approach taken by the machine and it is the teacher who can easily use the technology to simply digitize existing classroom practices:

...-la traduction: pas de problème, allez lire les infos dans [www.unjournal.fr](http://www.unjournal.fr) et traduisez le premier article pour demain; - de la grammaire: pas de problème, allez chercher le texte dans [www.texteaupresent.fr](http://www.texteaupresent.fr) et écrivez-le au passé; ou allez chercher la recette du "gratin de courgettes" dans [www.lesbonnesrecettesdelamèreMarie.fr](http://www.lesbonnesrecettesdelamèreMarie.fr) et donnez-moi les infinitifs de tous les verbes; - du vocabulaire: pas de problème, allez dans [www.lanature.fr](http://www.lanature.fr) et faites-moi la liste de tous les animaux et de toutes les plantes présents sur le site. - de la compréhension orale (est-ce que cela entre dans le "traditionnel" ?): allez écouter les infos sur [www.laradio.fr](http://www.laradio.fr) et complétez la transcription suivante... (toutes ces URL sont fictives, bien sûr,... enfin, je pense !) En un mot, on remplace le document papier ou la cassette par un document informatique.

Added to these beliefs about the limitations of the new online technologies, are others which question the value of OLEs for learning. As one teacher explained: "Yes, it does look great to have all these means as helpers in the classroom - but do they really bring that much gain to our teaching output?? As you can see I am rather sceptical, I am afraid that the net is an underestimated time eater and an overrated motivator". Another commented that she disliked "the commercial aspect-the gimmicks for selling and all of the advertising" while another complained that "The Internet does not develop interaction between students. Students in front of a computer screen look like automatons".

In a previous section of this chapter, one teacher described her positive teaching experience with this technology. In the excerpt that follows, another teacher provides a different perspective on chat rooms and their use in the second-language classroom: "I did go to a few Quebec Chat rooms with my gr 12's and they had a ball! They spoke to actual Quebecers and were very conscientious (sic) about how they typed words, and phrased their dialogue. However, the content was superficial and it really served little

purpose except to give me extra grey hair!” Another online tool which can be used for language learning is the dictionary. The following teacher’s experience and her beliefs about these dictionaries suggest that there is little value in the tool for language learning: “I have tried any number of on-line dictionaries. Even fairly common words (e.g., blackbird, careful, fireplace) are often not included (sic) in the data base, and forget anything out of the ordinary. As for babelfish and others like it, it is a literal translation tool that serves only to amuse, not to educate”.

### **5.3.7 Summary**

The challenges described by teachers are numerous and relate to many different aspects of the learning process. The following table provides a summary of these different beliefs in the same way that the summary was presented of the advantages to use of OLEs.

<b>Time &amp; the curriculum</b>	<b>Training, support &amp; vision</b>	<b>Access &amp; equipment</b>	<b>Control &amp; monitoring</b>	<b>Students</b>	<b>OLEs</b>
Internet is time-consuming & a time waster	Teacher training programs did not include Internet training	No access at home & time-consuming to prepare lessons after school	No control over vocabulary or complexity of grammar	Students don't want to change or get used to a new idea	Internet is merely a resource for research
Internet use requires advance preparation but preparation time is limited or unavailable	Technology in schools is outdated but teachers are trained on new technology	Can't use one's own personal account for Internet projects	Some students are adept at using Internet & go into areas where they should not	Some students resist a non-traditional type of teaching approach	Need to find time to educate students to not take for granted online info.
No time to get on Internet	Unwilling to do training outside of work hours	Internet access is slow and difficult in certain regions	Some students access inappropriate sites	Students see Internet as free period	Internet is a free for all
The Internet seems like something extra to be taught	Need instruction on project-based learning	All labs are busy & computer lab is too widely used	Some students are computer-savvy & can bypass filters	Most students cannot handle the vocabulary level	Internet needs to be more interactive
Surfing aimlessly is time-consuming	Teachers feel intimidated by lack of knowledge	Computers are outdated	Difficult to keep students on track	Students know little about moving around in sites	Internet is just another teaching tool

<b>Time &amp; the curriculum</b>	<b>Training, support &amp; vision</b>	<b>Access &amp; equipment</b>	<b>Control &amp; monitoring</b>	<b>Students</b>	<b>OLEs</b>
Too many demands on teacher to find time to devote to Internet use	Need skills to fix things, to find information, to use it efficiently	To conduct an Internet project, a computer lab and set time is needed	Difficult to let students wander & put up boundaries & supervise	Students' attention span shortens with a slower Internet connection	Internet needs to be more accessible & user friendly
Time is consumed by translating sites and posting student work	Teachers' mentalities cannot be changed quickly	Phone lines may be antiquated and long distance call is a disadvantage	Adult level of most sites requires guidelines and consequences	Compulsive & obsessive manner of children at the computer is scary	Other resources such as books are more helpful
Objectives must be covered by June but projects take a long time to complete	Teachers are helpless when attacking new things such as Internet	Would prefer students to work on individual computers	More important to teach students potential & dangers of Internet	For students who are not computer geniuses, technology is a hindrance	Can easily be used to simply digitize traditional practices
Time is consumed by waiting for information to be downloaded	Rapid pace of change in technology makes teacher learning outdated quickly	Working independently on the computer is not an option for many younger children	Can make sure site is not too difficult by reading through it in advance of student use	Students spend too much time playing computer & therefore don't know how to play or socialize	Very few French sites are kid friendly & are written for Francophones

<b>Time &amp; the curriculum</b>	<b>Training, support &amp; vision</b>	<b>Access &amp; equipment</b>	<b>Control &amp; monitoring</b>	<b>Students</b>	<b>OLEs</b>
Preparation time is increased as technology becomes more sophisticated	Do not feel comfortable enough or have skills to use the Internet with students	Using Internet is difficult when only access to computers is in resource centre	Teachers must guide students to sites they have chosen and continue to monitor	For some students, exploratory learning is something done under duress & not because they appreciate it	Too much of what is on Internet is simply text in more available format
No time available to become comfortable using the technology	Need inservice on how to integrate it into the curriculum	Not enough computers in working order	We do not have the resources to check on every computer	Students depend too much on online sources of information	Leery of accuracy of online information
Use of Internet with young children is not using instructional time wisely	Lack of information available on suitable online activities	Need one computer per child	Students have online access at home where teachers have no control	Reading articles from French sites would be above the ability level of some students	The net is an underestimated time eater and an overrated motivator
Planning is necessary to avoid eating up valuable time	If I cannot do it myself I cannot do it with students	With only 4 computers for 25 students, it's a waste of time trying to access Internet	Preplanning & previewing sites avoids overwhelming students with text	Students without home access are intimidated by technology & are hesitant to use it	Internet is a glorified encyclopedia or replacement for encyclopedias

<b>Time &amp; the curriculum</b>	<b>Training, support &amp; vision</b>	<b>Access &amp; equipment</b>	<b>Control &amp; monitoring</b>	<b>Students</b>	<b>OLEs</b>
Use of Internet activity must be done at expense of something else	Limited troubleshooting & computer literacy discourages use	All sorts of things go wrong with computers	Previewing sites & preplanning is a must on the Internet	Some students are not used to teacher being in the role of a facilitator	There is too much information to access
Finding appropriate sites takes forever	Want to know which sites fit with prescribed curriculum	Computer lab is practically full with computer science courses -	Students can't stay on-task if allowed to randomly browse	Students' approach to online research leads to a different way of knowing	Information is too advanced for students
Lack of time-management skills & motivation on part of teachers	More & more equipment added each year but no added time to learn how to use it	The network is a problem because it crashes	Students can lose computer privileges & sit at their desk if they abuse time in lab	Students cannot understand site descriptions as presented by search engines	There are fewer French sites than English ones & sites must be translated
Lack of instructional time to complete prescribed curriculum	Want to know what sites to access, which are appropriate & what objectives are of using sites	Using Internet is difficult without computer lab in the elementary school	Students will surf if there is downtime so period must be well planned	Elementary students have limited experience reading French & need simple activities	Modern equipment offers same as books & cassettes in modified format

<b>Time &amp; the curriculum</b>	<b>Training, support &amp; vision</b>	<b>Access &amp; equipment</b>	<b>Control &amp; monitoring</b>	<b>Students</b>	<b>OLEs</b>
Extensive time is required to plan effective use of Internet	Preparation programs did not include training in French computer terminology	Language classes are low on priority pole - business, math & tech ed are first	Keeping students on task while online in lab requires a lot of preparation	Students find that when searching for something, it is not to be found	Content of chat conversation is superficial
No free time at school & family & personal life take up time at home	Need a reason to go online-not aware of its value in improving learning	Could have a lesson planned & Internet is down for whole period	Preplanning and an objective that can be evaluated are needed for Internet use	Use of OLEs requires word recognition skills which may not be developed in the primary grades	Internet must change- little trustworthy information & too many spelling mistakes
May not be relevant to curriculum	Trainers know technology but not new pedagogies	Frustrating for students when computer freezes	Chat rooms don't allow control of topics	Students need guidance with online searching	There is a lot of garbage on the net
Too much other curriculum to cover-traditional curriculum takes precedence	Don't know how to incorporate it into teaching Difficulty coming up with ideas	We have to accept that students will gain access from at home or in the library	Students are inventive & will try things that teacher would likely not find	Some students prefer to surf for information in English & then to translate	It is easy to become overwhelmed by the amount of information

<b>Time &amp; the curriculum</b>	<b>Training, support &amp; vision</b>	<b>Access &amp; equipment</b>	<b>Control &amp; monitoring</b>	<b>Students</b>	<b>OLEs</b>
Not interested in computers & technology therefore not willing to devote time to it	Too much emphasis in training on technical and not pedagogical aspects	Half the time, computers are not up & running - one hassle after another	Must preview sites to find child-level language or students will translate English sites	Need to convince students that they need to change - some students still long for a traditional approach	The medium is always changing therefore it is hard to stay on top of the technology
Do not see benefit coming from it	Training must first emphasize technical aspects & secondly pedagogical aspects	Unreliability of equipment is difficult because it is a factor out of teacher's control	There is a lot of information on the net therefore teacher needs to guide students closely with assignments	Hard to get students' attention on educational programs which are not attractive in comparison to computer games	Reading level is problem particularly for those in primary - better sites use graphics rather than text
Need to avoid jumping on computer bandwagon	Lack of support from administrators	Connections are slow and lines are overloaded	Would not have students do a general search without guidance	Use of computer makes some students anxious.	A replacement for encyclopedias

<b>Time &amp; the curriculum</b>	<b>Training, support &amp; vision</b>	<b>Access &amp; equipment</b>	<b>Control &amp; monitoring</b>	<b>Students</b>	<b>OLEs</b>
Curriculum activities & lessons not conducive to Internet use	Internet is like a huge resource centre & no time is available find anything	You are at the mercy of the server & the time of the day	Most difficult part is control - wonderful to let students discover but how do you grade that?	If students have not learned basic investigative skills needed to explore Internet, they will not learn them through SLL	Internet use is like trying to browse thousands of magazines at once
No need to use Internet because it is important to vary teaching methods	A lot of teachers & parents are comfortable with status quo	High costs means Internet use is not worth it for most teachers	Teachers have duty to ensure that students don't access inappropriate sites	As students are staring into computer it is hard to get their attention in French	Information can be shared online but knowledge cannot.
Need to ensure that students are benefitting from the technology	Too many changes necessary & challenges to use Internet as primary teaching resource	Limiting factor is computer lab time & reliability of equipment		Students' way of doing online research is less thorough than research done from books	Information is not always pertinent to the junior high level

<b>Time &amp; the curriculum</b>	<b>Training, support &amp; vision</b>	<b>Access &amp; equipment</b>	<b>Control &amp; monitoring</b>	<b>Students</b>	<b>OLEs</b>
Extra demands on teacher to provide linguistic support needed for navigation	It's a myth that all training & knowledge problems will be solved thanks to Internet	Morning classes bring up online information faster than afternoon classes		Students' approach to online research is to scan for words they know & look for visuals and not to read	Searching effectively & efficiently is difficult- sites send searcher on useless tangents
Takes time to keep up with technological changes	Inservice in Internet & technology is not provided	It is often up to teacher to find sites & resources, download them to paper, develop class activities, save student products & then upload them		Students' automatic reaction is to research online before going to other sources	The Internet is just another source of realia
Time is used screening resources to ensure communication is in French	Technology can sometimes be difficult to assimilate, requires repetition & practice by teachers	Webwhacking programs can be used to simulate navigation of a site		Trying to master language skills while exploring the Internet may frustrate students who learn deductively	Computer people can't make something educational & educators don't know how to computerize material

Time & the curriculum	Training, support & vision	Access & equipment	Control & monitoring	Students	OLEs
Teaching French and using Internet is complicated	Internet technologies non-existent when most teachers were trained				Often you have to wade through a lot of junk to find information
Students waste time by browsing the web in other areas	Without staff development, teachers will continue to teach in old ways				Online dictionaries serve more to amuse than to educate
The time needed to plan effective Internet lesson is daunting	Little support from colleagues				The Internet is a resource to be used with other resources
Projects can eat up valuable time if there is not a commitment to plan, find sites & assess effectiveness	Tend to fall back on way teacher learned best which did not include Internet				Internet provides information but does not teach students how to use it

<b>Time &amp; the curriculum</b>	<b>Training, support &amp; vision</b>	<b>Access &amp; equipment</b>	<b>Control &amp; monitoring</b>	<b>Students</b>	<b>OLEs</b>
As long as teachers play by antiquated rules of educational system, new technologies will always remain new	Technological illusion results from seeing technology as an end in itself & de-emphasizing pedagogical needs				The Internet has no value for teaching of Core French as it does not facilitate learning in speaking & listening
Need appropriate sites to ensure objectives are achieved & to make maximum use of time	Other teachers do not share enthusiasm for use of OLEs- they think technology is a passing fad				Internet is great for children who know how to read well, classify info. & have a purpose for its use
Educational system works against valuable but time-eating projects	Vision is too technological -not enough emphasis on new uses & new paradigms				At times, you can experience a serious information overload

<b>Time &amp; the curriculum</b>	<b>Training, support &amp; vision</b>	<b>Access &amp; equipment</b>	<b>Control &amp; monitoring</b>	<b>Students</b>	<b>OLEs</b>
Would like to use Internet but don't have time	Many adults are petrified of technology				This is a medium that is ever changing
Time-management is number one skill to master	Focus of teacher development should be on tapping into excitement without a lot of pressure				Today's machines have computer as master attitude & do not adapt to individual needs of students
Teachers need commitment to look outside the box	Need training to transform what is on Internet into a didactic tool or material				Machines present only one cognitive approach to the language
The Internet should not be used as a sole resource	Don't know how to use technology on day-to-day basis				The machine does not allow students to express themselves
Primary F.I. program is already 'surchargé'	Need follow-up to training on on-going basis				The hard part is staying on top of the technology

<b>Time &amp; the curriculum</b>	<b>Training, support &amp; vision</b>	<b>Access &amp; equipment</b>	<b>Control &amp; monitoring</b>	<b>Students</b>	<b>OLEs</b>
The Internet needs to be used with specific goals and frequent evaluation	A minimal mastery of the tool is necessary before consideration of pedagogical questions				Students must be coached to develop higher-order thinking skills to process information
	Teachers are stressed & tired and just want to get through their curricula				Finding online information has more to do with luck than with skill or expertise
	Teachers have not apprehended the new pedagogical paradigms				Sites tend to be difficult for weaker French students
	There is a lack of information available about suitable online activities or uses				The number of sites you hit after a search can be overwhelming and time-consuming

Time & the curriculum	Training, support & vision	Access & equipment	Control & monitoring	Students	OLEs
	More teachers would be apt to use technology with more support & training				It is easy to become distracted while searching online
	Colleagues are convinced that teacher must be only source of input of knowledge				When speaking & listening are integral parts, the Internet will be a language learner's dream
	There is distrust of students' ability to learn on their own -they must be led to knowledge				Machines cannot understand students' errors, follow student's cognitive path or propose an individualized response

Time & the curriculum	Training, support & vision	Access & equipment	Control & monitoring	Students	OLEs
	Each time a new technology is introduced in the language class, the same messianic discourses come back				
	All that is being done at present is through individual's teacher's initiative				

Table 5.3 Summary of beliefs related to the challenges to use of OLEs

## **5.4 Conclusion**

The aim of this study is to profile the beliefs of teachers of FSFL about teaching and learning in online learning environments. This chapter has presented these beliefs following a preliminary analysis and coding. What the analysis revealed is that teachers' beliefs are heterogeneous, they are spread over a wide range and cover a broad selection of topics and aspects of school life. Two categories and twelve sub-categories grouped approximately 400 beliefs. The categories derived from the coding are not definitive. They could have been organized somewhat differently and some of the beliefs might have been grouped in multiple categories or in other categories. However, what is important in the grouping of the beliefs is that some commonalities could be identified and that boundaries could be established to allow for inclusion of all the data.

Some of these beliefs reflect an enthusiasm for use of OLEs and highlight their advantages for teaching and learning FSFL. Others focus on the many challenges to teaching and learning with OLEs. The beliefs covered many different aspects of the teaching world such as teachers, students, technology, the curriculum, time, textbooks, information, teaching approaches, communication, training, equipment, motivation, control and roles to mention but some of the beliefs uncovered by this study. In relation to beliefs about the teaching of FSFL, teachers referred to many aspects such as listening, speaking, reading, writing and culture. In terms of the tools of OLEs, teachers referred to chat rooms, e-mail, the World Wide Web, MOOs, and discussion lists. In relation to beliefs about the types of activities in which students can engage in online, there were references to virtual visits, web-publishing, e-mail correspondence, online research, and collaborative projects. In terms of approaches, teachers made reference to project-based learning, task-based learning, Communicative Language Teaching and resource-based learning.

There were some aspects related to teaching and learning which were not represented by teachers' beliefs. While there were references to administrators and many to students and to teachers, there were few if any beliefs related to parents. Beliefs about testing and evaluation were few although there were many beliefs related to covering the

curriculum. While there was minimal reference in the beliefs to the use of OLEs in the teaching of content areas like history, there was no reference to use of these environments for the teaching of other subject areas in French such as science or math even though these subjects figure as part of the French-Immersion curriculum in Canada.

There were other aspects of the beliefs which were not addressed by this chapter. The profile revealed that there were many differences and even contradiction and conflicts evident in the beliefs. The profile also revealed that while some teachers are enthusiastic about use of OLEs for the teaching of FSFL, others are more cautious and some are evidently opposed to their use. How can we explain these differences? How can we explain the contradictions and the conflicts? The purpose of the next chapter is to interpret the beliefs, to attribute a larger meaning in terms of educational theories and paradigms. Chapter 6 takes the analysis one step further in order to provide an interpretation of the beliefs in each category. The analysis focuses on patterns and similarities in types of beliefs in order to understand what the beliefs reflect in terms of the approaches, philosophies and trends which have characterized language teaching during the past 100 years.

## **Chapter 6**

### **Brave New Worlds, Strange New Worlds: Interpretation of the Findings**

“I do believe that no one stands to gain more from les nouvelles technologies than foreign language classrooms. For years we have lamented the fact that our students have no concrete application of their language, and here we have, literally at our finger tips, a whole world of Francophone kids, waiting for a chance to communicate with us. It is indeed, exciting.”

“Internet, c'est d'un seul coup pour des profs étrangers souvent beaucoup plus isolés et limités dans leurs pratiques de classe qu'on ne croit, quelque chose d'infiniment ouvert et qui donne le vertige.”

#### **6.1 Introduction**

The two excerpts above present contrasting perspectives on the value of OLEs in the teaching of FSFL. These beliefs, as well as the contrast between them, are indicative of the diverse range of beliefs found in the context of this study. Some beliefs portray OLEs as brave new worlds that offer opportunities and potential, and that promise change. Other beliefs portray OLEs as strange new worlds that are foreign, frustrating, confusing and impenetrable. In the previous chapter, teachers' beliefs were presented and described in two categories and in accompanying sub-categories. The emphasis in the chapter was on describing and on summarizing the beliefs. The presentation of the findings provided a response to the question: What are some of teachers' beliefs about teaching and learning FSFL in OLEs? This chapter moves beyond the presentation and description of the beliefs and provides an interpretation based on further analysis of the data. The interpretation involves taking each sub-category of beliefs identified in Chapter 5 and analyzing it in relation to the historical and conceptual framework outlined in Chapter 2 of this study as well as in relation to this study's review of the literature. The interpretation of the findings presented in this chapter explores research question 2: What do these beliefs reflect in terms of the evolution of approaches and use of technology in

the teaching of FSFL?

The historical and conceptual framework outlined in Chapter 2 of this study provided a summary of the evolution of approaches and of technology use in second- and foreign- language teaching throughout the 20<sup>th</sup> century. In the context of describing this evolution, a vision was provided of language learning in the 21<sup>st</sup> century. The most recent phase of technology integration, Technology Enhanced Language Learning (TELL) using OLEs was outlined and it was shown how OLEs form an integral part of this vision of language learning for the 21<sup>st</sup> century. However, it was also shown that use of OLEs for teaching and learning of FSFL does not in itself guarantee the realization of the vision for teaching and learning French in the 21<sup>st</sup> century. Garrett (1991) reminds us that the computer does not constitute a method in itself rather it is a medium or an environment in which a wide variety of methods, approaches or pedagogical philosophies may be implemented. Therefore, we cannot assume that use of OLEs will automatically lead to the transformation of present instructional paradigms, rather such use may simply allow teachers to digitize or to improve on existing practices.

The purpose of this chapter is to look beyond the presentation of the beliefs to understand what the beliefs represent in terms of the new landscapes for learning in the 21<sup>st</sup> century. Where do these beliefs lie in the evolution of approaches throughout the last century? Do the beliefs reflect aspects of the vision for learning FSFL in the 21<sup>st</sup> century as outlined in Chapter 2? What type of approach do they reflect? Do they represent an attempt to take full advantage of the potential of OLEs? This chapter seeks to provide possible answers to these questions.

## **6.2 Beliefs Related to the Advantages to Use of OLEs**

The coding of the data resulted in the creation of two broad categories one of which was beliefs related to advantages of using OLEs for teaching and learning FSFL. These beliefs reflected a positive attitude towards use of OLEs as well as an overall enthusiasm and acceptance of the new technologies and tools. As the following section will illustrate, many of these beliefs reflect aspects of the vision of teaching FSFL in the 21<sup>st</sup> century as

outlined in Chapter 2. At the same time, what this section will show is that while beliefs grouped in this category may be open to use of OLEs, they do not necessarily reflect an evolution in beliefs.

### **6.2.1 Resources and Information**

The issue of supplemental curriculum resources in the teaching of French is a significant one. Access to resources to supplement an English program would be relatively easy in any predominantly English-speaking area. However, such is not the case with French materials in non French-speaking areas. Any teacher living outside of French-speaking areas may not have immediate access to the same variety of resources as might a teacher in an English program. It is not surprising therefore that participants in this study displayed great enthusiasm for the capacity of OLEs to provide them access to resources and materials. This enthusiasm was particularly apparent for participants teaching in small, remote schools where OLEs now provide them access to resources that they could otherwise never have.

Participants also expressed a belief in the value of OLEs to facilitate a resource-based learning approach espoused and promoted by “educational leaders”. “Resource-based learning involves active participation with multiple resources (books, journals, newspapers, multi-media, Web, community, people) where students are motivated to learn about a topic by trying to find information on it in as many ways and places as possible” (Lavery, 1997, p.1). Resource-based second- or foreign- language learning allows for a focus on content as opposed to a focus on language. It supports a language-acquisition approach whereby the language is acquired in the same way that first-language learners acquire their own language. Teachers’ reliance on this approach reflects a de-emphasis of explicit teaching of language in favour of student-centered investigation based on use of resources in the target language. Beliefs in this sub-category suggest that OLEs are facilitating use of this approach by providing teachers and students with access to resources that they would otherwise not have.

The belief expressed in the study that OLEs present an advantage for learning by

providing vast quantities of information that could be used to do research suggests recognition of the importance of Puskas and Otto's (1997) notion of "input and intake". This notion encourages less of a focus on the traditional production of sentences common with CALL and more on comprehensible input necessary for language acquisition to occur. Some teachers also expressed the belief that there is a large quantity of resources available online in French and that, where the resources are available in English, these can be translated online. This belief suggests that teachers perceive OLEs as being specifically valuable for the teaching of French and suggests a willingness to exploit the possibilities that such environments have to offer. The belief that adequate resources are now available and that online resources fill a void that previously existed suggests that teachers perceive an improvement in and are optimistic about the potential of OLEs to evolve their practices.

Not only did teachers express an enthusiasm about the quantity of materials that are now available, they appreciated that these materials were authentic. Beliefs in the value of authentic materials for use in the teaching of FSFL form an important part of the vision for language learning in the 21<sup>st</sup> century. Puskas and Otto's (1997) description of the "new era" of language learning is characterized by use of authentic materials: "Students should be prepared to handle the complex reality of a foreign language and culture .... To do this they must confront authentic documents, sounds images, and ideas from the foreign culture" (p. 7). Smith (1997) described use of such materials as providing a "bridge between the classroom and the world". Thus, beliefs about the value of OLEs to provide access to authentic materials provide support for the view of OLEs as a means to provide access to or to generate reality. Beliefs in the value of authentic materials also reflect support for communicative language activities. Richards and Rodgers' (1986) characteristics of Communicative Language Teaching emphasize the importance of use of authentic materials. Constructivist learning also favours use of materials that are authentic and that therefore represent the complexity of the real-world. The belief in the value of these materials to make the language less "foreign" points to an appreciation for the value of meaningful content and learning so important in the vision for learning in the 21<sup>st</sup> century. Emphasis on the ability of OLEs to provide students with access to living data as opposed

to the “outdated” materials and information available in libraries and books reflects the principle that learners need to be connected to the ‘real world’. In other beliefs uncovered in this study, the immediate nature of online information was linked to the need for cross-disciplinary teaching which is also an important element in constructivist learning.

Beliefs grouped in this sub-category also showed an appreciation for the multi-media capacity of OLEs to appeal to a wide range of students’ needs and interests. Such beliefs reflect an interest in providing more student-centered learning. The emphasis on having access to greater variety and more diversity in information formats and content reflect the importance of multiple modes, representations and perspectives on the content evident in constructivist learning. These beliefs reflect Williams and Burden’s (1997) propositions for constructivist language learning which highlight the importance of taking into account the fact that learners learn in ways that are meaningful. This proposition implies that teachers will need to provide a variety of language learning activities that allow for different, individual learning styles, preferences and personalities. These beliefs also reflect Pusak and Otto’s (1997) description of a new era of language learning characterized by student-centered learning and accommodation of different learner styles and strategies. Teachers in this study also highlighted the capacity of multimedia to provide information in other formats such as with sound or images thus supporting Hanson-Smith’s (1997) assertion that multimedia provides support for different learning styles of language learners by deploying different neuro-systems in learning through its reliance on sound, colour, animation, etc. Similar beliefs were expressed by teachers in a study by Honey and Moeller (1990) of teachers’ thinking related to how and why they use or do not use technology in their teaching. The high-tech teachers expressed a belief in the need for different learning styles and learning requirements for students.

Some teachers also expressed the belief that the information provided by the computer is superior to that which is available in other formats such as in a book, encyclopedia or a library. This belief reflects a questioning of current practices in that it rejects the assumptions that the printed word is the source of all knowledge and that the teachers’ exegesis is required by students in order to learn effectively. Beliefs in the

superiority of online resources support Pusak and Otto's (1997) argument that extensive use of, reliance on and appreciation for multimedia material has the capacity to challenge the "dynamics of the textbook/classroom model of instruction" (p.15). Beliefs that express an appreciation for the resources and information available online also reflect an interest in extending control from the teacher to the student. Smith (1997) argues that the value of such materials resides in the fact that students interact directly with these materials rather than with the teacher's interpretation of them. Students are interacting, not with prepackaged content or didactically prepared materials, but with documents which they access directly. Allowing students greater control and autonomy in the learning process reflects an essential principle in constructivist learning and in the vision for learning in the 21<sup>st</sup> century.

Many of these beliefs regarding online resources and information reflect constructivist principles. However, beliefs in the importance of authentic materials also reflect the principles of Communicative Language Teaching. Thus, an individual can express the belief that OLEs add value to learning through the provision of authentic resources and information while still being unaware of how these materials can be used to support learner control, knowledge construction and knowledge sharing since these principles are characteristic of constructivism but not of CLT. Beliefs reported in this category of resources and information reflect an understanding of CLT but not necessarily of constructivism or of the vision of learning espoused by this study. Ultimately, whether the belief in the value of online resources makes a difference to the learning situation depends on what the teacher intends that students do with the information and resources. Does the way in which online resources and information are used reflect an understanding of the potential of OLEs to support knowledge construction and collaboration? For example, resources and information can be exploited by teachers and students simply as reading selections. When used for this purpose, the potential of OLEs is reduced to that of little more than a repository of content. Retrieval of information in itself is not a high-order skill. It is how the information is used and processed by students in the context of learning activities and projects that may encourage the development of higher-order

thinking skills.

In relation to beliefs about the capacity of OLEs to provide resources and information we need to ask further questions. Do teachers see the access to and availability of resources simply as a solution to a problem of lack of resources, or lack of ready-made content, or do they see it as a means of doing more projects, more resource-based learning and more learning that appeals to students' interests? Are students simply using the computer to turn pages of a more varied and voluminous textbook? What control do students have over what they do with the information once it is retrieved? Do they share this information with others in order to collaborate on projects? Do students use this knowledge as a means to construct new knowledge?

### **6.2.2 Communication and Collaboration**

The importance of communication in the second language classroom is primordial. As Littlewood (1981) explains: "...foreign language teaching must be concerned with reality: with the reality of communication as it takes place outside of the classroom and with the reality of learners as they exist outside and inside of the classroom" (p. 95). The early emphasis on form in language teaching was gradually replaced beginning in the early seventies with a greater emphasis on function. Real-world language use, meaningful communicative interaction, purposive behaviour, negotiation of social meaning, development of fluency as opposed to accuracy, opportunities for students to express their own individuality: each of these became important goals for Communicative Language Teaching.

In spite of the importance of providing avenues for communication, many language classes have, until now, not had such opportunities for meaningful communication. Opportunities for meaningful and authentic communication with Francophones are limited in cases where students are not exposed to Francophone populations. However, what some beliefs in this study indicate is that OLEs are now making easier the realization of the goals of Communicative Language Teaching by making available sophisticated electronic communicative tools. It is perhaps for this

reason, that one of the beliefs expressed in this study is that “no one stands to gain more from les nouvelles technologies than foreign language classrooms”. This belief is supported by the claims of Warschauer (1997) who argued in a similar vein that computer-mediated communication “is probably the single computer application to date with the greatest impact on language teaching” (p.5). This impact becomes even more significant when one considers the beliefs expressed by teachers in this study who live in remote and/or isolated areas. OLEs take on a special significance and value for these individuals. Online communication tools provide them with “meaningful opportunities to use their second language”- opportunities which might not be available to them otherwise.

The emphasis on communication in second-language pedagogy, particularly in CLT, may explain why some of the beliefs in this subcategory described online communication as being the prime advantage of OLEs, something that “cannot be duplicated in the classroom”. For primary students, “good books” or a “CD-ROM” are described as “superior” to anything the Internet can provide with the exception of opportunities to communicate. These beliefs reflect one of Underwood’s (1984) principles for Communicative CALL which argues that effective use of the computer for communication “does not try to do anything that a book could do just as well”.

Beliefs emphasizing the importance of communication are important in CLT. However, they also reflect more recent preoccupations and principles such as those of Williams and Burden (1997) whose social-interactionist framework maintains that we learn a language through meaningful interaction with others. The emphasis in the findings on “conversation”, “correspondence”, “interaction”, “exchanging” and “sharing” also reflect Honebein’s (1996) argument that constructivist learning involves embedding learning in social experience. The elements of social experience and interaction are also highlighted by teachers’ beliefs that emphasize the advantages of online communication to facilitate “special relationships”, “international solidarity”, “global communities” and communication with “family and friends”. Support for online communication evident by some of the beliefs in this study is consistent with Hubbard’s (1987) emphasis on the need

for comprehensible output and learner-learner interaction in the target language. A further advantage of online communication and interaction with native speakers noted by one teacher is its ability to provide alternate linguistic models. This belief is echoed and supported in the literature by Hanson-Smith (1997) who recognizes the value of online communication in increasing linguistic diversity.

Many beliefs were expressed about the value of OLEs to provide students with access to other worlds beyond that of the classroom and other materials beyond those created by the teacher. Such beliefs support use of the computer in the role of generator of reality. Beliefs reflecting this metaphor of the computer refer to opportunities for students to “visit French-speaking countries”, to contact “a whole world of francophone kids”, “to see parts of the francophone world”, to “take students far beyond the classroom, to give them “contact with the outside world” and to “contact groups in other parts of the world”. These types of beliefs favour providing meaningful opportunities for interaction, more student-centered experiences and learner-learner interaction as well as an interest in taking advantage of the capacity of OLEs to break the pattern of teacher-centered discussion in the classroom.

A specific online communication tool about which teachers described their experiences and beliefs was that of chat rooms. Singhal (1997) refers to the ability of chat rooms to stimulate authentic communication and assist students in developing specific communication skills. Teachers described how they use chat both for communication between students in the same class and between different classes. Two teachers who discussed chat rooms at length described how they circulate around the room providing advice or help. Use of chat rooms reflects support for Communicative Language Teaching principles as follows: the teacher does not know what language the student will use; students interact with people instead of just with the language; fluency as opposed to accuracy is the goal; teachers assist the learners instead of controlling them; students generate original utterances rather than manipulating prefabricated language. Teachers also noted that they believe that use of chat allows for more participation from shier students which confirms the findings of studies on computer-mediated communication as reported

by Warschauer (1997a) and wherein researchers have noted that the social dynamics of CMC result in more equality of participation than what would be typical in face-to-face communication.

Communication is important in second-language learning. However, in the evolution of approaches to teaching second languages, we are reminded by Stern (1992) that the communicative approach relies too much on the single concept of communication. Warschauer (1996a) provides a similar caution when he notes the criticisms of Communicative CALL. He argues instead in favour of models which integrate communication with task- or project-based learning. Warschauer (1997a) affirms that online communication has the power to allow learners to collaborate and to construct knowledge together. Singhal (1997) observed that online interaction can lead to cooperative projects and increased communication between students from all over the world, in turn leading to the development of social skills. Many teachers in this study highlighted their use of OLEs as a means to promote collaboration between students. Collaborative projects, global communities, sharing and exchanging information and knowledge, exchange of videos, collaboration on themes: beliefs in the value of these elements suggests a move beyond the phase of Communicative CALL to reflect aspects of the vision for language learning in the 21<sup>st</sup> century. The following section looks at another sub-category of beliefs, that of real-world learning, and how it too reflects aspects of the vision.

### **6.2.3 Real-World Learning**

The concept of real-world learning is not unfamiliar to second-language education rather it is a concept that has been common to Communicative Language Teaching for many years. Earlier approaches to language learning such as Grammar-Translation and the Audio-Lingual Method did not take into account the importance of real-world contexts for learning. Instead, elements such as controlled practice, interaction with texts, habit formation, study of the forms and accuracy were emphasized. With the advent of Communicative Language Teaching came the emphasis on the importance of meaningful

communication, contexts for learning, authentic learning, and thus, real-world learning. Hymes (1968) referred to the importance of being communicatively competent in a speech community. Krashen (1978) developed the concept of language acquisition as opposed to language learning and, in general, the growth of psycho-linguistics, socio-linguistics and an interest in semantics highlighted the importance of real-world language use. Warschauer and Healey (1998) described how teachers gradually began to move away from a cognitive view of communicative teaching to a more social or socio-cognitive view which placed greater emphasis on language use in authentic social contexts. Furthermore, the development of French-Immersion programs gave rise to a new conception of language learning - one which gave more of a real-world purpose to language learning through a content-based approach.

Thus, French teachers have for many years been cognizant of the important role that real-world learning played in second- and foreign- language education. What is different now is that OLEs make real-world learning more possible. Teachers can now appreciate what this concept means in practice. Judging by some teachers' beliefs in this study, the new possibilities for learning are having an impact on students. Some of the beliefs indicated that OLEs make French a living language for students. It is likely that any other subject would be made "real" through study in OLEs. For example, through use of OLEs for math, students may come to see the application of math in every-day life. However, as teachers noted, through use of OLEs, students can see French connected to the everyday lives of individuals like themselves. Students "see French as something real-not just a subject taught in school", and not as a "dead language". Recognition of the importance of students seeing French as real indicates an underlying belief in the importance of meaningful learning.

Beliefs in this sub-category emphasized the importance, not only of meaningful learning, but of purposeful learning as well. Beliefs in this sub-category referred to the value of students having a "real audience and a real purpose". The value of OLEs was attributed to its capacity to allow students to "share student-generated work" and as "a productive (rather than receptive) tool". This belief points to the importance accorded to

the notion of active learning. More importantly, the belief suggests a reconceptualization of the role of the learner whereby students are seen as generators or producers of knowledge as opposed to consumers of knowledge. The value of sharing student work reflects Brown, Collins and Duguid's (1989) theory of situated learning which affirms that learning advances through collaborative social interaction and the social construction of knowledge.

Some of the beliefs in the value of real-world learning that were expressed in the context of this study represent a rejection and questioning of existing practices and the present organization of learning. One belief described how, in OLEs, "learning a second language becomes far less contrived and simulated" and another criticized "The linear model of learn, answer questions, test". In a study by Dwyer et al. (1991), the authors found that teachers who had reached the appropriation stage in the integration of technology displayed an increasing tendency to reflect on practice and to question old patterns. The authors describe this stage as representing one of the final stages in the process of evolution of teachers' beliefs from a traditional text-based curriculum to more constructivist approach.

A further belief expressed in relation to the real-world value of online learning is that it is more effective than what the television can provide. The effect of learning online is that it "hits home more effectively than looking at a distant TV screen up in the front of the class". The realistic value of OLEs is also illustrated by the belief in the "shock value" of the Internet and how a "virtual visit" allows for "in-your-face learning". Beliefs about the real world application of French in OLEs support Bracewell et al.'s (1998) conclusion that "learning situations become more realistic and authentic as classrooms are getting online".

These beliefs in the value of real-world learning suggest a devaluing of the classroom versus real-world dichotomy and a rejection of the discrepancy between the didactic situation inside the classroom and that of the world outside of the classroom. Such beliefs are thus consistent with Legenhausen and Wolff's (1987) metaphor of the computer as generator of reality. Meaningful, purposeful, realistic, authentic and active

learning: these concepts are consistent with the vision of learning in the 21<sup>st</sup> century in particular. The metaphor of the student as generator or producer of knowledge points to an evolution in classroom roles and relationships as well as a shift towards a more student-centred form of learning.

#### **6.2.4 Motivation**

While cognitive factors are important in terms of learning, affective factors play an instrumental role in second-language learning. Stern (1983) states that "... positive attitudes related to the language and the ethnolinguistic community are closely associated with higher levels of language proficiency" (p. 386). Positive attitudes towards the learning situation itself independent of the language can also result in higher proficiency. Beliefs grouped in this sub-category have in common that they associate use of OLEs with positive attitudes towards learning and with increased learning. Pusak and Otto (1997) provide an explanation for the motivating effects of OLEs in their discussion of multimedia. They argue that students can be much more intellectually engaged by interacting with complex mediated programs that present language and culture in context than they ever were performing repetitive drills: "They are motivated both by authentic experiences with the language and by the prospect of gaining skills that might have practical application for them..." (p. 6).

The multimedia environment of OLEs offers extensive opportunities for motivation according to some of the beliefs expressed by this study's participants. Teachers remarked that students appear more interested and respond more enthusiastically in French class when they assign Internet activities or when they tell students that the information came from the Internet. However, explanations varied about why students appear more interested by the Internet. Beliefs attributed the motivation to the fact that students "find it fun and interactive", that they like the "instant feedback" as well as the "exotic flavour" and that "they can have fun while still encountering the target language". One teacher attributed the interest and motivation to the fact that online activities appeared to students to be "more interesting than a worksheet" and were able "to break up the monotony" of certain

activities such as reading a book. These beliefs confirm some of the findings of Muehleisen (1997) who attributed the motivating quality of the Internet to the fact that students see it as new and exciting and as a tool they will need in their future careers.

The sources of motivation identified by teachers and even by Muehleisen differ from those of Bracewell et al. (1998) who posit that increased interest and motivation result from “a greater diversity of learning goals, projects, and outcomes” (p.14). The fact that teachers see online learning as being motivating may be less important than *why* they believe it to be motivating. The long-term, fundamental motivating factors of OLEs relate to their capacity to transform the learning situation into one which is student-centered thus focused on their needs, one which allows student-control, and one which allows students the opportunities to set goals and determine the paths for learning. These elements are more likely to provide lasting motivation than would the exotic flavour, or instant feedback of an online grammar lesson. Reeves’ (1993) studies found that the user-friendly and appealing features of multimedia comprised elements of which students quickly tired. As Pusak and Otto (1997) argued, the “solid pedagogical design and content” are no substitute for “the glitzy bells and whistles that seem so attractive to the casual observer”.

A similar reaction is evident in beliefs that portray OLEs as a means to extrinsically motivate students to want to learn French. These beliefs focused on the capacity of OLEs to motivate students who would otherwise complain that French “sucks”. Another teacher described how she chooses to use OLEs with her students in order to counteract her students’ lack of motivation for learning the language. Beliefs such as these that emphasize the extrinsic, superficially-motivating aspects of OLEs echo the reaction during the early phases of CALL when teachers valued the computer’s capacity to take away some of the drudgery of learning a second language.

In 1987, Hubbard described CALL software as that which motivates the learner to use the software and to learn the language. Evolution of use in technology particularly has shown us that the potential of OLEs lies in their capacity to motivate intrinsically through meaningful, purposeful, authentic and active learning situations and not through being fun or attractive. A further important potential of the capacity of OLEs to motivate

intrinsically is through improvement in self-image and self-esteem. Williams and Burden's (1997) propositions for teaching and learning from a constructivist perspective in the 21st century stress the important influence of the individual's self-concept in language learning. One teacher described how her students' proficiency in using the computer and their successful completion of assigned tasks provided them "with feelings of success". Beliefs such as these reflect an awareness of the importance of the individual's self-concept. No doubt that students' motivation could be heightened further through greater learner control whereby the "assigned tasks" were replaced by projects or tasks designed by the learner instead of being assigned by the teacher.

Teachers' beliefs in the capacity of technology to provide extrinsic motivation in order to counter classroom problems related to a disinterest in learning French, or to the monotony of classroom learning are reminiscent of the early stages of technology use in language teaching that relied on the capacity of the computer to take the boredom out of language learning. They contrast pointedly with beliefs that recognize the capacity of technology to provide intrinsic motivation through an increased ability to focus on and meet students' needs and interests. Such beliefs recognize the capacity of OLEs to offer opportunities for greater student control and to provide individualized paths for learning.

### **6.2.5 Learning**

This sub-category of beliefs related to ways in which OLEs can enhance learning is a very broad one. The beliefs in this section, while very close or similar to those in the next section on teaching, differ from them in that the focus here is on the student and on the learning situation or process as opposed to being on the teacher and the instructional process. Indeed, many of the beliefs in this study focused specifically on students, their changing needs and on the importance of focusing on their changing role. It is not surprising that teachers expressed beliefs about the changing needs of students and the ways in which these changes can affect the learning process. Perhaps more than ever today, as society is constantly changing, does it become even more challenging to respond effectively to the needs of students. One teacher's belief that "Today's students are quite

different from those of even 2-3 years ago” recognizes the rapid pace of change and its impact on teachers.

It is interesting to observe how teachers perceive this change. One teacher noted that “The students are accustomed to numerous stimuli, (ie. (sic) virtual video games, etc.), thus the teacher has to be more creative to obtain and maintain their attention.” This belief sees the change in students as resulting in a situation where the teacher has to compete for students’ attention. Teachers’ beliefs about how students are changing and how they can respond to these changes can reflect different perspectives. One perspective values technology as a means to ensure that students become life-long learners and that they can transfer their learning to other situations. This perspective shows evidence of a reconceptualization of the role of the learner as one who is not simply a passive consumer or recipient of knowledge but an active constructor of knowledge who is able to think critically and solve new and complex problems. Another perspective values technology because of its ability to effectively compete for students’ attention.

Beliefs that are more likely to reflect the former perspective are those that describe technology as something that “broadens the students’ horizons” and allows “students to be creative and learn through experience”, or allows them to have “more independent learning in class” and “to learn on their own while using an alternate approach to teaching”. Beliefs in the value of technology in general or of OLEs in particular to allow teachers to compete effectively for students’ attention, may result in a valuing of online activities such as “internet competitions”, “treasure hunts, crosswords”, “activities for special occasions”, “games, puzzles, maps”, “sending greeting cards”. While these activities may have a place in language learning, they do not represent those activities that may best take advantage of the potential of OLEs to transform the language learning experience. These types of activities are no doubt the types that provide what one teacher referred to as a “nice change of pace from the regular classroom setting”. However, they offer the same advantages as did the introduction of the language lab which was valued at the time of its introduction because of its potential to take the boredom out of the classroom.

Activities reflecting beliefs in the value of technology to transform the learning process are those in which students are producers as opposed to consumers of knowledge. Teachers described activities such as the creation of “class web pages where students can post autobiographies and display their art work”, or opportunities for “creative writing with online feedback” and “writing for publication”. These beliefs are confirmed by Warschauer (1997b) who argues that the Internet creates optimal conditions for learning to write by providing an authentic audience for written communication. Singhal (1997) also affirms that the Internet can serve as a medium for experiencing and presenting creative works or as a platform for students’ own work. Online activities in which teachers incorporate a variety of language skills including listening and speaking also represent a means of exploiting the potential of OLEs. One teacher described how she used web sites for listening activities, “to make France and French more of a reality” to access “guest “speakers” from various French-speaking countries”. Not surprisingly, the teacher concluded that such activities received a positive response from her students because students “see a purpose to learning a language and even to learning grammar!”. Such use capitalizes on the potential of OLEs to make learning real, purposeful, and meaningful to students.

Other advantages that OLEs present for learning lie in their capacity to change the pattern of interaction in the classroom so that it becomes more decentered in general and student-centered in particular. One teacher referred to opportunities for students to “work in groups and chat amongst themselves in the target language”. Beliefs in the value of student-to-student interaction reflect principles of constructivist learning. They also reflect a move towards a transformation of practices as observed by Dwyer et al. (1992) in their ACOT study. The authors found that the direction of change was towards child-centered rather than curriculum-centered instruction; towards collaborative rather than individual tasks; towards active rather than passive learning.

Unlike CALL which presented the same material in the same way and with the same analysis of performance, online learning provides a multitude of presentations and a wide range of content suitable to different learning styles and strategies. The value of

such modes of presentation that centre on the student are highlighted by those beliefs that recognized and valued differences in learning styles and abilities and which associated use of OLEs with a means to address these differences. Changes in modes of interaction may be accompanied by beliefs that devalue the “linear and traditional approach” and instead express a preference for the “arborensence” (sic) or hyper-textual approach of the Internet.

OLEs present further benefits for learning particularly in the teaching of culture. The cultural component of language learning became important with the advent of Communicative Language Teaching. However, teachers may not have had access to the resources or tools needed to allow students to develop an appreciation for and understanding of the real contexts in which languages exist. Singhal (1997) argues that the Internet can offer students the opportunity to participate in the culture of the target language and learn how cultural background influences one’s view of the world. Beliefs that recognize the value of OLEs to open “up the classroom to many more cultural inputs than the library did” represent an understanding of the importance of contexts for learning. The dissatisfaction with the inadequacy of TLEs to promote cultural understanding and to allow students to “get past the beret and baguette!” emphasizes the value of OLEs to promote authentic and meaningful learning.

OLEs present further advantages to language learners in that they can provide them with opportunities to develop and deploy higher-order thinking skills. Singhal (1997) argued that logic skills are required for searching, that evaluative judging is required by students when they review the information, and synthesizing occurs when students make a complete and coherent whole out of the information which they have gathered and evaluated. The following belief supports Singhal’s assertion: “When students use the Internet in their second-language learning certainly they have to problem solve: analyze, interpret, synthesize the materials that they are using on the Internet”. These types of beliefs also suggest an awareness of the complexity of language learning and how online activities can be designed to ensure challenging and effective learning experiences. Beliefs in the importance of high-order thinking skills contrast with what Prawat (1992) argues is the major obstacle to educational reform -that of the emphasis on factual and procedural

knowledge at the expense of deeper levels of understanding. In an exploratory study by Hannafin and Freeman (1995), the authors hypothesized that teachers who hold objectivist views will use the computer only for lower-order skills. Likewise, those with constructivist views would be expected to use computer programs that facilitate more open-ended and problem-solving approaches to curriculum.

Some participants in the study highlighted the value of OLEs to facilitate changes in the role of the learner and the teacher. Teachers noted that students' use of OLEs makes them "become more responsible and independent learners", that it facilitates "le travail en autonomie" whereby the student can "construire seul son savoir" and that "it can help create a situation in the classroom whereby the students become more responsible for their learning". Autonomy in learning suggests that students are choosing their own goals, determining the paths for learning, and that student control is looked upon favourably as an element that can enhance learning. Such beliefs lie at the very heart of the vision espoused by this study.

Also at the centre of the vision is the role of the teacher. Beliefs about the role of the teacher will be discussed in the next section. However, one belief expressed in relation to this issue is that, along with a change in the students' roles to that of being more responsible for their learning, comes a change in students' beliefs: "They realize that the teacher does not have to be a font of information, rather a guide. Hopefully, this will encourage them to become lifelong learners." Beliefs of this type indirectly highlight the fact that, not only can teachers reconceptualize their role, but students, as well, can begin to reconceptualize their role and that of their teacher's. Beliefs of this type also suggest a link between the roles held by students and teachers on one hand, and the concept of life-long learning on the other. The emphasis on life-long learning contrasts with beliefs in an earlier part of this section where teachers emphasized the importance of using technology to compete for students' attention.

Many of the beliefs in this section reflect aspects of the vision of language learning for the 21<sup>st</sup> century. Pusak and Otto's (1997) "new era" of language learning is characterized by many of the beliefs which were discussed in this section. The beliefs

emphasized process rather than product. The importance accorded to communication and collaboration instead of the study of the structure of the language recognizes the importance of function over form. Their new era favours development of critical thinking skills, promotes student-directed, student-centered learning, accommodates different learner styles and strategies and allows for the development of cross-cultural insights. These elements were all highlighted in the beliefs in this section. Those beliefs included in this section that do not reflect the vision are those that value the capacity of OLEs to compete effectively for students' attention. These beliefs reflect earlier uses of technology in language teaching that valued the capacity of the machine to take away the drudgery of language learning.

### **6.2.6 Teaching**

In the area of second-language education specifically, Stern (1992) explains that “one of the main features of the development of language pedagogy has been “the continuous attempt to renew language teaching through changes in teaching methods” (p. 6). Earlier sections of this chapter have shown that, often, although teachers were often aware of the changes in second-language philosophy and methods, practices remained unaffected because of a lack of tools and resources to effectively ensure the transition from theory to practice. Communicative Language Teaching, for example, with its emphasis on authentic materials, meaningful and purposeful use of language in real-world contexts, became a feasible approach to language teaching given the availability of sophisticated electronic tools which form part of OLEs.

An important way in which OLEs appear to be affecting teachers' beliefs is through the provision of electronic tools that encourage teacher discussion, collaboration and reflection. Beliefs that describe OLEs as a means to promote contact and sharing among teachers and to access trends, ideas and philosophies suggest that OLEs serve as valuable assistants that provide services and opportunities otherwise not available to teachers. Other beliefs described the practical value of OLEs to provide teachers with opportunities to keep up with their French and to develop friendships and solve problems. Such beliefs underlie

a willingness to change as well as an openness to new ideas and practices. Furthermore, these beliefs recognize the importance of collaboration between teachers as a means of improving teaching. Most importantly, they suggest that teachers see OLEs as providing them with opportunities to learn. Finally, these beliefs suggest that these teachers are using OLEs not just as a tool but as a place or environment where they can meet other teachers, discuss and collaborate.

Teachers also described OLEs as a repository of teaching content where they could access resources, activities, ideas, dictées, proverbs, lesson plans, teaching strategies, articles and sites to be used in learning centres. Others described its value to “supplement the current curriculum” to provide “support for the cultural objectives” or “enrichment” or “supplementary information” for “the development of themes”. Other beliefs described the value of OLEs for “skills development” and for “reinforcement of previously learned concepts”. Singhal’s (1997) description of the capacity of the Internet bears some resemblance to these uses identified by teachers. She notes that the Internet can be used to provide supplemental language activities such as reading tests, pronunciation, grammar and vocabulary exercises and comprehension questions. However, Warschauer (1997b) reminds us that online activities should not be simply add-ons to the curriculum rather they should represent an attempt at integration and should, as well, place sufficient cognitive and linguistic demands on students. Beliefs that emphasize the value of OLEs “to provide opportunities to go beyond expected curricular outcomes”, to allow for “hands-on learning” or to support a more resource-based, cross-curricular, project-centered and communicative approach to language teaching are perhaps more representative of the capacity of OLEs to place cognitive and linguistic demands on students. Beliefs that might take advantage of the capacity of OLEs to significantly affect the teaching process are those that refer to opportunities to “vary teaching methods”, promote “active learning”, to “create courses which are richer and better structured” and to create “tailor-made multi-media learning activities”.

The beliefs that provide extensive support for the capacity of OLEs to transform the teaching process are those that critique or compare traditional teaching practices with

those possible through use of OLEs. The following excerpt provides an example of this type of belief: "...--it is so easy to get into a comfortable rut! I get to offer the students worlds by visual aid of the computer that I could have never dreamed of by "normal" teaching methods. I guess it is making me a better teacher and I am more proud of the product I am delivering--it is now multi-dimensional rather than dry and boring". This belief and others like it suggest what Dwyer et al. (1992) refer to as "readiness for purposeful change" whereby the teacher tends to reflect on practice, to question old patterns and to realize that technology can change her students' learning experiences. Questioning old ways of doing things, is what is evident in beliefs such as the following: "We needed a breath of new life, teaching had become stagnant..." Other beliefs such as the following that criticize concerns with covering the curriculum indicate a readiness for change: "Yes, the minister wants a particular curriculum covered and yes, it is very tempting to just stick to the provided texts but how boring to use ONLY the prescribed materials and not have enough interest or motivation to spice up our own teaching and the students' learning by experimenting with new methods of instruction...".

Schofield and Verban's (1988) investigation of the effect of computer use on the teaching of mathematics revealed that introducing computers into the classroom not only changes the teacher's role, but results in a shift from a didactic to a constructivist approach. Beliefs such as the following would be consistent with their findings: "I used to apply the direct approach with repetitive drill, teacher led lessons. My style now is more constructivist, facilitative, multi-disciplinary in nature and I tend to approach themes with the given, that the computer is an integral part of activities, center work, etc.". In their vision for the learner, Henchey et al. (1996) emphasize the importance of learner-centered education characterized by "personal control of learning by students". Teachers' beliefs that signify a move towards greater control by learners would be consistent with the vision of Henchey et al. and with the vision espoused by this study. One example of such a belief is articulated as follows: "the Internet has changed my practice of teaching, by allowing the student more control and therefore encouraging more active learning in the class".

The issue of student control is a pivotal one in the context of language learning as

Williams and Burden (1997) remind us that learners learn better if they feel in control of what they are learning and when they are encouraged to set goals for themselves regarding learning the language. The flip side of the playing card of learner control is that of the role of the teacher who gives up some of her control to become more of a facilitator or guide. In second-language teaching, the concept of the teacher as facilitator dates back to the emergence of Communicative Language Teaching which, according to Richards and Rodgers (1986), often required “less teacher-centred classroom management skills”. Littlewood (1981) describes the role of the teacher in Communicative Language Teaching as that of a “facilitator of learning”. It is not surprising given the importance of the decentered role of the teacher in CLT that some of the teachers in this study expressed beliefs consistent with that of the importance of the teacher as facilitator: “One of the ways in which using the Internet changes one’s way of teaching is that if you had not adopted the role of facilitator, technology will force you to take on this role.” It is interesting that this belief associates the decentered role of the teacher, not with CLT but with use of technology as does the following belief: “The internet permits the teacher to adopt the role of facilitator (so often espoused in professional development but difficult for many to achieve in the classroom) rather than all-knowing sage”.

Bracey (1993) concluded that technology serves as a catalyst for change and that, as a result of using technology, teachers were more willing to take risks, that they allowed for more independent student work, that they worked more as facilitators and that they provided for more dynamic learning experiences. Some of the beliefs expressed in this study are consistent with his conclusion such as the following belief which purports that effective use of technology requires the teacher to change her role: “As long as a teacher is willing to give up the ‘sage on the stage’ concept, and become a ‘guide on the side’,--the technology becomes an asset and not a liability.” The following belief is consistent with Bracey’s observation of the changes which accompany the change in role as a result of using technology: “To borrow a phrase, I am trying to become more the “guide on the side” as opposed to the “sage on the Stage”.... again, offering the same approach of making the students more responsible for and in control of their own learning.”

The Audio-Lingual and Direct Methods depended on a central and active role for the teacher. CLT and now constructivism provide alternatives to such roles. Whereas in the Audio-Lingual Method, teachers controlled the learners, in the vision espoused by this study, teachers assist or guide the learner. In the following belief, a teacher sympathizes with the fears teachers may have in abandoning the approaches with which they have been comfortable. At the same time, she rejects an approach whereby the teacher controls the learner and, instead, espouses an approach whereby the teacher assists the learner: “Teachers have to be open-minded and not worry about losing ‘the spot of authority’ that they have traditionally held in front of the class. If they are not fearful of empowering the students to explore, than (sic) that will enable the teachers to expand their horizons.” A similar belief reinforces the value of adopting new roles: “The teacher does not have to be at the center of instruction. When one can get past this, then integrating the Internet becomes fun and exciting”. Teachers’ willingness to adopt new roles represents what Hannafin and Savenye (1993) term as a shift in learning theory. In their study of computer use, they found that the change in the role of the teacher from that of lecturer to facilitator represents a corresponding shift in learning theory. Teachers’ interest in being a “facilitator” instead of “a disseminator of knowledge” would reflect a shift away from approaches common to Audio-Lingualism and the Direct Method towards a more student-centered approach.

Beliefs that focus on the teacher’s role and the activities in which she engages in on a daily basis are likely to influence many other beliefs held by the teacher. If she perceives herself as a facilitator then many of the other aspects of the teaching process will likely change including the role of the student. The beliefs reported in this section focused significantly on teachers’ beliefs about their role. Most importantly, the beliefs indicated that some teachers were reconceptualizing their role as a result of their experiences with OLEs and were questioning some of the assumptions common to earlier approaches to the teaching of FSFL.

Many of the beliefs reported in this section reflect aspects of the vision of learning in the 21<sup>st</sup> century. These beliefs highlight the value of OLEs to promote teacher

collaboration, and recognize it as a support and as a means to find out about new approaches, ideas, techniques and, most importantly, new practices. These beliefs centre on a need to change and on a desire to transform practices. Other beliefs reported in this section reflect Behavioristic CALL whereby the computer is valued as an add-on or a teaching machine that simply assists the teacher in carrying out more efficiently traditional classroom tasks.

### **6.2.7 Summary**

In this section on beliefs related to the category of advantages of the use of OLEs, teachers refer to the ways in which the new environments for learning are influencing their beliefs. Many of the beliefs in this section suggest that teachers are rethinking the ways in which they have done things in the past, that they are exploring new practices, new roles and new beliefs about learning and teaching.

Many of the beliefs in this section reflect aspects of the vision of learning for the 21<sup>st</sup> century. They are beliefs, in many cases, which suggest that teachers are using technology to transform their practices. Along with this transformation comes a certain disenchantment with current practices, a suspicion that what these teachers have done in the past was ineffective and that what others are doing presently needs to change. The transformation appears to be from the teacher as transmitter of knowledge and controller of the learning process to teacher as facilitator or guide. The role of the student emphasizes greater levels of engagement and is reconceptualized to the student as active researcher, problem-solver, communicator, collaborator. The role of the computer is valued as a generator of reality and not as tutor or pedagogue which were common metaphors with earlier approaches to use of technology in language teaching. The beliefs value patterns of classroom interaction that are de-centered and varied and include student-to-student, one-to-many, teacher-to-student, etc. The textbook is challenged as the primary tool for learning and the curriculum is reconceptualized and scrutinized to allow for more active, richer learning situations. The process of language learning is no longer focused on form and structure. Instead, real-world, holistic content and contexts that allow for input and

output are believed to be necessary to allow for social interaction, individualized, meaningful and purposeful communication. The teacher's motivation is less didactic with a shift towards concerns about learning and less about instruction. Technology is viewed as a facilitating tool and one that enhances the curriculum. Teachers' beliefs reflect a high comfort level with the new technologies and their impact on teaching and learning.

Not all beliefs in this category of advantages pointed towards a shift in thinking or a transformation of practices. As was mentioned earlier, in some cases, the beliefs simply pointed to a means for teachers to do the same things but in a better way. So, while some beliefs portrayed OLEs positively as a means to access resources or as a means to motivate, they nonetheless suggested that the computer was little more than a teaching machine or add-on, a tool for making learning more interesting or more efficient. Beliefs of this type are not part of a larger system of beliefs that reconceptualizes roles of the major players as well as the entire learning process. In terms of the evolution of approaches and of technology use, they reflect a perspective on use of technology more reminiscent of Behavioristic CALL.

While this section has focused on beliefs that emphasize the advantages of use of OLEs, the following section presents a discussion of beliefs related to the challenges of using OLEs. This discussion once again aims to interpret the beliefs in relation to the evolution of approaches and technology use as outlined in Chapter 2.

### **6.3 Beliefs Related to the Challenges to Use of OLEs**

This second category of beliefs contrasts with those in the first category in that these beliefs emphasize problems, difficulties, concerns or challenges in the use of OLEs. These beliefs do not necessarily or always dismiss the value of OLEs in the teaching of FSFL, however, they raise questions about how OLEs can be effectively exploited and how other issues such as time, training, control, and the curriculum, to mention but a few factors, impact on and interplay with teachers' efforts to integrate technology. This section of the chapter follows the same pattern as did the section that provided an interpretation of the beliefs related to the advantages of the use of OLEs. Each sub-

category will be considered separately in order to ensure consideration and interpretation of the beliefs. The first sub-category considers how factors such as time and the curriculum play an important role in teachers' beliefs about teaching and learning in OLEs.

### **6.3.1 Time and the Curriculum**

In Chapter 1 of this study, the issue of time was highlighted in relation to traditional schooling and it was noted how TLEs structure learning into short blocks of time, and how, generally, the dynamics of clock and calendar dictate much of the activity. Schools are characterized by a system that divides days into periods, periods into lessons, and lessons into curriculum objectives or outcomes. Time ultimately governs how curriculum material is presented to students and determines the opportunity they have to comprehend and master it. Thus, a curious interplay or dependence is established between the two concepts wherein time is in frequent competition with the curriculum. The curriculum itself, which is often referred to as "prescribed" sets out what may be interpreted metaphorically as a path or course to be followed by the teacher.

Beliefs grouped in this sub-category portray time as a valuable but rare commodity and reveal a preoccupation with being able to complete the curriculum in the given amount of time. These beliefs suggest that teachers feel pressured by external constraints over which they have little or no control. These types of beliefs were also articulated by some of the participants in a study by Honey and Moeller (1990). The authors found that teachers whose classroom practices were more traditional in nature believed that they did not have sufficient time for any additional activities. Beliefs such as "Time is of the essence therefore one is apt to give up before achieving success", or "Our curriculum is overloaded. Therefore one would have to be done at the expense of the other", or "the curriculum is already so jam-packed full of activities, you have to make an effort to fit in an Internet activity usually at the expense of something else" suggest that, to ensure efficient use of time, one must compromise quality. Teachers expressed concerns about consuming time by "surfing aimlessly" or "browsing the web in other areas", waiting for information to be downloaded, translating sites and posting student work on the Internet.

These beliefs suggest that such activities do not form an integral part of a learning process that maximizes the potential of OLEs. Instead, these activities appear as add-ons or “something extra that needs to be taught” and which competes for attention with the prescribed curriculum.

The issue of competition with the curriculum lies at the heart of numerous beliefs expressed by participants in this study. In a study on staff development, Collinson (1996) concluded that the teachers who adhered to the behaviorist paradigm worried about being “able to cover everything”, and referred to the need to “cover the curriculum”. Beliefs that express a concern about not having “the necessary instructional time needed for the completion of the prescribed curriculum” or beliefs which find the program “to be ‘surchargé’ already” may be incompatible with effective use of OLEs. Beliefs such as the following illustrate the tensions that some teachers may perceive as existing between the curriculum on one hand and use of technology on the other: “I’m always pressed to cover all the objectives by June and I’m afraid that I’ll fall behind by taking my students to computer room” or “With such an intense curriculum, to use the Internet one must have appropriate sites to ensure objectives of lessons could be achieved and make maximum use of time”. Prawat (1992) argues that teachers’ “dichotomous view of the learner and of the curriculum” and their view that the curriculum is “a course to be run” will impede the adoption of a constructivist view of teaching and learning. Teachers’ belief in the need to adhere strictly to the curriculum may deter them entirely from use of OLEs as suggested by the following belief: “there is too much material to be covered in the curriculum to allow teachers to experiment with the Internet”.

Other beliefs in the sub-category reflect teachers’ understandings of how OLEs and the curriculum relate to each other. Teachers referred to how “matching projects/activities with curriculum objectives is sometimes a problem”. They indicated that they did not see the “relevance to the curriculum” or that they already “have a very good program to use”. Others argued that the curriculum itself and “the activities and lessons suggested are not conducive to Internet usage”. Another teacher completed a successful Internet project with her students but then lamented the fact that she did not feel she had met “the objectives of

the French curriculum”. The implication of such beliefs may be explained by Taylor (1990). He explains that teachers may perceive the curriculum as a real object which is determined by the state and over which they have little control or influence. As a result, he claims, teachers fail to adapt their role to suit local circumstances and, furthermore, adopt the role of manager who is concerned with delivering the syllabus and controlling students’ interactions with it.

In their review of the literature on why teachers resist micro-computers, Hannafin and Savenye (1993) found that some teachers had little faith in the computer's ability to improve learning outcomes. Some of the beliefs in this sub-category support their finding and focus on a lack of purpose or benefit for using OLEs or simply a lack of interest in using it. Other beliefs of this type may emphasize the importance of varying methods and resources and not just focusing on technology as one “method”. Beliefs that reflect little faith in the computer's ability to improve learning outcomes refer to use of technology as a passing fad or a tendency to simply jump on the computer bandwagon.

Teachers’ beliefs about learning itself and about what constitutes effective learning situations and resources can also positively or negatively impact on their use of OLEs. One teacher argued, in the case of primary students, using the Internet with them instead of teaching them “sound reading and writing principles” is equal to “putting the cart before the horse”. This view suggests that the teacher believes it is more important for the student to interact with the language than it is to communicate and to use language in meaningful and purposeful contexts. This approach can be explained partially by Brown (1980) who argues that limited time and resources in schools favour a more book-oriented approach to language teaching. Beliefs that devalue use of OLEs in the teaching of FSFL may compare use of OLEs with students’ use of books. Some participants in this study argued that, above all, they wanted their students to “enjoy and value a good book”. The teaching of FSFL has, in the past, relied to a large degree on use of the text-book. Beliefs that emphasize and value reading as a means to develop language skills may not equate use of technology with language learning except in a peripheral role as an extra resource to be used for enrichment or as an add-on.

An important issue that is brought to light when we consider teachers' beliefs about the curriculum and use of OLEs is what Becker (1991) refers to as "institutional constraints" and "the regularities in the social structure in which most of [teachers] work". Dwyer et al. (1992) put forth a similar argument when they explain how cultural norms continue to support lecture-based instruction and subject-centered curriculum. Thus, even when innovative teachers try to alter their practices and beliefs, these constraints, regularities and cultural norms can conflict with the teacher's beliefs. In the following excerpt, one teacher's beliefs express an explicit criticism of systemic practices: "Our educational system works against these very valuable but time-eating learning projects. There's the "curriculum to cover" - always more than is ever possible even without the extra projects.... It drives me crazy. And as long as teachers are willing to play by those antiquated rules, the nouvelles technologies will remain just that".

Antiquated rules may be synonymous with what Dwyer et al. (1991) refer to as "the principles of 19<sup>th</sup> century instruction" that hold teachers "in check" thus preventing them from investigating the potential of modern technology. The teacher's expression of this concern indicates that she is at a stage where she is questioning existing practices and systemic structures or conventions. These types of beliefs also indicate a conflict between the teacher's beliefs and the systemic structures in place. Such conflict, while it may represent a necessary stage in the transition towards transforming practices, reminds us that evolving beliefs and practices presents significant challenges even for those who are willing. Conflicts or tensions between teachers' beliefs were also noted in a study by Collinson (1996) who found differing beliefs about teaching and learning between adherents of behaviorist and constructivist paradigms.

Becker (1991) refers to other obstacles of technology use such as "the circumstances of teaching" which, he posits, can negatively affect teachers' "more conscious long-range goals". Becker singles out time as "the biggest impediment to better computer use" and to even "modest variations to the routine of direct instruction". The following comments by teachers support his conclusions: "All of potential (sic) for internet is unlimited but like many others there is no time to get on it"; and "There is so much

material on the web and so little free-time to access it!". While Becker may emphasize how time and systemic structures impede teachers' efforts, some teachers themselves may hold different beliefs about what impedes computer use among teachers. For example, while one teacher conceded that "teachers do feel pressured by many factors to cover their curriculum", she nonetheless argued that it was lack of "time-management skills" and "motivation of the teacher" that explained "why teachers don't "fit" anything else in". Another argued that teachers' lack of time is due to their own lack of commitment. These types of beliefs suggests that the onus is on the teacher and not on the system to change in order to ensure technology integration and as such contradict Becker's conclusions.

Another teacher expressed a similar belief about teachers' need to be able to effectively manage their time in order to face the "huge task" of attending to the many responsibilities related to teaching with OLEs. However, she argued that the skills needed to manage time must arise out of a firm commitment to "looking outside the box". In this case, the teacher recognizes the far-reaching effects of using technology and shows an understanding that technology is not simply an add-on, that instead, it is an element which requires teachers to change paradigms and transform practices. While some teachers may be concerned that their colleagues are not changing their beliefs quickly or profoundly enough, Dwyer et al. (1992) argue that the significant demands of the profession of teaching actually force teachers to be pragmatists, to rely on their "deeply-rooted beliefs about schooling". They argue further that these beliefs help them "cope" , "survive the day" and "weather the storm of the demands they face".

In their study of the influence of teachers' beliefs on computer use, Hannafin and Savenye (1993) found that one of the reasons teachers resist technology is because its use requires increased investment in time and effort. Investing the time may appear futile for some teachers if they feel that, regardless of their efforts, they will have difficulty keeping up with "les trop rapides évolutions informatiques ...". For some teachers, trying to keep up with technological changes is comparable to almost futile attempts similar to aiming at a moving target. Investment of time is portrayed as hardly worthwhile given the need to constantly invest more time in order to catch up with or keep abreast of the changes.

Beliefs in the present study suggest that using OLEs requires significantly more preparation time than would be required for traditional classes. Many teachers described not having sufficient preparation time to develop lessons for Internet use or to feel comfortable using OLEs. These beliefs suggest that the teachers who hold them may be at an early stage of use of OLEs. They may well be open to investigating the potential of using OLEs but require release time or extra preparation time. For example, one teacher remarked that while the “potential for internet is unlimited” she had no time in her personal or professional life to devote to its use.

The problem of preparation time may be even more acute at the primary levels or when students are young. However, preparation is not the prime factor that may deter teachers from wanting to use OLEs with children of this age. Teachers’ beliefs on this subject suggest that there is a certain compounding of problems that occur with young children. Their slow typing skills, combined with the demands of working in a second language, combined with pedagogical demands of working with young children, led a number of teachers to conclude as did the following teacher that “Using the internet with young children is not using instructional time wisely”. These beliefs suggest that there may be issues related to the teaching of FSFL in OLEs that are particular to the primary grades and which may require further investigation beyond the scope of this study.

Another factor that appears to deter teachers from wanting to use OLEs for the teaching of FSFL is the belief that working online and particularly, using a project-based approach in a second language, is more challenging and “time-consuming” than if students were working in their first language. More time and energy is demanded of the FSFL teacher because of the gap between students’ intellectual and linguistic abilities. This belief suggests that when FSFL students work online, they may need to depend more on their teacher to serve as a “language resource” and to “provide the linguistic help that non-natives need to navigate their way through the Internet”. In a previous section of this chapter, the opposite belief was articulated. Teachers argued that use of OLEs made students less intellectually and linguistically dependant on them. The difference between the beliefs may point to a difference in the conception of roles and of learning. Some

approaches to teaching accord a more central role to the teacher who constantly monitors what the student is doing, who controls the resources and who provides the explanation and interpretation of the materials with which the student interacts. Beliefs about the need for the teacher to serve as an indispensable language resource when students work online reflect the Audio-Lingual Method according to which the teacher controlled very carefully all the language with which the student came into contact. The aim of linguistic competence meant that errors had to be prevented at all costs, the teacher specified what language the student used and the teacher controlled the learner.

Other beliefs related specifically to language have to do with teachers' preoccupations with devoting time to ensuring that communication is in French while students work online. Translating sites, checking sites to ensure that they are in French, monitoring to ensure that students are using French constantly: no doubt this preoccupation will lead to time being diverted from other, perhaps more valuable or important pursuits. Such a preoccupation with ensuring that students are always using French is likely a result of the influence of the Direct Method which emphasized communication in the target language. The use of students' first language is believed to be something which the teacher must guard against because it contravenes the basic tenants of Communicative Language Teaching, immersion methods and the Direct Method. However, as Cummins (1998) argues, a preoccupation with ensuring that students are using French can result in a "transmission-oriented pedagogical approach" that is "less cognitively challenging and creative than many educators would consider appropriate" (p.3). Cummins also found that "when teachers are asked why they do not implement more cooperative learning and project-based strategies they usually indicate a concern that students will use English in these activities". Thus, if teachers believe that they will "lose" time ensuring students use only French while online, they will not only be reluctant to use such strategies or project-based approaches, they may, as well, be reluctant to use OLEs.

We have seen in this section that teachers' beliefs about time and the curriculum on one hand and use of OLEs on the other appear to be related to sets or systems of other beliefs. A teacher's beliefs about time may be related to her beliefs about what constitutes

effective teaching and what constitutes an effective teacher. These beliefs may in turn be related to or affect beliefs about the curriculum or about second-language learning. For example, if the teacher's set of beliefs about her role incorporates the metaphor of the teacher as manager, her set of beliefs about teaching will likely emphasize efficiency, production and control, and her set of beliefs about time will likely dictate strict time-management. Her beliefs about the curriculum, if she believes herself to be a manager will reflect the metaphor of the curriculum as a course to be run. Woods (1996) explains how each belief is part of an interwoven network that includes many other beliefs. How teachers view time and the curriculum may dictate other sets of beliefs and likewise, other sets of beliefs may dictate how the teacher views time. Thus, changing teachers' beliefs about time and the curriculum may necessitate changing whole sets of beliefs that may, on the surface, appear to be unrelated to time and the curriculum. If the teacher believes herself to be a facilitator and learning to be a process of guided discovery and exploration that is driven by the goals of the learner, she may be less concerned with the curriculum and with time constraints. In later sections of this chapter, we will have the opportunity to consider how other sets and systems of beliefs relate to each other and to the issue of time and the curriculum.

Many of the beliefs related to time and the curriculum reported in this section reflect a philosophy that supports the teacher in the role of manager, and emphasize the importance of the product of learning and favour the text book as the primary resource. The beliefs also reflect aspects of the Direct Method and the Audio-Lingual Method. Some of the beliefs portray OLEs as a passing fad or an add-on to, a competitor with, or, an intruder in, the curriculum. OLEs appear to interfere with the time available to the teachers forcing them to hasten their pace and compromise their goals. Frustration, anxiety and feelings of inadequacy characterize teachers' experiences as they attempt to resolve tensions between the demands of the curriculum on one hand and use of technology on the other. An interesting and important element of the beliefs in this section is their relationship to the systemic conventions and principles of schooling. These conventions and principles appear to serve as obstacles to transformation of teachers' beliefs and to use

of OLEs. Some of the beliefs reported in this sub-category questioned these conventions and principles and reflected a desire to want to transform practices.

In the following section which explores beliefs about training, support and vision, we will observe how the issue of training is related to both time and the curriculum. We will also see instances of ways in which teachers' beliefs conflict, not necessarily with the systemic beliefs, but instead, with the beliefs of other colleagues.

### **6.3.2 Training, Support and Vision**

Singhal (1997) highlights some of the challenges to use of the Internet in language teaching and cites lack of training and familiarity on part of teachers as an important challenge. Dwyer et al. (1992) refer to teachers as pragmatists or individuals who must survive the day and weather the storm of the demands they face. Kagan (1992) characterizes the classroom similarly when she describes it as a place of great uncertainty and unpredictability. Teachers derive security from knowing that things are going well and from being able to identify and solve problems. What both sets of authors tell us is that teachers rely on having a sense of certainty and security in order to cope with the demands in their environment. Part of that security comes from knowing the answers to questions, knowing more than the students and from being in control of the tools and materials of their trade. One individual noted in relation to teachers: "We all tend more or less to be "perfect" and want our lessons to be adequate". Thus, when faced with new tools, materials or pedagogies such as OLEs, some teachers will rely on and expect training and support that will provide them with the security and confidence they need in order to "weather the storm".

Understanding this aspect of TLEs and the way in which teachers respond to it can help clarify some of the beliefs in this section. The beliefs that are considered in this sub-category reflect a high degree of discomfort, concern, uncertainty and insecurity. Teachers' strong emotions expressed in the context of these beliefs remind us that beliefs have an affective as well as a cognitive component. The beliefs do not convey a sense of comfort, control or security. Instead, they convey strong emotions which suggest that,

faced with the new environments, teachers do not believe they can “weather the storm”. Beliefs such as “we are completely helpless”, “many adults are petrified of this stuff”, “(teachers) feel intimidated”, “j’ai peur d’amener mes étudiants au centre des ressources”, “I don’t feel comfortable enough”, all convey the insecurity which some teachers experience while working with OLEs. Bracewell et al. (1998) provide an explanation for teachers’ reaction to use of OLEs. They describe the classroom as “a place where order prevails” and posit that the introduction of information and communication technologies into schools creates a zone of uncertainty for teachers.

Singhal (1997) focuses specifically on the foreign-language teacher in her explanation of teachers’ fear of using new technologies. She argues that “foreign language teachers are especially anxiety prone to computers since they often have little experience with computers”. The expression of anxiety is certainly evident in teachers’ comments presented above. One of the study’s participants nonetheless provided some support for Singhal’s view of the foreign-language teacher by suggesting that these teachers were perhaps more at risk in their use of OLEs given their pedagogical isolation: “Internet, c’est d’un seul coup pour des profs étrangers souvent beaucoup plus isolés et limités dans leurs pratiques de classe qu’on ne croit, quelque chose d’infiniment ouvert et qui donne le vertige”.

Many of the beliefs attribute teachers’ inability or helplessness to the fact that their preservice training did not include use of OLEs. Others also point out that they rely on how they themselves learned “which did not include the Internet (sic)” or that they “tend to rely on the tried and true”. These beliefs confirm the conclusions of Becker (1991) who argues that teaching practices are a result of teachers’ own schooling, training and experience as teachers. These beliefs indicate the extent to which teachers may be dependent on previous experiences to guide them in the use of new tools and practices. Yet, their previous practices and experiences are of little use to them as they venture into the new domain of online learning. In a study of English as a second-language teachers, Johnson (1994) found that teachers’ beliefs were largely based on images from their formal language learning experiences and that these beliefs may have been responsible for the teachers’

ineffectual teaching practices. While some teachers in the study criticized their own teacher-directed instructional practices, they felt unable to alter their practices due to a lack of alternative images of teachers and teaching. LeLoup's (1995) longitudinal study of the evolution of beliefs of preservice language teachers explains the problems related to teachers' reliance on the way in which they learned. She argues that such reliance can result in teachers having misconceptions about language learning which could impact on their success as teachers.

There is also a belief among some that training must be "provided" as opposed to the teacher taking responsibility for gaining the experience and knowledge independently through experimentation and exploration. The following individual argues that if the teacher is expected to learn new skills then she must be provided with some release time: "I am extremely frustrated as a teacher because inservice in these areas is not provided. If I am expected to do it along with everything else I do outside of the many extra hours I work at home, then I say no!" In this case, learning how to use OLEs is seen as an added burden to which the teacher is not receptive.

A number of beliefs were expressed in the context of this study that suggest that anxiety about using OLEs in the teaching of French can relate to fears of knowing less than students. These types of beliefs revolve around teachers feeling that if they are not comfortable with the technology or if they know less than the students then they cannot use technology with the students. These beliefs support the conclusions of Hannafin and Savenye (1993). In their summary of the literature on why teachers do not use computers, the authors found that frustration in learning how to use the computer causes some teachers to give up early. More importantly, they found that teachers resisted using computers because they were afraid of losing control over students or of "looking stupid" in front of the class.

Teachers' beliefs also centered around the types of training that should be offered. Beliefs on this subject varied extensively. One type of training that was highlighted and that would be specific to second-language teachers is "knowledge of the computer terminology in French". One teacher argued that, without this training, high school

teachers “would find it extremely difficult to teach computer-related skills in French” and other teachers “who are used to following a text book” would feel threatened when they go on the Internet and “encounter texts cold - with no chance to look up new words”. This belief reminds us that teachers may need training that helps them transition from a text-book mode with its accompanying pedagogies to a mode of online learning which de-emphasizes or decenters the teacher’s role from one who must interpret texts for students to one who works alongside the learner in a process of knowledge exploration and construction.

Technical training that would instruct teachers in ways “to fix things” is one aspect on which efforts might be focused. Many other teachers focused less on the need to know the technical aspects and more on the need to know about content that they can use in their classes. Beliefs expressed in this study indicate that teachers want to know what sites and activities to access, what the objectives of using the sites are, which sites are appropriate and available and which ones fit with the prescribed curriculum. Knowledge of sites, their objectives and how they fit with the prescribed curriculum may provide teachers with opportunities to add to the resources they have and to provide students access to more authentic resources. However, such knowledge will not likely assist them in changing their roles or in providing more control to students to ensure knowledge construction. Another teacher described needing someone to help her find what she was looking for on the Internet which she likened to “a huge resource centre full of partially catalogued (sic) books”. If teachers believe that OLEs are little more than repositories of content then their use of OLEs may be limited to this conception. Training can indeed assist her with searching techniques to find resources, however, such training will not allow her to take advantage of the potential of OLEs which goes beyond their value as a repository of content.

Training may need to begin, for some or many teachers, at the very basic but essential level of helping teachers to understand the value of OLEs and their role in education. Such training can emphasize the capacity of OLEs to support transformation of practices to change paradigms, to alter roles and responsibilities and to reconceptualize the

entire learning process. Some teachers indicated that they did not use the Internet because they did not see any benefit coming from it, that they were “not aware of its value in improving learning”, that they did not have “a reason to go online” or needed to decide why they were using the Internet with their classes. Another indicated that she had trouble coming up with ideas for projects. It may be that, while some teachers have a basic sense of ways in which they can use OLEs such as for project-based learning, they are not sure exactly how to proceed. Training may help them understand and explore the relationship between OLEs and the curriculum. Although some teachers appeared to recognize the value of OLEs, they explained that they did not know how to incorporate them into their teaching. Another expressed the need for training in order to transform online material into “matériel didactique”.

Garrett (1991) reminds us that the computer does not constitute a method in itself rather it is a medium or an environment in which a wide variety of methods, approaches or pedagogical philosophies may be implemented. Garrett’s argument was supported by one of the participants in the study who indicated that “without staff development time (which means \$), we will continue to teach in the same old way, tinkling with machinery but never really redefining how we teach”. This belief recognizes the role that training must play in assisting teachers to adopt new philosophies, methods and approaches. However, some of the beliefs expressed in this study argue that present efforts at training are placing too much emphasis on the technical aspects and not enough on helping teachers to adopt new pedagogical approaches. One participant used the concept of technological illusion to describe tendencies to see technology as an end in itself which can solve all problems but which does not provide the necessary pedagogical support. Another criticized a similar tendency to “sur-valoriser la technique” and “à en faire un passage obligé” while at the same time overlooking the new paradigms and possibilities for technology use. The participant criticized the purely technological vision which results in extensive training on the technical aspects without appropriate pedagogical accompaniment. This belief reminds us of the importance of having a vision for training that goes beyond knowing how to use the tool. It emphasizes the importance of focusing on why we are using technology and not

on how we use it. This belief is also reflected in Papert's (1987) argument which cautions against technocentric thinking or "the tendency to give centrality to a technical object such as a computer"(p.23).

In spite of the strength of this argument, others will argue with equal force that technical training must come first before any emphasis is placed on pedagogical aspects. One belief expressed is that we must be up-front and honest with teachers that the technical aspects are not easy and that they demand significant attention and effort. Otherwise "... on crée des gens mal à l'aise avec les nouveaux outils qui n'osent avouer leurs peurs parce qu'il faut être moderne et connecté.". Such training can reassure teachers from the beginning. Another participant argued along the same lines when she expressed the belief that "Il faut un minimum de maîtrise de l'outil pour aborder les questions d'ordre didactique". What do these conflicting beliefs tell us? On one hand they tell us that the needs in terms of training will vary widely. On the other hand they tell us that the perceptions about where the needs lie will also vary. They also suggest that training will necessarily follow a linear model whereby pedagogical training will be preceded by technical training or vice versa. While no literature on the approach to training was explored in this study, beliefs presented in this section suggest that training may need to follow more of a model that integrates technical and pedagogical aspects in varying degrees at varying times depending on the needs of the trainee. As teachers progress in either of technical or pedagogical aspects, they may need to revisit one or the other aspects so that training in each becomes parallel.

Not surprisingly, in terms of teachers needing support, beliefs were expressed that criticized lack of support from administrators and for trouble-shooting. Some of the beliefs emphasize the isolation experienced by teachers and express a frustration with systemic structures. The beliefs suggest that there is a conflict between these structures and the beliefs that support change. Technical support is also highlighted as an essential need without which "teachers lose interest". Other beliefs referred to the pace at which technology changes and how this pace can intensify the need for support and training. These types of beliefs indicate that, while the teachers are willing to change and want to

evolve their practices, they feel held in check by lack of support.

Although beliefs were expressed about the importance of support from administrators and technical support, many of the participants in this study were more concerned about a different type of support that they felt was lacking: that which comes from fellow teachers. Mentoring between teachers was described as needed but lacking. As well, teachers described needing “to fuel the excitement with other teachers” to share enthusiasm and a “sense of adventure and excitement” in order to provide the necessary motivation “to put forth the extra time and effort that Internet projects require”. The issue of motivation was raised in relation to students’ use of OLEs. Yet, these beliefs suggest that motivation can also play a role in teachers’ willingness to use technology. In the case of students, it was noted that they are motivated by use of technology. In the case of teachers, it would appear that they require the motivation in order to use it and that this motivation can come from their colleagues.

The role played by colleagues in influencing teachers’ use of OLEs was expressed in other beliefs. In this sense, what other teachers believe or what teachers believe their colleagues believe is important to them in terms of their willingness to innovate and experiment with new technologies and pedagogies. Some teachers in this study indicated that their beliefs were unlike those of their colleagues. They also implied that their colleagues do not necessarily appreciate or understand the new approach that they are taking in their use of technology. Pajares (1992) reminds us that beliefs serve an important purpose in helping individuals to identify with each another, to form groups and social systems and to share values. An implicit approval or endorsement from colleagues may be necessary for some teachers to feel secure in their use of new technologies and pedagogies. Wide variance among the systems of beliefs of different teachers from within a similar group is not uncommon (Bussis, Chittenden, & Armel, 1976). However, the variance may be a hindering factor in terms of allowing for a change in practices.

Factors that may support and sustain change are also highlighted by teachers’ beliefs. In relation to the issue of training, one participant argued that “...on ne peut pas changer brusquement les mentalités”. This participant also remarked that “A chaque fois

qu'un nouvel outil fait son apparition dans la classe de langues...les mêmes discours messianiques reviennent...". Such beliefs are complex in the sense that, while they recognize the importance of change, they suggest that the power of new technologies to bring about such change is limited. These types of beliefs also suggest that we may be relying too much on the power of technology to bring about change. Others argue that bringing about change through use of technology would involve facing insurmountable obstacles that would involve far more than simply training teachers. One teacher noted in this regard: "If we accept that the majority of education will be conducted by means of the internet, then we're going to have to start from the bottom up, demolishing ivory towers and slaughtering sacred cows on the way." This belief overlooks the fact that, while use of OLEs can assist in bringing about change in practices, this does not mean that all or the majority of education will be conducted via the Internet. Teachers may not have a sense of the role that the Internet or OLEs can play in learning and may be lacking in a vision for where use of such technologies may be heading. Without this understanding of the role and without the vision, training is unlikely to assist teachers to take full advantage of the potential of OLEs.

Teachers appear to hold different beliefs about the kind of training necessary. Many of the beliefs indicated indirectly, that, even if they did receive the training they thought they needed, teachers would still not be able to transform their practices through use of OLEs because they lacked an understanding of the role of OLEs and lacked, as well, any vision for their use. Beliefs about what type of training was required, and how this training should be conducted revealed that there was considerable disagreement but that, also, teachers were perhaps unaware of their own needs and how these needs could best be satisfied. Beliefs in this section remind us as well, that teachers rely on and shape their understandings and beliefs on past practices and experiences.

Anxiety, frustration, fear, insecurity: these are the results of teachers lack of training in, understanding of and support for use of OLEs. However, although training will undoubtedly provide teachers with technical skills needed to manoeuvre in such environments, it will likely not provide them with the sense of security they experience in

the traditional classroom. OLEs are unlikely to provide the consistency, stability and sameness which characterizes the traditional, oftentimes unchanging environment of the classroom. Teaching and learning with OLEs may require teachers to be more intrepid, to need less security and to derive satisfaction from handing over some of the responsibility and control to students. It may require them to accommodate their beliefs and to develop an understanding of and appreciation for the characteristics of online environments particularly those that distinguish them from traditional environments.

Teachers may also need to reconceptualize their role to incorporate that of the teacher-as-learner. The fact that their preservice training and practical experience did not prepare them for online learning may not pose a threat to the teacher who also sees herself as a learner who must constantly explore new approaches, techniques and ideas. Training in use of the Internet in learning can also provide teachers with opportunities to rethink their role and to reflect on learning and the role technology can play. Although teachers may feel that they could make better use of the Internet in their teaching if they had technical training, in many cases, pedagogical training may provide them with a greater amount of security and comfort in working in OLEs.

In the previous section, we encountered beliefs that were in conflict with systemic practices and structures. In this section, once again, we encounter beliefs that are in conflict. In this case, the conflict is between teachers' beliefs and those of colleagues. The disorientation and frustration evident in the clash between teachers' beliefs is evidence of what Woods (1996) refers to as deconstruction of beliefs. Dwyer et al. (1991) argue that "teachers' beliefs may be best modified while they are in the thick of change, taking risks and facing uncertainty". Thus, the frustration and uncertainty experienced and expressed by these teachers may represent a normal part of the process of accommodating one's beliefs to suit the types of learning supported by OLEs.

### **6.3.3 Access and Equipment**

Various researchers have identified lack of access and equipment as representing a challenge to use of OLEs. Singhal (1997) found that busy lines, slow access to

information and technical glitches can lead to frustration. Costs related to training, as well as on-line costs of using a provider are issues that may interfere with implementing technology in schools, especially in schools that have little funding. Singhal also found that rural and inner-city schools, already hard-pressed to provide Internet access, may find it less affordable. In a literature review, Bracewell, et al. (1998) found that classrooms with substantial access to computers linked to the Internet represent the exception. Warschauer (1997b) notes that malfunctioning software and/or hardware as well as unavailable labs may thwart students' and teachers' most well-intended efforts. Honey and Moeller's (1990) study of teachers' thinking related to how and why they use or do not use technology in their teaching observed that a group of teachers whose practices were student-centered would have liked to use computers in their teaching but did not because of either lack of equipment or scheduling problems in the computer lab. Beliefs reported in this section support the findings of these researchers.

Beliefs related to online access revolved around connections being too slow, too expensive (in the case of European participants) or simply, unavailable. Some beliefs indicated a dependence on access at school in order to "prepare lessons" or to use OLEs for the teaching of FSFL. These beliefs suggest that, in some cases, teachers may expect that, if they are going to use technology, the equipment and online time must be provided by the school and not the teacher. Another belief implied that the value of OLEs did not outweigh their usefulness and that, therefore, most teachers would not bother to use them. All these beliefs point to the fact, that for early users or new users of OLEs, school's provision of equipment to teachers may be a determining factor in their use. This need may not be as prevalent as teachers become more accustomed to using the technology.

Issues related to reliability of equipment and of access appear to be very important to teachers. Teachers noted that they did not have enough computers "in working order", that "all sorts of things go wrong", and that "half the time, all the computers are not up and running". These beliefs may relate to a low tolerance for unpredictable occurrences and a need for certainty and security in the teaching process. Teachers also described frustrations with sites being "overloaded" particularly when they had prepared lessons

requiring all students to access the same site at one time. Others resorted to use of “webwhacking programs ....to simulate web navigation of one site” and to allow more control over access to sites. Pedagogies that emphasize whole group instruction and that would, for example, require use of the same site by all students, may indeed result in more frustrations for the teacher. Some sites or servers may not be designed to provide simultaneous access to a large number of users and may “crash” thus thwarting the well-intentioned and well-prepared efforts of the teacher. In some cases, online technologies may actually work against some whole group techniques. Beliefs that favour an approach which ensures each student is on the same page at the same time may not be well supported by OLEs.

Teachers may also be frustrated if they favour having students work individually or in isolation. Backer (1995) noted that a problem with CALL was its underlying “assumption that one student would work at each computerized work station”. This assumption required “computer hardware well beyond the financial means of most language learning facilities”. Furthermore, it resulted in the physical and psychological isolation of students (Ibid.). A belief expressed frequently by some participants in this study was that one computer per child was required for effective use of OLEs. Such beliefs suggest that teachers may be privileging a pedagogy that does not emphasize collaboration, group work or knowledge sharing. Using a student-centered approach, groups of students could be involved in different activities, some working in groups around a computer while others work in groups around a table all the while with the teacher circulating from group to group.

In order for teachers to use an approach whereby students work one at a time on individual computers they require a computer lab. Some participants in this study described lab access as being “critical”. One teacher noted that “....it is unrealistic to think you can get twenty-five kids through a project without a computer lab...” If teachers believe, like this teacher, that a computer lab with one student per computer is a prerequisite to project-based approaches to online learning, then few are likely to adopt such an approach since, as researchers at the beginning of this section indicated, few

schools are equipped in this way. Furthermore, such beliefs may reinforce and give credibility to approaches that encourage students to work independently and not collaboratively. Many teachers described having labs in their schools but felt frustrated by the fact that language courses did not have access to them. Language classes are described as being “low on the priority pole” with preference being given to “business, math & tech ed.”. These beliefs were also articulated by Singhal (1997) who concluded that, for the most part, computers in schools are used for business or computer science courses. Although use of computer labs may not be a prerequisite to effective use of OLEs, if, indeed, these labs are generally not available to language classes, teachers’ beliefs may be influenced. It is possible that institutional practices which favour use of labs by business, math and science classes may reinforce those beliefs that do not associate use of OLEs with learning languages and, thus, teachers may be less likely to see a value in their use.

In their ACOT study of computer use by teachers, Dwyer et al. (1992) identified five developmental phases through which their research subjects passed as their beliefs and practices evolve from a traditional, text-based curriculum to more constructivist approaches. Their initial stage, the entry stage, provides some explanation for the beliefs reported in this section. This initial stage, which involves rewiring and rearrangement of classrooms is characterized by problems related to resource management, personal frustration and preoccupations with the technology itself. As teachers progress in their use of technology, they begin to focus more on issues related to instruction and learning.

In the following section, the challenges identified by teachers relate, not to teachers, but to students. Ironically, the concern in this section instead of being with lack of access, is with too much access. Teachers’ beliefs about controlling students in the vast, boundless, open, uncensored world of the Internet leads some to conclude that they would prefer to limit students’ access.

#### **6.3.4 Control and Monitoring**

Traditionally, in language learning the teacher has occupied a central role. Often,

she served as the only language model for the students. In the case of the Audio-Lingual Method, teachers needed to be in control in order to correct mistakes and to ensure that students used correct forms. Thus, teachers provided the structures that students used and students were expected to use these structures only. Although the emphasis on control shifted more towards the student in Communicative Language Teaching, nonetheless, there persisted a tendency on the part of many language teachers to exert a certain control, if only by carefully assuring that the language to which students were exposed passed or filtered first through them.

It is not surprising then, given the legacy of the Audio-Lingual Method that many beliefs expressed in the context of this study reflected a need to control, monitor and filter language content. One teacher lamented the fact that when her students use the Internet she does not “have control over what vocabulary is used or the complexity of the grammar structures”. However, beliefs expressed by teachers in this study suggest that the challenges teachers appear to face in relation to OLEs and control relate, not only to language content, but to broader and more complex factors. Some beliefs related to the need for teachers to monitor students in order to prevent them from accessing “inappropriate” or “adult-level” sites. Whether students are “going into areas where they should not” or simply stumbling onto sites “quite innocently”, leads many teachers to question what their role or reaction should be. While some teachers perceived their role as one in which they must help students “make appropriate choices”, and “be responsible ‘cybernautes’” and “continue to monitor” others believe they must “set up clear guidelines and consequences for online behaviour”. Some teachers explained how they controlled access to sites through preparation, preplanning, guided searches, previewing and testing of sites and having objectives for sites. Still others believe that it is through “un véritable travail pédagogique” that we can ensure proper use of OLEs by students.

This diversity of solutions to the problem perceived by teachers points first to the fact that it is an issue about which they are uncertain and uneasy and, secondly, to the fact that they are faced with the characteristic of OLEs that contrasts more than perhaps any other with the learning environment of the classroom. Newhagen and Rafaeli, (1996)

described how the Internet treats censorship as noise and is designed to work against it. The physical and institutional structures ensure that the classroom is bounded, not only by four walls, but by the structures, rules, procedures, schedules and a strictly controlled and prescribed curriculum. Becker (1991) argues that use of technology “will require teachers and administrators to modify their concepts of appropriate and inappropriate teaching behaviours, to reprioritize the value of different types of instructional content, and to change habits and assumptions that guide their classroom and school management strategies” (p.8). Teachers’ beliefs related to control and monitoring suggest that they have not come to terms with the differences between these two environments. The beliefs suggest that, while teachers may welcome technology’s ability to simulate reality, they may be wary or unaccepting of its ability to generate reality.

Teachers’ beliefs about control and monitoring can also relate to beliefs about time and the curriculum. In terms of the curriculum, the problem with the lack of control over which sites students access may relate to teachers’ belief that what they do in the classroom should conform to the prescribed curriculum. Thus, the site should be preferably didactic in nature, relate to course objectives, provide evaluation and support the goals set forth by the teacher. Beliefs such as: “It is wonderful to let a student go and discover what s/he may and watch the excitement. But how do you grade that?” point to concerns about reconciling the demands of the curriculum, on one hand, and the needs of the learner, on the other. The legacy of the Direct Method’s insistence on use of the target language, may influence teachers’ beliefs that they must spend time monitoring sites and students’ activity, otherwise “kids will go to English sites and translate later”.

Teachers may also wish to monitor to ensure that students are on the site which the teacher has chosen and on which the other students are expected to be. The Cognition and Technology Group at Vanderbilt (1996) observed about the traditional classroom that students are taught the same thing at the same time. In the traditional classroom, teachers can ensure with some ease that this is indeed the case. Students can all turn to the one page at the one time. However, in OLEs, not only is the temptation there for students to choose their own destination, but the facility to accomplish this is there as well.

In terms of the relationship between time and control, beliefs centre around the need to ensure that students are monitored and controlled so that time is not wasted and so that students remain focused on the site or task assigned by the teacher. The issue of time effects beliefs about control and vice versa. To ensure that students are on task and using the sites that teachers deem suitable or appropriate, teachers must spend considerable time, testing, previewing, and preplanning. Given that time is limited and somewhat rationed in the school setting, the belief in the need to preview sites or extensively plan will result in considerable loss of time for the teacher no doubt resulting in frustration. Concerns that students will “sneak in” their own sites, or that they might discuss topics on chat lines over which the teacher has little control and thus “waste time” highlight our attention on the importance of recognizing students’ goals. Ensuring that students are on task may not be accomplished easily through increased control but, instead, through a transfer of control from teacher to student whereby the student is given an opportunity to help determine the path for learning. Williams and Burden (1997) remind us that learners learn in ways that are meaningful to them which means that teachers will need to allow for individual preferences and personalities. They also remind us that learners learn better if they feel in control of what they are learning.

Beliefs related to control and monitoring have been noted in other studies and literature. Singhal (1997) in her identification of challenges related to use of the Internet for teaching languages, argues that censorship may be a concern to language programs and instructors given that the Internet offers access to all types of issues and topics, some of which are unsuitable for children. Calderhead (1996) observed that preservice teachers start with control-oriented belief systems that emphasize the importance of maintaining order, good discipline and guiding the activities of the children and that when teachers enter full-time teaching, they once again revert to a control-oriented belief system. Honey and Moeller (1990), in their study of computer use among teachers, found that teachers who used more traditional classroom practices feared that technology might “alter their relationship of control and authority with their students”. Stuebing et al. (1994) focused more specifically on the role that the physical environment plays in bringing about change

in teachers' practices and noted that the traditional model of school organization emphasizes student control and teacher-centred didactic approaches to teaching and learning. The beliefs identified in this section support the findings and conclusions of these authors.

In summary, teachers' beliefs about control and monitoring may relate to more fundamental beliefs about the teacher's role, students' role and about learning in general. How learning is both conceptualized and organized, how goals are set and paths are determined will likely influence teachers' acceptance or rejection of the nature of OLEs. In a project- or theme-based approach in which students have determined the path for learning and set their goals, external control is replaced by intrinsic control, and monitoring is replaced by guidance. These beliefs also point to an expectation that OLEs can or should provide boundaries similar to those which would exist in TLEs. Control and monitoring will no doubt represent one of the most difficult issues with which teachers will have to grapple with as they begin working in online environments.

The following section focuses on teachers' beliefs about students and use of OLEs. This section will help us better understand where efforts might begin to ensure that teachers allow students to adopt a role that accommodates learning in OLEs.

### **6.3.5 Students**

The vision of learning for the 21<sup>st</sup> century as espoused by this study allows for a central role for the learner. Instead of the role of the passive responder, the learner in this vision is an active constructor of knowledge who sets goals and paths for learning. Correspondingly, the teacher's role is more of a supportive one. Concomitant with this new role is the student's responsibility to ensure that these goals are met and that the paths are indeed those required. Learning activities do not favour transmission of knowledge, but, exploration, investigation, enquiry, collaboration. This new paradigm for learning with its shift in roles contrasts profoundly with past approaches. Thus, it is not surprising that many beliefs were expressed which relate to students' resistance to this new paradigm and to the changes that it entails.

In previous sections of this chapter, we encountered situations where a teacher's beliefs were in conflict with educational conventions and systemic practices. We also encountered situations where teachers' beliefs were contrary to or in conflict with other teachers' beliefs. The beliefs expressed about students' resistance to the new paradigms for learning reflect a conflict between teachers' beliefs about learning on one hand and their perception of students' beliefs on the other. Conflict was expressed in comments such as "...the students don't want to change, or get used to a new idea"; "They want to be able to take notes, memorize rules, and pass the exam based on those criteria.". The beliefs about the need for students to change and their resistance to the new approaches and new ways of learning suggest that these teachers are willing to or interested in transforming their learning practices. However, the conflict may mean that these beliefs will not translate into practice. The following comment demonstrates one way in which teachers' beliefs about students can affect their practices: "I would like to be more of the facilitator but my students are not used to teachers being in that kind of a role." These beliefs are consistent with the findings of Taylor (1990) in his study of the influence of teacher beliefs on constructivist teaching practices. The author observed that "although the teacher professed a belief in a more decentralized classroom role for himself, he continued to believe that student expectations of a centralized teacher role provided a major obstacle" (p.19).

Other beliefs about students relate less to their reaction to the learning process and more to computers and the technology. These beliefs resemble those found by Hannafin and Savenye (1993) who noted that teachers felt a certain resentment towards the computer which is perceived as a competitor for students' attention. Resentment towards the computer is reflected in beliefs which refer to the "compulsive and obsessive manner" of students as they use the computer or those which express concerns about having to compete for their attention while they are using computers. These types of beliefs also point to a difference between students' goals and those of the teacher. Beliefs such as the following also suggest that some teachers may question the validity of computer use by children as well as the long-term effects computer use may have on children: "Many

students who have computers at home spend too much time 'playing computer'. They don't know how to socialize & how to play when placed in a situation that requires inventing a game or finding a way to occupy themselves." In some cases, these types of beliefs may underlie a mistrust of the ability of computers to provide a valid type of learning experience. For example, one teacher dismissed any learning value in online dictionaries noting that: "As for babelfish and others like it, it is a literal translation tool that serves only to amuse, not to educate." Teachers may have a set of beliefs or conception of what constitutes learning. If this conception places teachers in the central role, emphasizes knowledge transmission and sees the text-book as the primary resource, it is unlikely to accord much value to computers and OLEs except in a very peripheral role such as an add-on or for enrichment. If anything, this conception of learning will see computers as a competitor, an obstacle to learning, as a source of entertainment, and as something that compromises the primacy of reading and writing and which ultimately threatens traditional educational values.

Teachers also expressed beliefs about how students are inclined to do research when using OLEs. One teacher described it as "...less thorough than research from the bookshelf" and argued that students understand little using this approach. Yet, this teacher also reflected on her own beliefs when she added that "the process has probably given rise to quite a different way of "knowing"..." This reference to a "way of knowing" suggests a growing awareness of new approaches to enquiry, investigation and learning. Other beliefs reveal teachers' lack of comfort with and understanding of new ways of knowing and of enquiry. Beliefs of this nature criticize students' dependence on and "automatic reaction" to using the Internet for research. These beliefs also reflect a concern that Internet research is competing with traditional ways of researching and that it may not be as valid as other sources.

Other beliefs related to students and to researching focus on concerns about whether students have the skills to search effectively. Teachers remarked about students that they "... know little about moving around in internet sites..." and that they "have had difficulty finding appropriate sites", that "their searches turned up thousands of websites,

and they couldn't understand the site descriptions enough to decide if they should look at a certain site or not". These beliefs about students' lack of skill at searching support the conclusions of Garret (1991) who argues that we still know little about students' experiences of browsing in large databases. Like some of the teachers in this study, Garret questions what happens if students get lost, whether they know what they need to look for and if they learn as much from browsing, in what might seem to us an inefficient or purposeless way, as from directed exploration. These questions, as well as the beliefs in this section, reveal our lack of understanding and knowledge about online searching. However, we must be mindful of the fact that online searching will need to differ from its counterpart of searching through print materials. The Internet is by nature unorganized, decentralized and vast. It is through our effective use of strategies and skills that we can impose an order on it. Warschauer (1997b) posits that Internet activities can result in various complexities that may not occur in the traditional classroom and that students may not necessarily have the prerequisite computer skills necessary for success. Beliefs in this section suggest that many teachers and their students have not developed approaches or skills to assist them in their efforts at searching.

More specifically in relation to use of OLEs in the teaching of FSFL are beliefs that highlight the challenges related to language skills. Teachers expressed beliefs about students' preference for use of English while researching online. Teachers' preoccupation with students' exclusive use of French may discourage them from permitting students to use OLEs for research. Teachers may also be reluctant to encourage students to search online in French if they believe that they are not capable of coping linguistically. Beliefs reported in this study suggest that many teachers have concerns that the reading and vocabulary levels are "far above the ability level" of students or that their "limited experience in reading French", in the case of elementary students, would require use of simple online activities. Similar beliefs were expressed regarding primary students. These beliefs remind us how certain fundamental or core beliefs about, for example reading, can influence teachers' beliefs about the value of online learning. Teachers' beliefs about reading and literacy development will shape their perception of the value of OLEs. If they

believe that reading is a process of constructing meaning, then they will likely value use of authentic literature. If they believe that reading involves instead decoding, they may focus on the development of subskills and rules, and they may be unlikely to value use of OLEs. Strategies for use of online authentic materials could be incorporated into pre- and in-service training programs in order to assist teachers and students in adapting to some of the conditions and circumstances of OLEs.

Teachers' beliefs about students' technical ability to use computers will also influence their beliefs about the value of OLEs. Some participants in this study argued that, in terms of using the computer, students "are afraid they will break it" or that "students who have no access at home are sometimes intimidated by the technology & hesitant to use it". If teachers view the learning process as an opportunity to allow students to build on what they know already, then students' lack of computer skills can become, not an obstacle, but instead, a starting point or baseline from which teachers can begin to provide support and scaffolding for further learning.

Teachers' beliefs about students can be pivotal in terms of their ability to capitalize on use of OLEs. In this section, different types of beliefs relating to students were identified and described. Some of these beliefs reflected an appreciation for new paradigms for learning and for a transformation of practices. However, these beliefs presented themselves in conflict with the beliefs of students. Another type of belief presented in this section highlighted a lack of appreciation for or understanding of the way in which students relate to or are affected by OLEs. These beliefs expressed a lack of comfort with, and resentment for the computer, and dismissed its pedagogical value.

Students' lack of prerequisite linguistic, navigation or technical skills necessary for use of OLEs provide the focus for another group of beliefs identified in this section. These beliefs contrast with those that view learning as a process of constructing knowledge and meaning and of taking learners from where they are to help them build on knowledge and understandings. One teacher's beliefs about "ways of knowing" reflects an awareness not evident in other beliefs. Few teachers made direct reference to epistemological issues in the context of this study. However, in order to appreciate and

value online learning, teachers may need to become familiar with epistemological issues and understand how they relate to learning.

As beliefs in this section have shown, how the teacher conceives knowledge, learning and the learner will influence significantly all other beliefs. As the next section will illustrate, the teacher's conception of OLEs themselves may also affect other beliefs and determine whether teachers can evolve their practices through use of technology.

### **6.3.6 Online Learning Environments**

OLEs are relatively new on the educational scene. Thus beliefs reported in this study represent teachers' reaction to this phenomenon at a very early stage in its introduction to schools. We can anticipate that, in the future, these beliefs will evolve as OLEs become more common in schools. For now, however, teachers' beliefs are more likely to rely and draw on impressions, preliminary experiences and on comparisons with the past uses of technology. While we cannot be sure how a given teacher has developed her beliefs about OLEs, one thing about which we can be more certain is that what teachers believe about OLEs or the way in which they conceive them will determine the uses they make of them.

In terms of how we conceive of OLEs or the Internet, many metaphors have evolved: the information highway, the web, global community, global marketplace etc. A metaphor evident in some of the beliefs collected in this study is that of the book, encyclopedia, "another source of realia" or an "immense bibliothèque mondiale". The difference is that the format is digitized, more voluminous and diversified. Conceived in this way, OLEs do not have the potential to transform the learning process because they are simply improving on the primary resource of TLEs - that of the book. Teachers can continue to teach in the same way but with new and improved resources. Those who expressed the belief that books are more helpful or that OLEs provide nothing more than text in a more readily available format or that the information provided online is not conveniently accessible may not be willing to explore the potential of OLEs. More importantly, if the teacher conceives of OLEs as nothing more than a digitized book then

she may conclude, as did one teacher in this study, that we are “wasting our time on the emperor’s new clothes”.

Teachers’ beliefs related to OLEs also focused significantly on issues related to information. Reference was made to the quantity and quality of the information. In terms of the quantity of information, teachers described suffering from “information overload”, and being overwhelmed from there being “too much info to access”. In terms of the quality, teachers made reference to the fact that “there is a lot of garbage on the net”, that they were “leery of the accuracy of the information”, that there were “peu d’informations fiables” and that they disliked the “commercial aspect”. Challenges with accessing information were also highlighted in teachers’ beliefs with concerns being expressed about the time required to access information, the fact that the information is changing constantly, and that their searches often sent them on “useless tangents”. Finally, beliefs about information available through OLEs focused on the fact that: “The Internet provides information but it does not teach a students (sic) how to use this information”.

In TLEs, information is often parceled in discreet chunks, pre-interpreted, carefully controlled and designed for a particular audience. The flow of information is often through transmission from teacher to student who is responsible for absorption, internalization and/or memorization. By contrast, in online learning environments, information is not necessarily preorganized or preselected. Its real-world characteristics mean that it may be complex, constantly changing, and designed for any number of different audiences. Most importantly, it is not always structured or organized in any way that would necessarily make it didactic. In terms of the flow of information, students interact directly with these materials rather than with the teacher’s interpretation and analysis of them. Such information is useful, not for a transmission-absorption mode of instruction but, more so, for individual and collaborative knowledge construction. Those accustomed and trained to transmit didactically-organized materials may not have the skills or strategies necessary to locate online information effectively nor may they necessarily be aware of how to help their students process this information and construct knowledge with it. If their conception of learning emphasizes transmission, depends on a central role for

the teacher along with use of didactically organized materials, they will not likely encounter support for such practices in OLES.

Hannafin and Savenye (1993) argue that what may be observed as a resistance to using computers may not be a resistance to technology per se. It may be an uneasiness with the change in the way knowledge and learning are defined: there is no 'absolute' knowledge, there may be more than one correct answer and knowledge does not exist in discrete chunks that can be transplanted from the teacher's head to the learner's. One teacher's beliefs on this subject recognized this conflict faced by teachers when she commented that: "This is why giving students information by presenting them the answer is not giving them knowledge. Students must be coached to develop some higher-order thinking skills to process information and to create knowledge of their own".

The reading approach in the teaching of second languages advocated in an early part of the 20<sup>th</sup> century in the United States emphasized comprehension of texts from books with short reading passages with vocabulary lists. Such an approach has no doubt left a certain legacy in modern-day language classrooms where teachers may continue to rely on such types of reading materials for their students. These reading materials are graded with carefully chosen and controlled vocabulary selections designed for specific levels of language learners. It is not surprising then that many teachers expressed the belief that, in terms of online materials, the "level is too difficult" that sites are not suitable for students' "curricular needs" or that sites "are written for francophone kids and the reading level is usually still quite difficult" or that sites are not "kid-friendly". The challenge faced by teachers in this case may relate less to the difficulty of the language and more to the difficulty of adjusting to the demands of working with authentic materials that are not didactically prepared. Use of authentic materials constitutes an important principle of constructivism and is also a basic tenet of Communicative Language Teaching. Nonetheless, teachers may lack specific training in working extensively with authentic online materials.

The primacy accorded to reading in the teaching of FSFL during the early part of the century resulted in somewhat of a backlash in later theories and methods which shifted

the focus in language learning on the notion of meaningful communication. Instead of reading and writing, the development of speaking and listening skills became the new goals of language learning. This emphasis on communication in second-language education would have no doubt influenced the beliefs of participants in this study who described the Internet as having “no real value to the teaching of core French since it would not facilitate learning in speaking and listening” or who commented that “oral skills take a back seat to reading”. While there do exist online tools to facilitate speaking and listening, many users in school settings may not have access to these tools. It is likely in recognition of this reality that one participant concluded: “Maybe some day, speaking and listening will be as integral to web sites as text and graphics. When that day comes, the Internet will truly be the language learner’s dream”.

Beliefs in the importance of communication may be supported by use of OLEs in spite of the fact that they may not provide the necessary support for the development of speaking and listening skills. In fact, one of the prime uses of the Internet is for communication. Through use of e-mail and chat rooms, Internet users can communicate and interact without the restrictions and constraints of time and place. Online communication relies on the skills of reading and writing but these skills are deployed, not as ends in themselves, not for purely didactic purposes, but for exchanging ideas, sharing knowledge, collaborating and questioning. Instead of the passive skills of reading and writing which we traditionally associate with classroom book learning, online reading and writing for communicative purposes become meaningful acts of expression and production - acts which we would normally only associate with listening and speaking.

Teachers’ beliefs such as “The Internet does not develop interaction between students” overlook one of the most essential and important benefits that OLEs offer to learning - that of opportunities for meaningful communication and interaction. One teacher argued that chat rooms “served little purpose” because, in her experience, “the content was superficial”. In terms of the communication that occurs between students, teachers may also need to reevaluate what constitutes meaningful and purposeful communication. In this regard, teachers may need to be more conscious of the dichotomy that can often exist

between students' goals on one hand and those of teachers on the other.

Understanding what OLEs offer students in particular and learning in general may prove ultimately to be a starting point for shifting other beliefs. Teachers may need to be made aware of ways in which OLEs can support their efforts as second-language teachers. Otherwise, they may conclude as did some teachers in this study that “the net is an underestimated time eater and an overrated motivator”, “a free for all” or “just another teaching tool”. Teachers may also need to be made aware of the difference between OLEs and previous generations of computer equipment in order to appreciate their value as a generator of reality unlike many of the technologies which preceded the Internet and which simply served as teaching machines. Beliefs were expressed in this section that machines of today are no different than those of the past and that they have the same limitations. Indeed, today's machines will do no more than those of yesteryears unless there is recognition of and appreciation for their potential to generate reality and provide access to the real world.

### **6.3.7 Summary**

Beliefs related to the challenges of using OLEs for the teaching and learning of FSFL take on many forms. To effectuate a change in beliefs so that they might reflect an approach to the teaching of FSFL that may be supported by OLEs would require changes at a number of levels and not only with the teacher. As Taylor (1990) concluded, effectively implementing constructivist reforms in the classroom requires a change in the teacher's epistemological beliefs through a process of self-negotiation of beliefs. However, social negotiation with teachers, students and the larger school community may also be required in order to reconcile the seemingly incompatible beliefs of the teacher, on one hand, and those of other teachers, students and the larger school community as represented in the curriculum and systemic conventions and school-wide practices.

Honey and Moeller (1990) concluded in their study that, for teachers whose educational beliefs and practices are traditional, there exist different and much more complicated barriers for technology integration. In order to integrate technology into their

curricula, the very nature of their practices would have to change. However, the authors concluded, in order to bring about this change, different layers of the educational system would also have to change. In this sense, students as well may need to adapt some of their own beliefs. Teachers who are willing to accommodate their beliefs but experience conflict with the beliefs of their colleagues would need encouragement and support to translate their beliefs into a change in practices.

Woods (1996) reminds us that, because each belief is part of an interwoven network which includes many other beliefs, teachers cannot simply at will 'change' one belief by itself. Instead, changing one set of beliefs will often require a change in related sets of beliefs. As this section has shown, many of the beliefs about use of OLEs are intimately related to beliefs about learning. Beliefs about learning relate to a multitude of issues such as roles of the student and teacher, issues of control and conceptions of the curriculum. A change in one belief will often not be accomplished without a concomitant change in other beliefs. Thus, changing teachers' beliefs may require a holistic understanding of a teacher's entire belief system. As well, it may necessitate an understanding of the beliefs on which the system in which the individual works is based. Finally, how this teacher's beliefs relate to those of other teachers and to students' beliefs may need to be taken into consideration.

#### **6.4 Conclusion**

The aim of this chapter was to interpret the findings and to explore responses to research question 2 of this study which is: What do these beliefs reflect in terms of the evolution of approaches and use of technology in the teaching of FSFL? In terms of the first category of beliefs related to the advantages of use of OLEs, many, but not all of the beliefs, reflected aspects of the vision for learning in the 21<sup>st</sup> century. Many of these beliefs also reflected aspects of CLT. Beliefs focused on the value of authentic materials, the importance of accommodating a variety of learning styles and the need for meaningful and purposeful communication and collaboration. Real-world learning and intrinsic motivation through learner-centered goals and paths for learning provided the focus for

other beliefs reported in this section. Changing patterns of interaction with the teacher in the role of the facilitator who assists students in the development of higher-order thinking skills are also characteristic of some of the beliefs related to the advantages of using OLEs. Finally, recognition of the need to change, to transform practices and beliefs and to question established ways of doing things were common elements in the beliefs of teachers.

In the category of beliefs related to the challenges to use of OLEs, the beliefs reflected aspects of earlier approaches to the teaching of FSFL such as the Direct Method and the Audio-Lingual Method and often did not reflect aspects of the vision espoused by this study. Some beliefs centered around the need for more time, training, support and equipment. Others expressed a distrust of technology to provide appropriate learning experiences and a lack appreciation of the role that OLEs can play in learning. In terms of the evolution of approaches and of use of technology in the teaching of FSFL, the two main categories of advantages and challenges reveal that beliefs reflect a wide range of approaches and philosophies. Some of the beliefs also reflect a criticism of past practices and a newfound awareness of the potential of new approaches, philosophies and the new environments for learning. Some of the beliefs expressed a dissatisfaction and frustration with use of OLEs. Other beliefs reflected a transition characterized by conflict. As teachers attempt to evolve their beliefs they are encountering obstacles in the form of the beliefs of others or beliefs of the system.

The implication of these beliefs for educational practice will be considered in the following chapter. Issues related to the methodology will also be discussed. Understanding what we can conclude from these beliefs involves taking the analysis one step further. Once we understand the implications, we can use the findings of this study to make recommendations for educational practice and for further research.

## **Chapter 7**

### **The Teacher as Explorer:**

### **Conclusion**

We shall not cease from exploration and the end of all our exploring  
will be to arrive where we started and know the place for the first time.  
T.S. Eliot (1974)

#### **7.1 Introduction**

One version of *Vendredi ou les limbes du Pacifique*, describes Crusoe's attempts to rediscover his island (Tournier, 1978). Crusoe returns to Holland after many years of exile on the island of Speranza. He reestablishes himself there but, even after some decades, longs to return to Speranza. He embarks on a journey across the ocean in search of his island. After many attempts, and in spite of all efforts, he cannot find the island and thus abandons hope of ever again setting foot on Speranza. He returns therefore once again to Holland. In conversation with a friend, he understands why he could not find the island. Like Crusoe, the island had aged and changed over the years. He was looking for the image of the island he remembered from many years ago. That image no longer existed. Crusoe returns once again across the ocean in search of the island. This time, he forces himself to alter his perception and he finds his island. He settles there, content to live out his days until his death.

The lesson to be learned from Crusoe's experiences is an appropriate and useful one and comes at a time when it has considerable meaning for education. Crusoe's search for the island was a difficult one because he had overlooked the fact that the island had changed. Yet, Crusoe himself had changed for, he too, like the island, had aged. What this experience reveals is the way that change works and how, just as one's environment changes, so too do the individuals in the environment because they form an integral part of it. By analogy, we can apply this understanding of change to education. Change affects all aspects of the learning environment including those who are a part of it. Change is a process of adaption and of accommodation whereby the learning environment and

those who form part of it interact, affect each other and change together.

Traditional learning environments have provided considerable stability to teachers. They are predictable and relatively immune to perturbation, to change and even to outside influences. In contrast, OLEs represent radically different environments that often challenge traditional ways of learning and of knowing. As the beliefs in this study have shown, for some teachers, their encounters with OLEs have resulted in experiences that have suited their beliefs or that have encouraged them to change and shift their beliefs in order to accommodate the new environments. For these individuals, the environments for learning represent strange or even brave new lands which they have been able to approach with a sense of adventure and discovery. They have found support for their beliefs in the new online learning environments and have been able to define new maps, chart new directions, explore new possibilities, change along with the environment and adapt to it.

This study has profiled the beliefs of a broad selection of teachers. It has also attempted to understand how these beliefs reflect the evolution of teaching and use of technology. What conclusions can be drawn from these findings and what are the implications for educational practice and for educational research? The pages that follow explore this question. Understanding the implications can provide insight for teacher education programs, for professional development sessions and for researchers. Ultimately, the understanding of beliefs in this study can assist in the process of bringing about positive change in teaching and learning. This chapter will also look at further directions for research and suggestions will be made for refinement of this study's research methodology.

## **7.2 Conclusions**

The findings of this study explored responses to two research questions. Chapter 5 presented a description of the beliefs uncovered in this study. Chapter 6 presented an interpretation of these beliefs. This chapter takes the analysis of the findings one step further and presents the dominant themes identified from the findings. These themes are

as follows: converging beliefs; beliefs and challenges; beliefs and compatibility; conflicting beliefs; changing beliefs. The theme of converging beliefs considers the relationship or convergence between the official theories related to language learning on one hand and the implicit theories or beliefs of teachers on the other. The second theme considers the findings of this study which suggest that there are beliefs particular to FSFL that present certain challenges to effective use of OLEs. The theme of beliefs and compatibility considers how certain beliefs about computers are more compatible with particular uses of the computer. As its name suggests, the theme of conflicting beliefs describes the different dimensions of conflict between beliefs uncovered in this study. Finally, the theme of changing beliefs focuses on the ways in which the beliefs articulated in the course of this study appear to be evolving or changing.

### **7.2.1 Converging Beliefs**

We can assume that teachers' implicit theories or beliefs are affected by official theories i.e. that there is a certain convergence between the two. Thus, we can assume as well that official theories have an important role to play in evolving teachers' implicit theories. In terms of the evolution of approaches and of technology use in the teaching of FSFL, some of the beliefs that were uncovered in this study reflected earlier stages in the evolution, while others reflected stages that corresponded to the vision of language learning outlined by this study. Some beliefs reflected principles of CLT which parallel the principles of constructivism. Others reflected the principles of the Direct Method or of Audio-Lingualism which are based on a behaviourist philosophy. Whether the beliefs reflect a constructivist or a behaviourist philosophy may well determine how individuals conceive of OLEs, how they perceive their value in teaching and learning and, ultimately, the uses they make of them. How the teacher conceptualizes her role, learning and knowledge will determine whether OLEs will be able to provide support for her beliefs.

However, the difficulty inherent in any attempts to evolve the beliefs of teachers of FSFL through theories or philosophies of learning is that, traditionally, constructivist epistemology and philosophy have not figured prominently in second-language pedagogy

which has been preoccupied instead with discussions and debates about methods and approaches. Earlier sections of this study made references to the influences on teachers' methods or practices. Stern (1983) argues that changes in methods reflect social, economic, political, or educational circumstances as well as changes in language and psychological theories. At the same time, he posits that to evolve and improve language teaching, what is needed is, not a method or approach, but a more deliberate interpretation of language teaching in terms of educational theory. Theory, explains Stern "is implicit in the practice of language teaching" and underlies practice, planning, routines, value judgements and day-to-day decision making (Ibid., p. 23). In spite of the theorizing that may have taken place, as Stern notes, much of this has not been very productive. In fact, argues Stern, "...highly relevant developments in general educational theory have been completely overlooked by language pedagogy" (p. 519). Audio-Lingualism and the Direct Method both had firm roots in behaviourism. CLT broke with this tradition and reflected a more student-centered humanistic philosophy but lacked any firm footing in a philosophy that could provide a foundation or explanation for its tenants. The lack of an adequate theory to underlie language teaching led Stern to lament on the resulting state of language teaching: "The rapid turnover of ideas on language teaching, the long history of the method battles, the so-called discoveries and 'breakthroughs' and the subsequent disenchantment, all form a sad but telling cavalcade of theorizing through the ages" (p.24).

It might be argued by some that CLT with its emphasis on authentic materials, meaningful and purposeful contexts for learning and the teacher as facilitator provides the basis needed for the teaching of FSFL. However, CLT is not a theory. It has its roots in a humanistic philosophy but this philosophy is not adequate in terms of providing an epistemological framework or even in terms of providing an adequate conception of learning. It does not provide answers to fundamental questions related to learning such as: What is knowledge? How do learners come to know what they know? An understanding of and appreciation for knowledge construction, knowledge sharing and for the social-negotiation of knowledge can help teachers appreciate the types of learning

that can be best supported in OLEs. In the sub-category of beliefs related to resources and information, teachers expressed their appreciation for the value of OLEs to provide them with authentic materials. Use of authentic materials in the context of knowledge construction and sharing reflects the vision of learning espoused by this study and is consistent with the principles of constructivist learning. Yet Communicative Language Teaching does not rely on the principles of knowledge construction or sharing. Instead, it is essentially premised on the concept of communication which is meant to drive all activities and approaches. Thus, beliefs which reflect CLT such as the importance of authentic materials do not necessarily reflect those that will be supported by learning in OLEs.

Ultimately, effective use of OLEs for the teaching of FSFL may come only once theories of language learning and teaching begin to reflect principles of constructivism. If we think in terms of a hierarchy of beliefs, in terms of beliefs that are core and others that are secondary or more peripheral, we would need to begin with the most fundamental beliefs which would be epistemological ones. What teachers believe about knowledge and knowing will significantly affect other beliefs related to teaching and learning. The belief that knowledge is like a commodity or object that is given to us by others (such as by teachers) would be replaced by the belief that knowledge is individually and socially constructed and negotiated in a process of interaction with one's environment. Teaching as telling and as knowledge transmission would be replaced by teaching as a facilitative and collaborative intervention designed to support the learner. Learning as the product of being told, absorbing and remembering would be replaced by learning as an active process of making sense of one's environment through knowledge construction, interpretation, negotiation, and sharing.

Professional development that aims to provide teachers with technical skills has a role to play in getting teachers comfortable with the technology. However, technical skills alone will likely leave teachers ill-equipped to teach in OLEs. Even training in navigation skills and effective searching techniques or providing them with suggestions for activities and sites will give them little more than a false sense of security that can

result in little more than old wine in new bottles. Senge (1995) argues that “We do not describe the world we see; we see the world we can describe”. In this sense, language theory founded in current theories of learning could provide teachers with a foundation on which to build their own professional theories. Knowledge construction, knowledge collaboration, learner control, interdisciplinary learning, meta-cognition, real-world learning, situated learning: these represent but few of the concepts so important to constructivism. To assist in the evolution of beliefs, current theories of second and foreign language teaching could provide teachers with an understanding of how some of these concepts relate to the process of language learning.

### **7.2.2 Beliefs and Challenges**

Ultimately, what teachers believe about learning will influence their reaction to OLEs. These beliefs about learning will affect teachers in all subject domains and not only in the areas of FSFL. However, the findings of this study suggest that there are beliefs particular to FSFL which present certain challenges to effective use of OLEs. These beliefs relate to the prevalence of the English language on the Internet. Online, students have access to materials in both French and English. However, they often have access to more English sites than to French ones and the English sites are more easily accessed by them than are the French ones. This dominance of English on the Internet appears to result in beliefs that may discourage some teachers from using OLEs.

The type of beliefs that may present a challenge are:

1. The Internet is dominated by the English language. (e.g. There are not enough French sites for students to use);
2. Students prefer to access sites in their native tongue. (e.g. Teachers have to spend considerable time monitoring and controlling to ensure that students use only French sites because they try to sneak in English sites);
3. The level of French in OLEs is too difficult. (e.g. Students do not have the word recognition skills or the necessary vocabulary to take advantage of sites);

4. Learning language skills and computer skills simultaneously is unproductive. (e.g. Problems become compounded when students are using a language not their own to work online).

These challenges may not play as great a role in the case of study in other areas such as English as a second language or in the study of other subject areas such as Math or Science. If we consider as an example the case of Chinese students learning English, concerns about students accessing Chinese sites as opposed to English sites are less likely to surface because of the present-day comparative domination of the Internet by English. Teachers who are preoccupied with students' use of English sites may either avoid incorporating use of OLEs or they may constrain students' use through a highly didactic preselection of sites which will limit students' control and realization of their own goals for learning. Such restrictions may prove to be both unfortunate and unnecessary. In the category of beliefs related to the advantages of use of OLEs, many of the excerpts emphasized the large number of sites which teachers believe are available for use in the teaching of French. Yet, why do other teachers believe there are insufficient sites? Should teachers be concerned that students will access or "sneak in" English sites instead of French ones? Teachers' underlying beliefs related to language acquisition which may be influenced by the Direct Method may result in unnecessary restrictions on the use of English. Is it more effective to allow some use of English rather than limit online use altogether because of a concern that students may not always use French? It is not the purpose of this study to provide answers to such questions. However, teachers' beliefs about the use and presence of English in OLEs might, no doubt, benefit from further investigation to ensure that teachers are not evolving beliefs that will actually prevent them from effectively exploiting OLEs.

Studies in this area might assist in the development of an understanding of the impact of the use of English sites by students of FSFL as they work online. What happens when we constrain students' use to French only? Likewise, in what ways, in what contexts and in what amounts will use of the students' native language in OLEs negatively affect development of FSFL skills? Once we have some answers to these

questions, professional development sessions might address the issue of students' use of their native language while learning French in OLEs. Other ways in which the challenge of use of English online may be dealt with would be through the creation of intranets or learning environments for dedicated use by FSFL teachers and students. This study considered teachers' beliefs about teaching FSFL in OLEs. However, further studies might wish to explore teachers' beliefs in relation to the teaching of FSFL using intranets.

### **7.2.3 Beliefs and Compatibility**

The metaphor of the computer as a generator of reality is an important one in the context of this study. This metaphor conceptualizes the computer, not as a teaching machine, but as providing access to realities from outside the classroom, to realities that are not necessarily didactically designed. Some of the beliefs uncovered in this study were more compatible with metaphors of the computer as tool, tutor, or teaching machine. To be compatible with these metaphors, what is important is that the learning environment be didactically structured and organized. Those who hold these metaphors will likely value computer environments that provide controls, structures and an organization similar to the traditional learning environment over use of environments that are loosely structured, decentralized, and organized in the same way as are OLEs.

While OLEs provide support for beliefs that are centered on learning, they do not always provide the same support for beliefs that are centered on teaching. As generators of reality, OLEs contrast sharply with TLEs and are not always accommodating of beliefs that are more focused on the process of instruction than on learning. Beliefs that emphasize such challenges or obstacles as loss of time, interference with the curriculum, competition with students' attention, information overload and lack of control may be based on the metaphor of the computer as a teaching machine. Resistance to use of OLEs may arise as a result of their inability to effectively provide a teaching environment. Beliefs in the importance of being learner-centered, of allowing individual paths for learning may be more compatible with use of OLEs. These beliefs are more likely to suit the circumstances and conditions of a learning situation or environment that has few

boundaries, is flexible, differentiated, changing, and largely unpredictable.

#### **7.2.4 Conflicting Beliefs**

In some cases, teachers' beliefs may be conducive to effective use of OLEs and yet there may still be barriers to use of OLEs. These barriers take the form of conflict. Conflict, inconsistencies or, what Nespor (1997) terms as "non-consensuality", are not uncommon features of belief systems. These features can be explained by the fact that while knowledge systems are open to evaluation, beliefs are not (Ibid.). One of the conclusions of this study is that, in some, if not many cases, teachers' beliefs about use of OLEs for the teaching of FSFL conflict with other beliefs. Four forms of conflict were noted in this study:

1. Conflict with one's own system of beliefs; (e.g. the teacher believes in the value of OLEs in the teaching of FSFL but also feels that she does not have the time to use them because she also believes in the importance of accountability and of being an efficient manager who covers the curriculum);
2. Conflict with institutional and systemic conventions; (e.g. a teacher wants to use a more project-based approach but constraints related to scheduling means she does not have the time to take this approach);
3. Conflict with beliefs of colleagues; (e.g. a teacher is moving towards a constructivist epistemology but colleagues believe in knowledge transmission);
4. Conflict with beliefs of students; (e.g. a teacher wants to be a facilitator but students prefer teacher-directed instruction).

Some beliefs profiled in this study suggest that, although the teacher felt the need to change and to evolve her practices, the beliefs of the teacher's own belief system, of students, of teachers or of systemic conventions, practices and norms were not consistent with this change. It is not clear what may result from such conflicts beyond what Taylor (1990) terms as "cognitive perturbation" (p.25). For example, what happens when systemic conventions and the beliefs of others reinforce and provide support for beliefs

that emphasize knowledge transmission while the individual teacher's beliefs may be moving towards an approach that emphasizes knowledge construction? Does the individual abandon the new beliefs? Does she compromise? Are the teacher's beliefs weakened as a result? What happens as a result of the conflict may depend on whether the systemic conventions and the beliefs of others are perceived as immutable external constraints, on how resilient the teacher's beliefs are, or on the centrality of the belief in terms of the individual's own belief system.

Whether the conflict is resolved so that the teacher's new beliefs translate into a transformation in practices may well depend on if there is a reconciliation between the different beliefs. Reconciliation may be achieved through a process of negotiation which, according to Taylor (1990), occurs at a number of levels through a process that is both private and public: "At the classroom level there is the individual teacher's self-negotiation, or reflection on, her personal beliefs and practices" (p.26). The teacher's reconstruction of beliefs can be helped by a process of self-negotiation but, as well, social negotiation. Inconsistencies between an individual's beliefs and those of colleagues or of students may be resolved or reconciled through a process of social negotiation whereby explicit public articulation, discussion and examination assist in the process of consensus building and of reconciliation. Finally, the negotiation process must also occur at a more public level. Teachers' participation in the development of school-based as well as district-wide policies, in school-improvement initiatives, and in the formulation of policies and decisions that affect the larger school community will provide opportunities for reconciliation, consensus building and, hopefully, for the implementation of new and transformed practices.

The findings of this study point to the need for a better understanding of the issue of conflicting beliefs. Which types of are more likely to conflict? Which situations give rise to such conflict and what processes might provide the most effective means of reconciling beliefs? Are there certain beliefs that can be more easily reconciled than others? Which beliefs are more likely to conflict with other beliefs? In terms of students' beliefs, which ones are more likely to conflict with those of teachers? Is it those which

relate to roles? These are just some of the questions that can be explored in relation to this aspect of beliefs.

### **7.2.5 Changing Beliefs**

If we think of teachers' beliefs as their own implicit theories, then we can affirm with some certainty that evolution in teachers' beliefs evident in this study support the findings of the Cognition and Technology Group at Vanderbilt (1996) that, while changes in theories of learning affect uses of technology, so too do new technologies affect theories of learning. In this case, technology appears to be affecting the implicit theories of teachers. A common theme or conclusion in the literature about teachers' beliefs is that changing them is a complex, perhaps even, mysterious, process. Nespor (1987) argues that beliefs are static, and Brousseau et al. (1988) posit that beliefs are resistant to change. Many of the beliefs profiled in this study suggest otherwise. If we refer back to this study's metaphor of the teacher as traveler or explorer of new uncharted lands, we can affirm, as a result of the findings in this study, that some teachers have adapted effectively to the new environments for learning. They have evolved new maps for the new territory. They have changed some of their beliefs.

Others have not yet adapted to the environments, but are in a transition. Their beliefs are undergoing a process of transformation as a result of being in new environments. They are beginning to reevaluate their beliefs as a result of exposure to what Dwyer et al. (1991) term the "altered context" such as that provided by technology. For these teachers, technology serves as what Bracey (1993) refers to as "a catalyst for change" forcing teachers to rethink their practices and beliefs. Their beliefs are undergoing what Woods (1996) describes as a "deconstruction of beliefs" whereby a change in beliefs is facilitated by the construction of another set of beliefs. Some of the beliefs uncovered in this study also indicate that not all teachers are adapting as well. Their maps correspond only partially, and in some cases, not at all, to the new territory. Faced with the newness of this environment, these teachers rely on the maps which they have already and which are representations of the world of the classroom. These maps

or beliefs reflect pedagogies, methods and approaches that do not mesh well with OLEs and are not well supported or accommodated by them.

Some teachers in this study indicated that their beliefs were changing as a result of their experiences with OLEs. Others, however, expressed their frustration with the inability of these environments to meet their needs. They held beliefs that were not supported by OLEs. It is not clear why some teachers appear to be evolving or have already evolved their beliefs while others have not done so. We can hypothesize as to why but more research on this issue specifically might provide an understanding that can then be used to directly intervene in order to assist teachers to shift their beliefs. Do some beliefs about use of OLEs shift more easily than others? Which beliefs are more resistant to change? What sort of direct intervention, for example in the form of professional development sessions, would be best suited to affecting beliefs? Collaborative action research projects may be particularly well-suited to understanding the dynamics of change in beliefs while, at the same time, providing an impetus to actually effectuate change. Such projects may wish to explore the role that might be played by key individuals such as educational leaders, teacher mentors and exemplary teachers.

### **7.3 Methodological Considerations**

Chapter 4 outlined the study's methodology. Information was provided pertaining to the design of the study, the procedures, and participants, as well as to the challenges inherent in studying beliefs. The purpose of this section is to highlight some of the strengths and weaknesses related to the method of data collection used in this study. As well, suggestions are made in terms of different approaches that could be taken to studying teachers' beliefs on this subject.

With the exception of the questionnaire, the methods used to collect the data represented an experiment with new and innovative research techniques. The online discussion list proved to be an effective means of promoting teacher talk and reflection. It also proved to be quite a learning experience for the researcher. It was enlightening to read about people's experiences and their beliefs. It was interesting to observe

commonalities in spite of geographic differences. However, what made this experience even more of a learning experience were all the unforeseen occurrences in the course of the discussion.

One of the first surprises encountered was the intrusion in the CREO list of messages which were not sent by subscribers and which did not relate to the intention of the list. Information about CREO as well as the e-mail address for subscribing were listed online at a site which provided a repertoire of French lists. The inclusion of the address of the list meant that it could be easily incorporated into the automated mail-out lists of companies or individuals wishing to advertise products or services online. As a result, during the course of the study, members of the CREO list began receiving e-mail messages inciting them to visit sites of an explicit sexual nature. Some participants were understandably surprised by the messages. A message to the service provider of the CREO list promptly resulted in the list being closed so that only those who were subscribed could post to it. The incursion of the "unwelcomed message" into CREO raised the issue of the lack of censorship and of boundaries on the Internet. Participants reacted to the incident and expressed what they believed about the "open" nature of the Internet. What followed was a long discussion about the issue of the control and monitoring of students while they are working online.

Besides monitoring to ensure that there were no incursions such as the one described above, maintaining the discussion's momentum also became an important preoccupation. Some topics appeared to invite more reaction and discussion than others. One suggestion provided by a member likely encouraged greater participation. This individual suggested that all e-mails sent out to members have an identifying "flag" so that messages from CREDO and CREO could be easily and quickly distinguished from their other messages. The suggestion was a useful one particularly in the case of members who were subscribed to a number of different lists who may receive many messages in the course of one day. The service provider was able to change the format of all messages forwarded to the list so that the subject line first included the name of the list either CREDO or CREO. Another feature which the service provider was able to add the list

was an automatic “reply to all” feature. Without this feature, participants’ responses to a posting would go only to the individual who posted the message unless the responder expressly chose to reply to all. With the feature added, all responses automatically went to all members of the list unless the sender expressly chose to do otherwise. These added features greatly improved the efficiency of the discussion list as a means to collect data on teachers’ beliefs.

In spite of the efficiency of the service provider in adding features to the list, there were some problems related to the technique over which there was little or no control. While use of computers and the Internet in the collection of data represents an effective and efficient technique, it is nonetheless susceptible to the inconveniences of computer viruses. The *Happy99.exe* virus or worm is a program that, when opened by the user, launches several files that monitor to whom e-mails are sent, keeps them in a file and then sends them a second message with the file attached. One of the members of the CREDO list unknowingly infected other members of the list with this virus during the course of the study. Thus, when participants posted a message, a second message automatically followed since their computer was infected. Members were alerted and those who were infected were provided with information on removing *Happy99.exe*.

In spite of these inconveniences, the list proved to be an effective means of generating meaningful discussion. Compared to the questionnaire where answers were often short, where there was little or no opportunity for follow-up or further questioning or clarification, the discussion list allowed for rapport to be established between the participants and the researcher on one hand and between participants themselves on the other. The discussion allowed for the generation of issues and questions by the participants as well as by the researcher. It allowed for a rich environment for reflection, communication, exchange, deliberation and discussion.

In terms of some of the challenges to using this approach, there is the lack of control, the large volume of material that the researcher needs to sort through in order to uncover the beliefs and the logistics of managing the list on a day-to-day basis for a ten-month period. In relation to the issue of control, a discussion list relies on the technique

of multiloguing. This means that the discussion is, to a large extent, decentered. The researcher does not always control the topics, the depth of treatment or the length of time that is spent on one issue. There were issues which participants could have discussed in greater detail (for example the issue of evaluation and assessment) but sometimes participants did not appear interested in particular topics. This is why the dialogues were so important. The dialogues were controlled or driven more by the interests and agenda of the researcher than by the participants. The dialogues made it easy to focus on particular issues even though the method was more contrived and perhaps less likely to get at the very tacit beliefs. One way in which a researcher might exert more control over the range of topics discussed in a discussion list would be to narrow the scope or range of the study and to limit participation from one program area (i.e. Core French or French Immersion) and/or from one grade area (i.e. primary, elementary, etc.).

The questionnaires on the other hand were much easier to manage. At the same time, it took considerable effort to get people to return them. Some of the questionnaires were returned with few comments. Compared to the discussion comments which were so rich, varied and lengthy, the responses in the questionnaire were frequently short, sometimes unrevealing, sometimes absent. A further disadvantage with use of the questionnaire as compared to the discussion list was that the questions were determined in advance by the researcher thus limiting the range of issues which a participant might comment on. Nonetheless, the questionnaires did provide the contrast with the responses of discussion participants. Thus, they served their intended purpose.

The dialogues with the five questionnaire participants were often more revealing than the questionnaires. All of the dialogue participants lived in remote and isolated areas. Some were located in small communities in Labrador where, for many months of the year, an Internet connection represents the only means of access to the outside world besides the coastal boat. For some of these individuals, when the phone lines were good and they could get and afford access, online access meant that they could benefit from the same type of virtual travel as could people in the capital, St. John's. The discussions with these individuals highlighted the value and importance of the Internet for people in

remote communities.

From a more general point of view in terms of the study, the scope was very broad and allowed for an initial foray into an area about which little is known. The findings provide a general insight into beliefs on teaching and learning FSFL in OLEs. Some of the beliefs uncovered in this study pointed to a need for a more focused study with a narrower scope in order to provide a opportunity to focus on specific beliefs. Instead of focusing on OLEs in general, future research into specific areas or aspects of OLEs would prove useful. For example, researchers may wish to consider investigating beliefs of teachers of FSFL in relation to e-mail, chat rooms, web publishing, MOOs or MUDs to mention but some of the tools that teachers use in OLEs. Research into the potential of OLEs to promote the development of listening and speaking skills would prove to be of practical use to teachers of FSFL. The findings of this study also indicate that there needs to be a better understanding of issues related to online navigation by students and teachers. What skills and strategies prove more successful than others? In general, the issue of professional development needs to be given greater attention in order to determine how it might better meet the needs of teachers in terms of preparing them to work in environments that do not support traditional pedagogies. In this regard, research will also need to differentiate between the different levels of primary, elementary and high school. Some of the beliefs in this study suggest that use of OLEs by primary teachers and their students may present particular challenges which need to be addressed by a separate research agenda.

Other areas not addressed by the methodology include the beliefs of students. The present study focused exclusively on the beliefs of teachers. However what many of the beliefs uncovered in this study remind us of is that beliefs are developed and modified through a process of social negotiation. To understand how they might be changed, we need first to understand how they relate to larger systems of beliefs such as those of students. Studies might also investigate the beliefs related to an entire school in order to explore how school policies and conventions, beliefs of administrators, teachers, parents, and students influence, effect, and compare with each other.

Researchers need to continue as well to develop innovative and effective ways to study beliefs. The discussion list used in this study provides an example of the type of instrument and approach that can be used to encourage teacher talk and reflection. Refinement of the procedures related to use of the discussion list could result in the development of an instrument and technique that is highly effective for investigation of different aspects of beliefs specifically and thought processes in general. Nonetheless, regardless of the type of instrument or approach used to study teacher beliefs, there will always be the challenge of trying to encourage teachers to reflect about and relate their experiences. It appeared, at many times in the course of the study, that teachers did not always have the language to express their beliefs nor did they appear accustomed to reflecting on, or talking about issues related to teaching and learning. However, this study did make some contribution by providing teachers with a forum to do more reflecting and 'talking'. At the end of the study, a number of the discussion list participants sent messages of appreciation for the opportunity to share their experiences and to learn that others were struggling no less or succeeding no more than they were.

### **7.5 Recommendations for Educational Practice**

In an earlier section of this study, a rationale was presented for the need to investigate teachers' beliefs about teaching and learning FSFL in OLEs. An important part of this rationale was to be able to provide teachers with professional development sessions that build on their existing beliefs. A further rationale was to provide a starting point from which teachers could be assisted in evolving their beliefs. The following recommendations are intended to assist in the realization of these goals.

1. The findings of this study indicate that teachers' beliefs about teaching and learning FSFL in OLEs are heterogeneous and thus reflect a wide range in terms of the evolution of approaches and technology use. Professional development sessions will therefore be useful in order to provide all teachers with opportunities to evolve their beliefs so that they might be more compatible with teaching and learning in OLEs.

2. The findings of this study suggest that teachers' fundamental beliefs about knowledge and about learning may play a pivotal role in their conception of OLEs and in the uses which they make of these environments. Teachers may need to be provided opportunities for exposure to beliefs that provide alternatives to knowledge transmission and to teacher-centered pedagogies.
3. Professional development sessions can address the issue of students' use of their native language while learning French in OLEs.
4. Technical training can be integrated with professional development opportunities to develop an understanding of the nature of OLEs and the types of learning and teaching styles that they best support.
5. Conflict in teachers' beliefs may be reconciled through opportunities for reflection on and examination and discussion of their beliefs.
6. Inconsistencies between an individual's beliefs and those of colleagues or of students may be resolved or reconciled through a process of social negotiation whereby explicit public articulation, discussion, and examination assist in the process of consensus building and of reconciliation.
7. Public negotiation of beliefs can be accomplished through teachers' participation in the development of school-based as well as district-wide policies, in school-improvement initiatives, and in the formulation of policies and decisions that affect the larger school community.

## **7.6 Recommendations for Educational Research and Development**

The present study had a broad scope. As such, it did not allow for investigation into particular aspects or types of beliefs. It did not allow for investigation into the beliefs of particular groups or individuals. Instead, this study aimed to profile the beliefs of teachers of FSFL in general. However, the findings of this study indicate that our understanding about this subject might be deepened through investigations that are more focused than this study. At the same time, some of teachers' beliefs uncovered in this

study reveal that there are many areas related to use of OLEs for the teaching of French about which we know little and which would merit investigation. What follows are some areas which might be explored by researchers.

1. While some teachers' beliefs indicated a comfort level with use of OLEs in spite of the present dominance of the Internet by English sites, other beliefs highlighted problems and concerns related to the use of OLEs because of the presence of English. Beliefs on this subject of use of English in the teaching of FSFL using OLEs might therefore be investigated further.
2. Many beliefs reflected a low comfort level with the openness of OLEs, for example, in relation to control and monitoring. Research could be conducted into beliefs related to the use of Intranets for dedicated use by FSFL teachers and students.
3. Collaborative action research studies might highlight the experiences of those who have been successful in their attempts to exploit OLEs for the teaching of FSFL so that teachers can have concrete examples of ways in which particular pedagogies combine with FSFL in online learning environments.
4. Investigators can explore the types of beliefs that are more likely to conflict, the situations which give rise to conflict as well as the processes that provide the most effective means of reconciling beliefs.
5. Longitudinal studies of groups of teachers exposed to OLEs may provide insight into dynamics of beliefs. Do some beliefs shift more easily than others? Which beliefs are more resistant to change? What sort of direct intervention, for example in the form of training, would be best suited to affecting change in beliefs?
6. Collaborative action research projects may be particularly well-suited to understanding the dynamics of change in beliefs while, at the same time, providing an impetus to actually effectuate change.
7. Research into the potential of OLEs to promote the development of listening and speaking skills might prove to be of practical use to teachers of FSFL.

8. There needs to be a better understanding of issues related to online navigation by students and teachers. What skills and strategies might prove more successful than others?
9. Research can also differentiate between beliefs at the different levels of primary, elementary and high school. Some of the beliefs in this study suggest that use of OLEs by primary teachers and their students may present particular challenges which need to be addressed by a separate research agenda
10. Research into the beliefs of students may provide more information to assist and support teachers in the social negotiation of their beliefs.
11. Investigations of the beliefs related to an entire school may assist in determining how school policies and conventions, the beliefs of administrators, teachers, parents, and students as a whole effect and compare with each other.

## **7.7 Conclusion**

One of the conclusions of this study was that teachers of FSFL might benefit from opportunities to develop an understanding of constructivist epistemology and philosophy. Adopting a constructivist philosophy may not represent a large shift in thinking. In spite of the fact that it may be a theory, philosophy, and epistemology, constructivism still represents a view of learning that is essentially intuitive in nature. It is not surprising that one of the leading spokespersons of constructivism, von Glasersfeld, once argued himself that "Constructivism does not claim to have made earth-shaking inventions in the area of education; it merely claims to provide a solid conceptual basis for some of the things that, until now, inspired teachers had to do without theoretical foundation" (von Glasersfeld, 1995b, p. 15).

In essence then, all constructivism does is attempt to make us aware of something that we know intuitively. To evolve their beliefs so that they might work more effectively in OLEs, teachers must be like the explorer in the excerpt from the poetry of T. S. Eliot at the beginning of this chapter. They need to return to where they started and revisit their common sense notions of what it means to learn. OLEs can help them in this process

because they provide an altered context that provides support for a philosophy that equates learning with what we know it to be intuitively - a process of sense-making. Teachers need not be like strangers in a strange land in online learning environments. They need to let themselves be guided by an intuitive notion of what it means to learn. Their belief in learning as a process of making sense and of coming to understand the world will provide them with the most important map which they will need to guide them as they venture into new landscapes for learning in the 21<sup>st</sup> century.

APPENDIX A  
SUMMARY OF RESEARCH METHODS

**SUMMARY OF RESEARCH METHODS**

<b>POINT OF COMPARISON</b>	<b>DISCUSSION LISTS CREDO &amp; CREO</b>		<b>QUESTIONNAIRES</b>	
	<b>MULTILOGUE</b>	<b>DIALOGUE</b>	<b>MONOLOGUE</b>	<b>DIALOGUE</b>
<b>Form of exchange Request for participation</b>	Announcement sent to 6 lists for CREDO & 6 for CREO	22 participants from CREDO invited to dialogue 14 participants from CREO invited to dialogue	130 participants are chosen by program specialists following guidelines specified on form sent to them.	All questionnaires included invitation to participate in dialogue
<b>Final selection of participants</b>	Participants select to subscribe after reading the online invitation	16 agree to participate from CREDO 0 agree from CREO	Participants select to either complete or not complete questionnaire	22 agree to participate
<b>Response to participation request</b>	150 subscribers 92 - CREDO + 48 - CREO	All those who agreed to participate were selected.	88 questionnaires returned	5 participants are selected by researcher on the basis of their lack of use of Internet
<b>Participants</b>	Experienced Internet users only	Experienced Internet users only	Experienced or non-experienced Internet users	Non-experienced Internet users only

<b>POINT OF COMPARISON</b>	<b>DISCUSSION LISTS CREDO &amp; CREO</b>		<b>QUESTIONNAIRES</b>	
	<b>MULTILOGUE</b>	<b>DIALOGUE</b>	<b>MONOLOGUE</b>	<b>DIALOGUE</b>
<b>Form of exchange</b>	French (CREO) & English (CREDO)	English	English	English
<b>Language of use</b>	The list was by invitation. No control for types of schools, areas, programs that were represented.	No control for types of schools, areas programs that were represented.	Rural and urban schools, Core French and French-Immersion programs, small and large schools	Rural and urban schools, Core French program, small and large schools
<b>Programs, schools represented</b>	Discussion format	Question/answer	8 open-ended questions	Unstructured dialogue
<b>Format</b>	Automated list-serve distributed messages to all subscribers	Individual E-mails	Mail-out questionnaire	Telephone
<b>Technique</b>	Participants & researcher	Most often researcher	Researcher	Participants & researcher
<b>Control</b>	No control for these variables	No control for these variables	No control for these variables	No control for these variables
<b>Number of males vs. females, age</b>	Approximately 200 postings	90 postings or messages	88, 2 page questionnaires	Approximately 2 hours of taped recordings
<b>Result</b>				

APPENDIX B

INVITATION TO PARTICIPATE IN CREDO AND CREO

To: FLTEACH@LISTSERV.ACSU.BUFFALO.EDU

From: Elizabeth Murphy

Subject: The Digital Approach

Cc: french-connection@calvin.sternnet.nf.ca, immersion-fr@sfu.ca, rescot-fr@cru.fr, edufrancais@cru.fr, inclass@schoolnet.ca

Muds, moos, virtual, simulated, 3D & microworlds worlds, intelligent, adaptive & hypermedia environments: these are but some of the components of the new digital landscape for learning in the 21st century.

In the teaching of French as a second & foreign language, we have moved from grammar-translation approach to a direct approach, then to the audio-lingual and the communicative approach and now, possibly to a digital approach which relies on use of the Internet.

How is the use of Internet impacting on your teaching? Does it alter in any way your beliefs about teaching and learning. What are your beliefs about teaching and learning with & without the Internet? Would you like to share your stories, experiences, theories and beliefs with other teachers?

Credo is a new discussion list which has been created to provide teachers from around the world the opportunity to share their stories, experiences and beliefs about use of the Internet in their teaching of French as a second or foreign language.

The list is part of a research project on teachers' beliefs about use of the Internet in their teaching. The project will run from September, 1998 to June, 1999. To subscribe to the list, simply send the following message to majordomo@sternnet.nf.ca

subscribe credo

To: edu-ressources@rtsq.grics.qc.ca  
From: Elizabeth Murphy <elmurphy@stemnet.nf.ca>  
Subject: L'approche numérique  
Cc: azelie@ardemi.fr, episto-liste@cru.fr, bmataign@anthropy.com, edu-ressources@rtsq.grics.qc.ca, aqefls@mtl.net  
Bcc:  
Attached:

Les mondes virtuels à 3 dimensions, les environnements intelligents et adaptifs, les Moos, les hypertextes et hypermédias: ce ne sont que quelques uns des environnements nouveaux faisant parti du paysage virtuel de l'apprentissage au 21ème siècle.

Dans l'enseignement du Français langue seconde et du Français langue étrangère, nous sommes passés des approches de grammaire/traduction à l'approche directe et audio-lingual et ensuite à une approche communicative. Nous arrivons maintenant à une approche numérique basée sur une utilisation de l'internet.

Comment réagissez-vous à l'utilisation de l'Internet dans votre enseignement?  
Est-ce que vos expériences affectent vos croyances au sujet de l'apprentissage et l'enseignement?  
Quelles sont vos croyances au sujet de l'enseignement avec l'internet?

Voudriez-vous partager vos expériences, théories et croyances avec d'autres enseignant(e)s?

Creo est une liste de diffusion établie pour fournir aux enseignants une occasion de partager leurs croyances au sujet de l'enseignement du Français avec l'internet.

Cette liste fait partie d'un projet de recherche qui continuera jusqu'au mois de juin, 1999.

Pour vous y abonner, faites parvenir le message suivant directement à

majordomo@stemnet.nf.ca

subscribe creo

APPENDIX C  
EXAMPLES OF DISCUSSION LIST POSTINGS  
BY PARTICIPANTS

X-Authentication-Warning: calvin.stemnet.nf.ca: majordom set sender to owner-credo@stemnet.nf.ca using -f  
Date: Sat, 05 Sep 1998 09:48:25 -0500  
From:  
Reply-To:  
Organization:  
X-Mailer: Mozilla 3.0 (Win95; I)  
To: credo@stemnet.nf.ca  
Subject: Time needed to prepare Internet lessons  
Sender: owner-credo@stemnet.nf.ca

I am a third grade French immersion teacher. I have found that very few French sites are kid friendly, so I always make up some kind of activity sheet to accompany the web site. For example, there's a Canadian site that includes an interactive game called "Les Minéraux et les Métaux: Un trésor à découvrir." By clicking on everyday objects around the house, you get a whole a list of the minerals and metals that are found in them. My kids can't read all those names of minerals - plus they don't know what they are - so I made it into an simple treasure hunt. First they have to predict where they would find gold and silver in their house, then they go to the web site and click on the pictures. Within the list of metals, they only have to recognize "or" and "argent." They fill out the activity sheet, we compare predictions and results and in the meantime we have reviewed lots of everyday vocabulary.

There are hundreds of kid sites in English, but even if you're lucky enough to find them in French, they are written for francophone kids and the reading level is usually still quite difficult. So it does take me a lot more time to find appropriate sites and to write up an accompanying activity sheet.

X-Authentication-Warning: hobbes.stemnet.nf.ca: majordom set sender to owner-creo@stemnet.nf.ca using -f  
From:  
To: <creo@stemnet.nf.ca>  
Subject: creo: une ethique d'internet a l'ecole?  
Date: Sat, 30 Jan 1999 10:30:22 +0100  
X-MSMail-Priority: Normal  
X-Mailer: Microsoft Outlook Express 4.72.3110.1  
X-MimeOLE: Produced By Microsoft MimeOLE V4.72.3110.3  
Sender: owner-creo@stemnet.nf.ca  
Reply-To: creo@stemnet.nf.ca

Nous ne disposons, dans l'établissement, pour l'instant que d'un seul point d'accès. Or ce système nous donne entière satisfaction car cela nous permet d'importer les sites sur lesquels nous voulons que les élèves travaillent, trier les informations pertinentes, voir les adapter au public. De plus, nous sommes sur que les élèves pourront produire un travail contenant suffisamment de choses.

Seul inconvénient, cela donne au responsable informatique, un surcroît de travail car il doit faire les recherches. Puis les collègues doivent retraiter l'information à leurs convenance sur les ordinateurs de l'école ou les leurs.

Il ne s'agit pas tant de mettre un policier derrière chaque ordinateur que de faire un véritable travail pédagogique en apprenant aux enfants tout ce que permet de faire un ordinateur ( et le réseau) mais aussi quels en sont les dangers. C'est pourquoi, dès la rentrée prochaine, nous envisageons de mettre en place un petit groupe de pilotage internet, composé d'élèves volontaires qui seront chargés (sous le contrôle du responsable informatique) de rechercher et mettre en forme des informations qui seront alors mis à la disposition des autres élèves du collège.

N'oubliez jamais qu'il est rigoureusement impossible de suivre chaque ordinateur, ne serait-ce que parce que nous n'aurons jamais les ressources humaines suffisantes et que les logiciels seront toujours, en ce qui les concerne faillibles. Par contre, un véritable travail d'éducation s'impose et ce d'autant plus que de nombreux enfants disposent d'accès au réseau chez eux, c'est à dire là ou nous ne pouvons rien contrôler.

APPENDIX D

EXAMPLE OF A DISCUSSION LIST POSTING  
BY THE RESEARCHER

X-Authentication-Warning: hobbes.stemnet.nf.ca: majordom set sender to  
owner-creo@stemnet.nf.ca using -f  
X-Sender: elmurphy@mail.stemnet.nf.ca  
X-Mailer: QUALCOMM Windows Eudora Pro Version 3.0.3 (32)  
Date: Wed, 12 May 1999 18:12:00 -0200  
To: creo@stemnet.nf.ca  
From: Elizabeth Murphy <elmurphy@stemnet.nf.ca>  
Subject: creo: où sommes-nous  
Sender: owner-creo@stemnet.nf.ca  
Reply-To: creo@stemnet.nf.ca

Avez-vous eu l'occasion d'entendre/voir le débat Bell-Aquops en format  
REAL VIDEO à l'adresse suivante: <http://www2.sympatico.ca/education/aquops/>?

Une des personnes a remarqué que nous sommes en général à un premier  
niveau d'intégration des technologies. Nous sommes à un niveau où nous nous  
préoccupons pas nécessairement des questions pédagogiques mais plutôt des  
questions logistiques et techniques. Est-ce la même situation là où vous êtes?

APPENDIX E  
INITIAL CREDO MESSAGE

Credo is a mailing list created in August, 1998 by Elizabeth Murphy in Newfoundland, Canada in the context of doctoral research on teacher beliefs. Credo is different from many other mailing lists. The purpose of the list is to provide its members with the opportunity to look at the impact that use of the Internet is having on their beliefs as teachers of French as a second language.

There are many questions to discuss and consider: Is using technology in the second-language classroom an add-on or a necessity? Does it facilitate language learning? Is it only useful for the development of certain skills? Is it more suited to certain types or age groups of learners? And more importantly: as a result of using the Internet in your teaching, do you find that you have changed the way you think or feel about learning and teaching? What kind of an impact has your experience had on your thinking?

These are some of the questions which will have the opportunity to consider in the upcoming months.

Please note that credo is not designed to assist its members in finding penpals, or in answering technical questions. I will very happily accept questions of this nature directed specifically to me [elmurphy@stemnet.nf.ca](mailto:elmurphy@stemnet.nf.ca) rather than to [credo@stemnet.nf.ca](mailto:credo@stemnet.nf.ca).

Hope this message gets you thinking and reflecting about your own beliefs!

Elizabeth

APPENDIX F  
CREDO WELCOME MESSAGE

Welcome to the credo mailing list! Please save this message for future reference. Thank you. If you ever want to remove yourself from this mailing list, you can send mail to [majordomo@stemnet.nf.ca](mailto:majordomo@stemnet.nf.ca) with the following command in the body of your email message: unsubscribe credo or from another account, besides the one you used to subscribe initially: unsubscribe credo your name. If you ever need to get in contact with the owner of the list, (if you have trouble unsubscribing, or have questions about the list itself) send an email to [elmurphy@stemnet.nf.ca](mailto:elmurphy@stemnet.nf.ca). This is the general rule for most mailing lists when you need to contact a human.

Credo welcomes you and encourages you to partake openly and actively in the discussion of your beliefs about teaching and learning French using the Internet!

APPENDIX G  
PERMISSION FORM

Le retour à [elmurphy@calvin.stemnet.nf.ca](mailto:elmurphy@calvin.stemnet.nf.ca) du message qui suit servira d'acceptation des conditions de cette liste:

En tant que membre de la liste de diffusion creo sur les croyances des enseignant (e)s, j'accepte que tous ou certains de mes commentaires soient rendus publics et publiés comme faisant partie de la thèse de doctorat d'Elizabeth Murphy (Université Laval), moderatrice de la liste.

Je comprends que mon nom ou mon adresse de courrier électronique ne seront pas rendus publics. Au contraire, ils resteront anonymes.

Ma participation est volontaire et je peux choisir de me désabonner n'importe quand.

APPENDIX H  
DISCUSSION LIST GUIDELINES

Subscribers are asked to note a few guidelines to ensure that the list runs smoothly.

1. Do not send attachments (attached files) to the whole group. Instead you can send a message stating what the file is and then allowing people to contact you in order to get the file. Attachments can cause numerous problems not to mention that they tend to overload servers when they are sent out on mailing lists.
2. When sending a URL, please check the syntax before you send it to ensure that it is correct.
3. When responding, you do not need to quote the entire message to which you are adding a further comment, however, it helps with continuity if you at least provide some reference to the previous message.
4. Always include a clear and specific subject line.
5. Chain letters are forbidden on the server which houses this list.
6. Please try to stick to the topic as much as possible. There are numerous lists related to numerous topics especially in the areas of French and technology where you can discuss all sorts of issues.
7. To unsubscribe, send a message directly to me or to [majordomo@stemnet.nf.ca](mailto:majordomo@stemnet.nf.ca) but not to credo itself.
8. Send personal messages to the individual for whom they are intended and not to the entire list. Use the To: line instead of reply for this function.
9. Be professional, friendly and courteous in your messages.
10. Tell your friends about credo and encourage them to subscribe!

Hope this helps! Elizabeth

APPENDIX I  
INTRODUCTION TEMPLATE

Please introduce yourself to the group of Credo members. I will begin but please don't feel like you have to present yourself exactly as I have done.

My name is Elizabeth Murphy and I live in St. John's, Newfoundland, Canada. For those of you unfamiliar with this neck of the woods, St. John's is the oldest and most easterly city in North America.

I have taught Core French as well as French Immersion mostly at the Junior and Senior high levels. Presently I am working as a principal of a K-9 school. I began teaching in 1981. I am a Ph. D. candidate at l'Université Laval in Québec City, Canada in educational technology. Sound busy? It is!

I began exploring the Internet in the "early days" when we only had gopher and no WWW. I have done a number of Internet projects which I will tell you about later.

I am a member of a number of online lists (three of which I moderate) and, according to my 11 year old son, I spend "too much time online"!

The Internet gives me the opportunity to exchange ideas and learn from others. Given that I live in a remote part of the world and I don't travel much, I wouldn't have this opportunity without the Internet.

I look forward to exchanging ideas with the members of credo. I look forward to reading the "autobios" of the other credo members.

Send your message directly to [credo@stemnet.nf.ca](mailto:credo@stemnet.nf.ca)

Enchantée! Elizabeth

(Note to the reader: the same message was sent in French to CREO subscribers.)

APPENDIX J  
SAMPLE DIALOGUE QUESTIONS FOR  
DISCUSSION LIST PARTICIPANTS

1. At what point in your teaching career did you begin using the Internet approximately?
2. In the credo discussion, teachers talked about their many frustrations with using the Internet. These frustrations included lack of preparation time, lack of technical support, uncertainties about how and when to use the medium etc. In spite of these frustrations, many teachers like you are still using the Internet. My question for you this week is: What beliefs motivate your decision to want to use this new medium for teaching French? What's in it for you? What's in it for your students?
3. When you use the Internet to teach French, do you and your students function more, less or the same amount in the target language (French)? Does the Internet require a difference in the language you use? Does it make using the target language easier or more difficult for you or your students?
4. My question for you this week relates to hypertracking-being offtrack while online! "Often when students are put in front of a computer, they get absorbed randomly browsing sites. They are visiting sites that may not be related to their curricular material, and indeed, may even be undesirable to teachers and parents. Once hypertracked, it is difficult for the teacher to bring their attention back into the classroom." Is this issue of "hypertracking" an issue for you? How do you deal with it?
5. What skills do teachers need to be able to use the Internet? Do you feel you have these skills? Where and how did you develop them?
6. Do you specifically teach any strategies or skills to students to help them work in this new learning environment? Can you suggest some skills which you think students may need to be taught?
7. A lot of the literature on school reform is referring to the Internet and technology in general as a means of changing current practices, of breathing new life into schools. Has the Internet changed your practices in any way? Have you taken somewhat of a different approach to teaching as a result of using the Internet?
8. How are you adjusting to this new environment? What does it feel like to be a teacher in such an environment? Is it exciting? disorienting? confusing? frustrating?

APPENDIX K

INVITATION TO PARTICIPATE IN DIALOGUES

Would you be willing to participate in my research project on teacher beliefs re use of the Internet in teaching French as a second language?

I know that you are participating as part of the discussion list.

I would like to interview you online as well as a few others who are on the list.

You'd be a great candidate given your involvement with the Internet.

I recognize that you are really busy so I would limit sending questions to once per week or two.

Let me know what you think

Thanks  
Elizabeth

APPENDIX L  
EXAMPLE OF A DIALOGUE POSTING

Date: Tue, 10 Nov 1998 00:27:36 -0330  
From:  
Reply-To:  
Organization:  
X-Mailer: Mozilla 4.05 [en] (Win95; U)  
To: Elizabeth Murphy <elmurphy@stemnet.nf.ca>  
Subject: Re: a question for you this week

One of the ways in which using the Internet changes one's way of teaching is that if you had not adopted the role of facilitator, technology will force you to take on this role. Students become more responsible for their own learning and research and this is a good thing. It makes them become more responsible and independent learners.

Another way that the Internet has changed my teaching practices is that now there are many resources available to the students in French. Previously I had to find all the resources needed to complete a certain task. Many times the resources were not readily available since resource centres/libraries did not carry a wealth of French materials.

I find the Internet to be a great tool, assistant, additional wealth of resources and so on and so on.

APPENDIX M  
INDIVIDUALIZED NUMERICAL SUMMARY OF PARTICIPANTS'  
MULTILOGUE/DIALOGUE POSTINGS

**INDIVIDUALIZED NUMERICAL SUMMARY OF  
PARTICIPANTS' MULTILOGUE/DIALOGUE POSTINGS**

<b>PARTICIPANT (Letters are used instead of names)</b>	<b>NUMBER OF MULTILOGUE POSTINGS</b>	<b>NUMBER OF DIALOGUE POSTINGS</b>	<b>TOTAL NUMBER OF COMBINED POSTINGS</b>
<b>A</b>	19	4	23
<b>B</b>	10	9	19
<b>C</b>	6	12	18
<b>D</b>	3	6	9
<b>E</b>	1	8	9
<b>F</b>	9	7	16
<b>G</b>	8	6	14
<b>H</b>	3	3	6
<b>I</b>	2	6	8
<b>J</b>	15	8	23
<b>K</b>	2	1	3
<b>L</b>	2	1	3
<b>M</b>	1	3	4
<b>N</b>	1	9	10
<b>O</b>	2	3	5
<b>P</b>	7	3	10
<b>TOTAL</b>	91	89	180

APPENDIX N  
NUMERICAL COMPARISON OF  
MULTILOGUE/DIALOGUE POSTINGS

**NUMERICAL COMPARISON OF  
MULTILOGUE/DIALOGUE POSTINGS**

<b>Point of comparison</b>	<b>CREDO</b>		<b>CREO</b>	
	<b>Multilogue</b>	<b>Dialogue</b>	<b>Multilogue</b>	<b>Dialogue</b>
<b>Number of subscribers or participants</b>	92	19	48	NA
<b>Participants who did not post at any time</b>	50	0	26	NA
<b>Participants who posted only once</b>	12	1	12	NA
<b>Participants who posted from 2 - 5 times</b>	21	5	9	NA
<b>Participants who posted from 6-10 times</b>	6	8	2	NA
<b>Participants who posted from 11-15 times</b>	1	0	0	NA
<b>Participants who posted from 16-20 times</b>	1	0	0	NA
<b>Total postings excluding those of the researcher</b>	146	90	47	NA
<b>Number of postings by the researcher</b>	76	18	25	NA

APPENDIX O  
MAIL-OUT QUESTIONNAIRE

## QUESTIONNAIRE

### EXPLORING YOUR BELIEFS ABOUT USE OF THE INTERNET IN THE TEACHING OF FRENCH AS A SECOND LANGUAGE

#### CONSENT FORM

*Please indicate your agreement to participate in this activity by first reading the section below, then adding your signature in the space supplied.*

*The information in this questionnaire will be used by Elizabeth Murphy as part of her doctoral research program at l'Université Laval under the direction of Jacques Rhéaume.*

*The research aims to profile some of the beliefs of teachers of French as a second language regarding use of the Internet in their teaching.*

*It is hoped that the results of this research will prove useful in understanding the role of the Internet in the teaching of French. Your input is therefore important and valuable.*

*⇒ I understand that my participation in this study by completion of this questionnaire is voluntary.*

*⇒ I understand that some or all of my comments may be published in the researcher's thesis.*

*⇒ I understand that my identity will remain anonymous.*

\_\_\_\_\_  
Participant's name

\_\_\_\_\_  
Participant's signature

\_\_\_\_\_  
Date

I would be interested in participating in an online discussion on this topic.

I would be interested and willing to participate in an interview on this topic.

My telephone number is: \_\_\_\_\_

My e-mail address is: \_\_\_\_\_

**1. What do you like/dislike about using the Internet in the teaching of French? If you do not use the Internet, please suggest what you think the advantages and disadvantages might be.**

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**2. What type of Internet sites or activities would you/do you like to use with your students?**

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**3. What has been your experience of using the Internet for learning, for research or for your own personal use? Has it been positive? negative?**

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**4. What skills, knowledge or strategies would you and your students need in order to make effective and efficient use of the Internet for learning French?**

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**5. Does the Internet support or correspond to the type of approach that you use in the teaching of French?**

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**6. What sort of impact has the Internet had on your teaching? Has it led you in any way to change your approach to the teaching of French?**

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**7. In the first part of this questionnaire, you indicated how much you use the Internet with your students. Please indicate why you do not use it more.**

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**8. Use the remaining space to add any other comments.**

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APPENDIX P  
FOLLOW-UP LETTER

Recently, you should have received a questionnaire to be completed and returned To Elizabeth Murphy. The questionnaire was about Internet use by teachers of French.

To date, I have not received your completed questionnaire. Your input is important and will no doubt contribute to an understanding of how best to meet the needs of our students and teachers in the information age.

A stamped envelope was included with the questionnaire to facilitate its return to me. If you have not yet completed the questionnaire, you may still do so and return it to me. If you did not receive a copy of the questionnaire or if you have lost it or need another one, please e-mail me [elmurphy@stemnet.nf.ca](mailto:elmurphy@stemnet.nf.ca) or telephone me collect 579-9221.

Thanks in advance for your help!

Elizabeth Murphy

APPENDIX Q  
SECOND FOLLOW-UP LETTER

**Here is a copy of the questionnaire in case you have lost it.**

**I would be very grateful if you could complete it and return it to:**

**Elizabeth Murphy  
112 Circular Road  
St. John's, NF  
A1C 2Z5**

**If you do not want to mail it, you can fax it to:**

**753-4974**

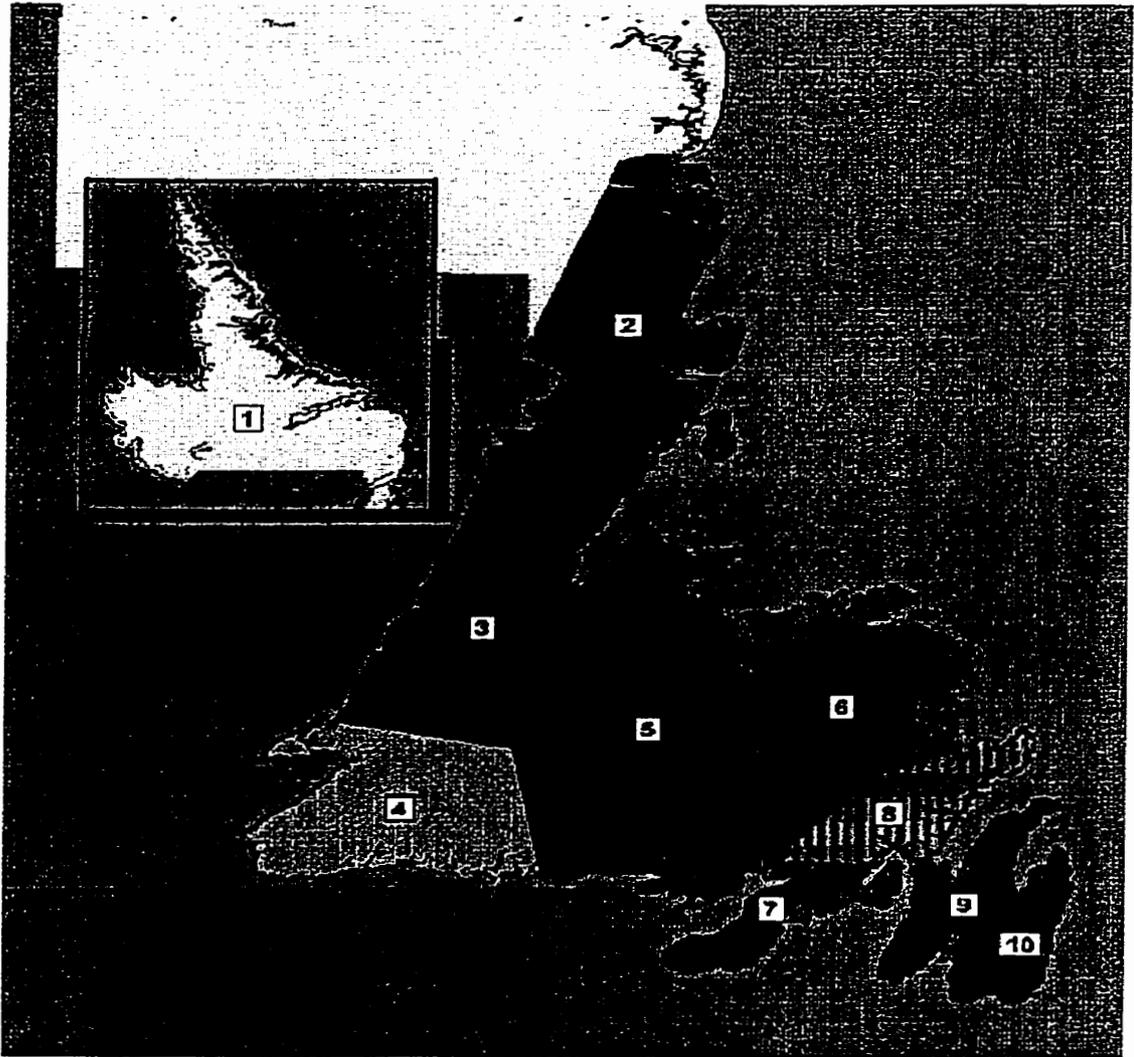
**Or you can complete it on the Internet directly at the following address:**

**<http://www.stemnet.nf.ca/~elmurphy/emurphy/english.html>**

**Your response is important to me even if  
you are not presently using the Internet.**

**Thanks in advance!**

APPENDIX R  
MAP OF THE TEN SCHOOL DISTRICTS  
OF NEWFOUNDLAND AND LABRADOR



Source: Government of Newfoundland and Labrador  
[http://www.edu.gov.nf.ca/erp/reports/direct/k-12%20directory/table%20of%20contents/district\\_\\_map.htm](http://www.edu.gov.nf.ca/erp/reports/direct/k-12%20directory/table%20of%20contents/district__map.htm)

APPENDIX S  
REQUEST FOR PARTICIPANTS  
SENT TO FRENCH PROGRAM SPECIALISTS

<b>CORE</b>	<b>Teacher's name Please name each teacher only once</b>	<b>School's name Please name each school only once</b>
Any grade from K-3		
Any grade from 4-6		
Any grade from 7-9		
Any grade from 7-9		
Any level from 1-3 (grades 10-12)		
Any level from 1-3		
Any level from 1-3		
Any level from 1-3		
<b>IMMERSION</b>		
Any grade from K-3		
Any grade from K-3		
Any grade from 4-6		
Any grade from 4-6		
Any grade from 7-9		
Any grade from 7-9		
Any level from 1-3		
Any level from 1-3		

December 13<sup>th</sup>, 1998

⇒ I am getting ready to distribute some questionnaires to teachers in your district in order to profile their beliefs re use of the Internet in their teaching.

⇒ Your board has kindly agreed to allow me to conduct this research.

⇒ Could you provide me with some **teacher and school names** based on the grade levels & programs listed below?

⇒ If your district does not offer one of these programs, leave that space blank.

⇒ The names can be randomly selected.

⇒ Use the enclosed form to fax the information back to me. Or use the means which is most convenient for you.

☺ Thanks in advance. I appreciate how busy you are. I am confident that the results of this research will help us in our efforts to improve practices and evolve methodologies in the teaching of French.

E-mail any questions to [elmurphy@stemnet.nf.ca](mailto:elmurphy@stemnet.nf.ca)

**UN GROS MERCI !!**

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