

# CHAPTER 6

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## 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 Pusak 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. Pusak 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 psycholinguistics, 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 multi-media. 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 "webhacking 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.