

**A TALE OF TWO SCHOOLS:  
A COMPARATIVE CASE STUDY OF COMPUTER NETWORKING  
IN TWO SCHOOLS IN THE TORONTO BOARD OF EDUCATION**

**by**

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**A thesis submitted in conformity with the requirements  
for the degree of Doctor of Philosophy  
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## **ABSTRACT**

This thesis is a case study of two urban schools, one located in the inner-city and comprised of a culturally-diverse non-mainstream student population, the other located in a middle class neighbourhood and comprised of an English-speaking, Canadian-born mainstream student population, to examine their approaches to computer networking. It seeks to identify the pedagogy accompanying the technology and the implications of this for mainstream and non-mainstream students. This approach is based upon the researcher's commitment to the use of appropriate technology within the context of a transformative pedagogy to promote equity of outcomes for all children. In particular, the thesis:

- a) reviews the academic literature, policy documents, and arguments in the public debate on education reform;
- b) proposes a theoretical model for the study of schooling environments, applies it critically in the context of comparative study, and reviews the validity and utility of the model. It uses the framework of traditional, progressive, and transformative pedagogy (Cummins & Sayers, 1995) to examine the data;
- c) utilizes a qualitative research design. Incorporated into the design is an intervention known as action research, which was necessary in order to stimulate use of the Internet in the two schools. A technique known as portraiture is used for data gathering and presentation. Data sources consist of fieldnotes from participant

observation in the schools, interviews, focus groups, and e-mail correspondence with teachers, principals, and students; and

- d) examines three major issues identified in the study as salient for the comparison of the schools in their approaches to computer networking: *pedagogy*, *literacy*, and *equity*.

A major conclusion from this study is that approaches to computer networking in the two case schools depended largely on the individual pedagogy of the teachers. Their interactions with the students in the classroom proved to be a more significant factor in terms of the negotiation of identities than the level of sophistication of the technology. Their pedagogical orientation as evidenced in their statements and practices revealed, more than anything else, whether there was the potential for the goal of equity of outcomes for all children to ultimately be achieved.



# ACKNOWLEDGMENTS

Undertaking a qualitative dissertation is somewhat like embarking on a journey without a map - you know you have a destination to reach, but you are not quite certain as to how you are going to get there. Choosing a new frontier for learning such as the Internet on which to conduct one's research is additionally challenging since there are virtually no precedents.

During my travels, I encountered some of the inevitable twists and turns. Nevertheless, I found that with a great deal of hard work and perseverance, my destination eventually began to come into focus. I was fortunate because certain beacons helped illuminate my path.

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# CHAPTER 1

## INTRODUCTION

**"It was the best of times, it was the worst of times..."  
- Charles Dickens, A Tale of Two Cities**

This famous line from Charles Dickens' A Tale of Two Cities refers to the paradoxical state of affairs in London and Paris just prior to the French Revolution. For the main characters in this novel, one city represents danger, while the other provides safety. Both cities stand as separate poles in the book's structure, and yet both are united by some common elements.

This dissertation is a tale of two schools that stand as separate poles in the education system, and yet are united by some common elements. These schools, which for the purposes of this study shall be referred to as "Sydney Carton Public School" and "Charles Darnay Public School" (after the central characters in A Tale of Two Cities) are very much like London and Paris in that there are currently changes taking place in the broader society that are creating very different educational opportunities for their students. To say that it is the "best of times" and the "worst of times" at Sydney Carton and Charles Darnay would be a little overstated. However, in terms of access to information technology, the gap between the "haves" and the "have-nots" has already begun to widen.

In A Tale of Two Cities, Dickens vividly illustrates the consequences when people do not learn from their mistakes. The aristocrats, both English and French, do not understand or want to understand, the causes of the French Revolution. The author sounds a clear warning to Englishmen that they cannot continue to oppress the labouring classes with foul prisons, infamous charitable and educational institutions and poor working conditions without the inevitable vicious retribution.

In this tale of two schools, a similar message may apply. For, if we neglect the inequities that are evolving in terms of access to information technology by different groups in our society, the consequences may not be as violent as the French Revolution, but will undoubtedly begin to reveal themselves in other, troubling ways. Will we be prepared to deal with newly disenfranchised high school drop-outs who turn to the streets for solace in a world that is rushing past them at the click of a mouse?

Yet, despite our potential for failure, there is also hope that if this new technology is implemented properly and accompanied by a sound pedagogy, it could serve as a powerful equalizing force. In the following, Andres (1995) describes the Internet as a revolutionary tool that has the potential to change the way students learn:

The Internet offers one of the most exciting and effective ways to teach students how to both communicate and collaborate by connecting teams of students with other classrooms around the world. The creation of telecommunities can unite students and teach them to work co-operatively. Collaborative learning becomes even more significant when the students who are working together are from different nations with varied cultures, histories, and socio-political beliefs (p. 1).

In speaking of intercultural learning, he also notes:

It has been observed that the more communication exchanges among students of different ethnic and racial backgrounds, the greater the understanding and acceptance of one another as they learn their similarities often outweigh their differences. Electronic interactive communications between students, educators and the world

community offer exciting potential for gains in literacy, cultural, geographical, and socio-political understanding, preparation for the workforce and democratization of society. Collaboration in the classroom is the first step towards collaboration over the Internet. And collaboration over the Internet can be the first step towards global co-operation (p. 2).

Given this apparent potential, it is interesting to note that little has been written about how to prepare students to work in teams over the Internet. In the rush to embrace the Internet, it seems that not enough attention is being paid to the pedagogy accompanying the technology.

Cummins and Sayers (1995) suggest that the educational potential of computer-mediated learning networks can only be realized within the context of *collaborative critical inquiry* (pp. 116-117). Drawing on extensive instructional research showing that co-operative learning and active student inquiry are highly effective in promoting higher-order cognitive and academic skills, they also warn of the pitfalls of using the technology within the context of traditional instruction. This leads us to the research problem for this study.

## **The Problem**

If not accompanied by a sound pedagogy, the Internet may just be an elaborate new tool that is not educationally relevant to students. Or, if implemented inequitably in schools, it could become a divisive technology that helps to widen the gap between the “haves” and “have-nots” in our society.

## **The Purpose of this Study**

**This thesis is a case study of two urban schools, one located in the inner-city and comprised of a culturally-diverse non-mainstream student population, the other located in a middle class neighbourhood and comprised of an English-speaking, Canadian-born mainstream student population, to examine their approaches to computer networking. It seeks to identify the pedagogy accompanying the technology and the implications of this for mainstream and non-mainstream students. This approach is based upon my commitment to the use of appropriate technology within the context of a transformative pedagogy to promote equity of outcomes for all children. In particular, the thesis:**

- a) reviews the academic literature, policy documents, and arguments in the public debate on education reform (Chapter 2);**
- b) proposes a theoretical model for the study of schooling environments (Chapter 3), applies it critically in the context of comparative study (Chapters 5-9), and reviews the validity and utility of the model proposed. It uses the framework of traditional, progressive, and transformative pedagogy (Cummins & Sayers, 1995) to examine the data;**
- c) utilizes a qualitative research design. Incorporated into the design is an intervention known as action research, which was necessary in order to stimulate use of the Internet in the two schools. A technique known as portraiture is used for data gathering and presentation. Data sources consist of fieldnotes from participant observation in the schools, initial interviews conducted with the teachers and principals, ongoing e-mail correspondence with the students, teachers, and computer**

networking partners in other countries, and final interviews and focus groups with the students and teachers; and

- d) examines three major issues identified in the study as salient for the comparison of the schools in their approaches to computer networking: *pedagogy*, *literacy*, and *equity* (Chapters 7,8, and 9).

## **Research Questions**

In order to address the research problem and guide the direction of the investigation, I have formulated the following five research questions:

1. What are the possibilities and constraints for computer networking in schools?
2. How are students, teachers, principals and parents reacting to the new technology?
3. What challenges do educators face in attempting to implement Internet learning activities, policies and programs?
4. What visions of schools and society are implied by the way the technology is being implemented?
5. How are student and teacher identities being negotiated at the intersection of the pedagogy and the technology?

From these questions, further questions arose during the course of the investigation. In the final chapter (Chapter 10), I attempt to answer all of these questions.

## **Definition of Terms**

In this study, several terms are used to describe the populations studied and the technology used. In Figure 1, I have provided a list of these terms and definitions for them.

*Figure 1: Definition of Terms*

TERM	DEFINITION
pedagogy	the art and science of teaching (Page & Thomas, 1977, p.260).
technology	<i>Science.</i> the application of scientific knowledge for practical purposes; the employment of tools, machines, materials, and processes to do work, produce goods, perform services, or carry out other useful activities. <i>Anthropology.</i> more generally, any use of objects or humans to do work or otherwise manipulate the environment (Morris, 1992, p. 2176).
mainstream	refers to the people of the majority culture.
non-mainstream	refers to people who are not of the majority culture.
English-speaking	refers to people who identify their home language as English.
non-English-speaking	refers to people who identify their home language as other than English.
monolingual	said of a person/community with only one language (Crystal, 1987, p. 425).
bilingual	said of an individual or community that regularly uses two languages (Crystal, 1987, p. 416).
multilingual	said of a person/community with several languages (Crystal, 1987, p. 426).
computer networking	<i>Telecommunications.</i> a process by which two or more computing units are interconnected by a complex communications network, thus allowing them to communicate and work together (Morris, 1992, p.490).
computer technology	<i>Computer Science.</i> the study and application of computer hardware and software (Morris, 1992, p. 490).
information technology	<i>Computer technology.</i> the use of computers and telecommunications for the processing and distribution of information in digital, audio, video, and other forms (Morris, 1992, p.1107).

Internet	<i>Computer technology.</i> 1. any network that connects other networks. 2. a large network of this type that covers the U.S. and extends to Canada, Europe, and Asia, providing connectivity between governments, universities, and corporate networks and hosts (Morris, 1992, p.1129).
telecommunications	<i>Electronics.</i> 1. any process or group of processes that allows a correspondent to relay printed or written matter, moving or fixed pictures, or other visible or audible signals via an electromagnetic system. 2. the study or body of knowledge relating to such processes. 3. broadly, any communications over long distances (Morris, 1992, p. 2177).

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With respect to the above definitions, it should be noted that someone who is *non-mainstream* may be a visible minority, such as person of Chinese heritage, or a non-visible minority, such as a person of Polish heritage. Churchill (1997) notes that in Canada:

Children of first generation immigrants from northern and eastern Europe are often mistaken for mainstream “Anglos” as soon as they have acquired basic English fluency and dress in Canadian kids’ clothes. Conversely, second generation persons of southern European and non-European background (“dark skin”) are often treated as immigrants.

In this study, there was no way to prove that the students at the mainstream school did not have second, third, or fourth generation parents that were of, say, east European background. It would have been conceivable to look at the last names of the students to determine if they were “Anglo” sounding, but this would not have yielded valid or reliable results. For example, a student with an “Anglo” sounding name could have been of mixed heritage.

Maria Yau (1997) of the Research Services Department of the Toronto Board of Education claims that a student's home language, which the Board defines as the language first taught to the child at home, is the closest indicator of his or her cultural background. The Board ascertains the home language of elementary school students by asking the parent or guardian who first registers the student at the school what the student's home language is. At the high school level, it is often the student himself who provides this information. If more than one home language is claimed by a registrant, the household is classified as *bilingual*.

Appendix A reveals that in 1996, only 27.2 per cent of Sydney Carton students had a home language of English, while Appendix B indicates that 96.8 per cent of Charles Darnay students had a home language of English. This would seem to indicate that the parents at Charles Darnay are probably at least second or third generation Canadians. For the purposes of this study, I will use the term "English-speaking, Canadian-born" to refer to the cultural background of the students at Charles Darnay.

Yau (1997) notes that some immigrant groups tend to assimilate more quickly into the Canadian mainstream linguistic framework than others. She claims, for example, that German students tend to learn English and claim a home language of English not long after arriving in Canada, while it is not uncommon for Chinese students to have a home language of Chinese even when they become second or third generation Canadians.

At Sydney Carton, the population studied were of Portuguese heritage. Since I was not permitted access to school records, I was not able to determine the details of their cultural background. For example, it would have been enlightening to ascertain the region



they had emigrated from in Portugal, their reasons for immigration to Canada, their year of arrival in Canada, and the location and level of their parents' education.

Traditionally, most Portuguese immigrants to North America have come from the Azores archipelago, a poor, rural, island region of Portugal (Januario, 1995, p. 63). In recent years, however, many immigrants have come from the Portuguese mainland, which is land-linked to the rest of Europe and contains major urban centres like Lisbon. The International Languages instructor with whom I worked at Sydney Carton estimated that for the population studied, approximately 35 per cent were recent immigrants to Canada, arriving between 1990-1995. She also estimated that approximately 75 per cent of the parents were born and received all of their education in Portugal.

The region from which the students came is pertinent to this study because in recent years, Portuguese-Canadian student achievement has been an area of concern in Metropolitan Toronto boards of education (Philp, 1995). It is conceivable that some Toronto Board statistics for Portuguese-Canadian students may be based largely on the performance of those who emigrated earlier from the Azores, and not on those who have arrived more recently from the mainland.

Another detail of the students' backgrounds not revealed in Board statistics is their reason for emigration from Portugal. The International Languages instructor at Sydney Carton said that she believed a very small number (2 or 3) of the families in the population studied had immigrated to Canada as a result of religious persecution. This religious persecution was supposedly of Jehovah's Witnesses, who were being differentiated from the majority Catholic population in Portugal. However, according to Marujo (1997), this

type of religious persecution was not actually occurring. Rather, it was being used by some Portuguese immigrants as a means of gaining entry into Canada. Although many claimed religious persecution, the majority of Portuguese immigrants were, in fact, immigrating to Canada for economic reasons. Based on the information that was available to me, what may be stated here is that the students in this study were most likely not of a homogeneous Portuguese background.

With respect to the definitions for *multilingualism* and *bilingualism* in Figure 1, Crystal (1987) notes the following:

The inevitable result of languages in contact is *multilingualism*, which is most commonly found in an individual speaker as *bilingualism*. Less than a quarter of the world's nations give official recognition to two languages, according to the list on p. 357, and only six recognize three or more. However, when we look at what is taking place within each country, studying the speakers rather than the national policies, a very different picture emerges. It has been argued, in fact, that there is no such thing as a totally *monolingual* country. Even in countries that have a single official language used by the majority of the population (e.g. Britain, U.S.A., France, Germany, Japan), there exist sizeable groups that use other languages...It is an interesting irony that there may be more bilingual people in an officially *monolingual* country than in an officially bilingual one, because in the latter case there tends to be territorial separation between the groups (as in Belgium, Switzerland, or Yugoslavia) (p. 360).

Finally, with respect to the definitions which pertain to technology in Figure 1, in this thesis the terms of "computer networking", "computer technology", "information technology", "Internet", and "telecommunications technology" may at times, be used interchangeably. Unless otherwise stated, they should be taken to refer generally to the phenomenon of computer networking on the Internet.

In the next chapter, I review the academic literature, the contexts for the schools in this study, and discuss a school that has taken an inspirational approach to computer networking. In Chapter 3, I outline the theoretical model for this study and provide

reasons for its selection. Then, in Chapter 4, I discuss the methodology employed. In Chapters 5 and 6, I describe the two case schools in detail. In Chapters 7, 8, and 9, I discuss the themes which emerged from the data: *pedagogy*, *literacy*, and *equity*. Finally, in Chapter 10, I offer my conclusions.

## **CHAPTER 2**

### **LITERATURE REVIEW**

In reviewing the literature, I have identified two primary areas of concern regarding approaches to computer networking in schools. First, there are issues surrounding the technology itself. These tend to focus on questions about its power, speed, sophistication, and the like. Secondly, there are questions surrounding the pedagogy accompanying the technology. These tend to relate more to the underlying purpose or “vision” that educators have in mind for the technology.

There are also different sources of information on these issues. For example, there is the academic literature, which tends to report the results of empirical investigations in education and focuses on the theory underlying classroom practice. There is also the public debate that takes place in the mainstream media and which tends to revolve around educational policies and practices that are of immediate concern to students, teachers, principals, and parents.

In this chapter, I will: a) review the academic literature for pedagogy and technology, b) describe the contexts for the schools in this study, and d) present a school that I have identified as inspirational in its approach to computer networking.

## **The Academic Literature on Pedagogy and Technology**

In Chapter 1, I defined *pedagogy* as “the art and science of teaching” (Page & Thomas, 1977, p.260), and *technology* as “the application of scientific knowledge for practical purposes; the employment of tools, machines, materials, and processes to do work, produce goods, perform services, or carry out other useful activities” (Morris, 1992, p. 2176).

In reviewing the academic literature on pedagogy, my objective is to provide an overview of the different pedagogical orientations that exist. In reviewing the literature on technology, I focus on books and articles that address the implications of adopting different pedagogical approaches to computer networking in schools. My assumption is that any use of technology to educate first depends on pedagogy. This is because the scope of pedagogy far exceeds the scope of technology (White, 1996).

### **Pedagogy**

In reviewing the academic literature on pedagogy, it will be useful to employ the model for pedagogy outlined by Cummins and Sayers (1995) and Cummins (1996b). This model consists of three well-known pedagogical orientations: *traditional*, *progressive*, and *transformative*. Each of these incorporates different sets of instructional and social assumptions (see Figure 2). Instructional assumptions refer to the forms of language, knowledge and learning that underlie various forms of teaching, while social assumptions refer to the ways in which relations of culture and power are addressed in the curriculum.

The traditional and progressive pedagogical orientations tend to focus more on instructional rather than social dimensions. Their instructional recommendations are usually somewhat vague and non-political. However, a transformative pedagogy presumes that all forms of instruction contain social assumptions, whether these assumptions are explicitly acknowledged by the teacher or not.

*Figure 2: Instructional and Social Assumptions Underlying Traditional, Progressive, and Transformative Pedagogy*

	TRADITIONAL	PROGRESSIVE	TRANSFORMATIVE
<b>Instructional Assumptions</b>			
Language	Decomposed	Whole	Whole
Knowledge	Static/Inert	Catalytic	Catalytic
Learning	Hierarchical internalization from simple to complex	Joint interactive construction through critical inquiry	Joint interactive construction through critical inquiry
<b>Social Assumptions</b>			
Curriculum	Transmission of "cultural literacy"; Explicitly with respect to power relations	Celebrates differences but implicitly sanitized with respect to power relations	Focuses on critical examination of student experience and social realities; Explicit attention to power relations
Student Outcomes	Compliant/Uncritical	Liberal but Uncritical	Empowered/Critical

Source: (Cummins, 1996b p.154)

## Traditional Pedagogy

A traditional pedagogy argues that the components of language should be taught individually to students, starting with the most basic elements and progressing to more complex forms. For example, students are taught explicit phonics and spelling before they begin to write.

A traditional pedagogy views knowledge as fixed and inert. In a traditional pedagogy, the teacher's job is to convey information and skills to students using direct instructional techniques such as drills and the rote memorization of facts.

In a traditional curriculum, there is an attempt to transmit culturally relevant knowledge and values to students. This approach was largely popularized by E.D. Hirsch (1987) in Cultural Literacy: What Every American Needs to Know. Hirsch advocates that students memorize lists of "culturally relevant facts" which are supposed to give them the knowledge and skills they need to become productive members of society. The cultural transmission approach has been endorsed by several other conservative educators in the United States such as William Bennett (1992), Diane Ravitch and Chester Finn (1987), and Arthur Schlesinger (1991).

However, the transmission approach has also been referred to pejoratively by Freire (1983) as "banking" instruction because information is seen as being deposited into students' memory banks by teachers. Sirotnik (1983) criticizes this form of instruction, claiming it consists of, "a lot of teacher talk and a lot of student listening" (p. 29). Also, because this approach does not encourage the expression of views that clash with the existing curriculum, the power structures in place are never questioned.

Moffett (1989) warns of the danger of a "cultural transmission" approach stating that, "transmitting any heritage entails selecting some ideas, frameworks, and values and excluding others. Exclusion is built into the very idea of education as cultural transmission" (pp. 76-77). This can lead to students being unable to identify with others outside their own reference group, and inevitably result in ethnocentrism and the

intolerance of others. Unfortunately, a cultural transmission approach implicitly accepts the European traditions of the dominant culture as “culturally relevant” while explicitly ignoring the linguistic and cultural traditions that culturally-diverse students bring to the classroom (Cummins, 1996b). Predictably, culturally-diverse students do not fare as well as their dominant culture counterparts whose literate traditions are represented in the school curriculum and reinforced in the society.

Cummins and Sayers (1995) note that many of these culturally-diverse children are often mistakenly considered incapable of completing cognitively challenging activities. As a result, several compensatory programs have been developed to help “fix” their alleged deficiencies. These have included computer-based drill-and-practice programs that emphasize low-level literacy and numeracy skills (Becker, 1990; Brophy & Good, 1986).

Emerging from the traditional pedagogy literature has been an increased focus lately on *active construction*, which states that learning is maximized when teachers and students engage in collaborative contexts (Prawat, 1992). For example, Wells and Chang-Wells (1992) advocate using a wide variety of oral and written language exercises with students that emphasize action and reflection. They argue that equal outcomes for students can be maximized in a collaborative context regardless of the cultural and linguistic background of the students. McCaleb (1994) also argues that collaboration among teachers, students, families, and community is an effective means of accelerating the academic development of low-income students.



## **Progressive Pedagogy**

In a progressive pedagogy it is felt that active student inquiry is central to academic and cognitive growth. Students are encouraged to learn in a way that affords them the opportunity to integrate newly discovered information with their prior experience.

John Dewey (1963), who is regarded by many as the “father” of Progressivist Education, is known for his democratic view of the educational process and for his focus on the importance of human experience in learning. His vision is described by Eisner (1992) as follows:

For Dewey (1938), the “envelope” for the educational process was the school itself. Broader than the formal curriculum, it provided in its shared way of life the social conditions that themselves conveyed to the child the norms of social living. Although Dewey did not believe that there could be parity between adult and child in educational decision making - after all, the teacher did know more - he did believe that to the degree possible, the school and the classroom should reflect democratic principles. What this meant in practice was that schools and classrooms should offer children opportunities to formulate their own rules for social living, internal and personal needs should be respected in the creation of learning activities, and group processes should be fostered so that children learned how to use collective intelligence to cope with problems in which their peers had an equal interest....(p. 313).

While the traditional approach to language is to decompose it - break it up into its component parts for easier transmission - a progressive approach believes that language should be kept "whole". The teacher encourages students to use both written and oral language to express and share their experiences within the classroom context. This expression and sharing of experience has the effect of validating student identity.

Attitudes towards knowledge and learning are also different in a progressive pedagogy. While knowledge within the traditional curriculum is viewed as fixed and inert, in a progressive pedagogy it is seen as catalytic in the sense that new information spurs on

further inquiry. Also, learning in a traditional pedagogy often involves the memorization of facts dictated by the teacher or the textbook, whereas a progressive pedagogy emphasizes co-operative learning and the co-construction of meaning. The classroom is seen as a community of learning where knowledge is generated by students and teachers together. In this sense, there is more sharing of control between student and teacher.

While the instructional assumptions underlying a progressive pedagogy are generally supported by research, its social assumptions are seldom articulated. Their focus is largely on the child, either as an individual, or within the classroom learning community.

One of the chief criticisms of progressive pedagogy made by advocates of transformative pedagogy is that it focuses too much on the student-teacher relationship, and therefore fails to articulate a greater social vision for education. For example, within a progressive pedagogy, the topic of multiculturalism is often limited to shallow celebrations of cultural diversity. This may include the promotion of tolerance and acceptance of other cultures, but rarely challenges the inequities in power relations that exist in society.

The progressive curriculum displays several features. First and foremost, it is designed to be problem-centered. By problem-centered, Dewey meant that the art of teaching was one that enabled the teacher to so construct the environment that children would be motivated to formulate problems, or in other terms, to make their situations problematic (Eisner, 1992 p. 313).

Dewey's conception of "cognitive development", a term that he did not use himself, is consistent with the theory of psychologists such as Piaget in France and Vygotsky in the

Soviet Union, in the sense that intelligence is conceived of as an *active* process rather than a *static* entity. Vygotsky (1978), for example, argued that learning takes place:

within a “zone of proximal development” (ZPD), which is defined as the distance between children’s developmental levels as determined by individual problem solving without adult guidance and the levels of potential development as determined by their problem solving under the influence of, or in collaboration with, more capable adults or peers (Cummins & Sayers, 1995 p. 354).

Other researchers have incorporated Vygotskian theory directly into their models for how learning takes place. For example Newman et al. (1989) describe a “construction zone” that closely resembles Vygotsky’s zone of proximal development.

Several “inquiry” or “constructivist” approaches to learning have evolved in recent years that share many of the principles of a progressive pedagogy (Newman et al., 1989; Poplin, 1988; Sternberg, 1994; Tharp & Gallimore, 1991; Wells & Chang-Wells, 1992). Yet, despite the widespread popularity of progressive pedagogy in schools today, some academics are very critical of the progressive movement.

Kalantzis et al. (1990) denounce progressivism on the grounds that it romantically equalizes all types of diversity and fails to come to grips with issues of how relations of power are manifested in language, culture, and curriculum. Their explicit pedagogy for inclusion and access attempts to overcome the limitations of traditional and progressive pedagogies. Cummins and Sayers (1995) echo a similar concern in the following:

In short, progressivist pedagogy usually focuses narrowly on the teaching-learning relationship and fails to articulate a coherent vision of the broader social implications of instruction. Tolerance and acceptance of cultural differences often are implied, but critical reflection on students’ own experience and critique of social realities are not (p. 153).

## Transformative Pedagogy

Cummins and Sayers (1995) describe transformative pedagogy as using “collaborative critical inquiry to enable students to relate curriculum content to their individual and collective experience and to analyze broader social issues relevant to their lives” (p. 153). According to a model proposed by Bigelow et al. (1994), *collaborative critical inquiry* consists of the eight interlocking components listed in Figure 3:

*Figure 3: Components of Collaborative Critical Inquiry*

COMPONENT
1. grounded in the lives of students.
2. critical.
3. multicultural, anti-racist, pro-justice.
4. participatory, experiential.
5. hopeful, joyful, kind, visionary.
6. activist.
7. academically rigorous.
8. culturally sensitive.

In collaborative critical inquiry, the teacher’s role is to encourage students to think about ways in which social realities might be transformed through various forms of democratic participation and social action.

The instructional assumptions of transformative pedagogy are similar to those of progressive pedagogy, but only to a certain point. They differ with respect to their social assumptions. Cummins and Sayers (1995) explain that a transformative pedagogy aims to go beyond the progressive curriculum by attempting to have students analyze and understand the social realities of their own lives and of their communities. It also strives to develop a *critical literacy*.

Critical literacy, which is most often associated with Paulo Freire (1970), recognizes that there is great potential for the written language to encourage people to transform discriminatory practices in society. This type of literacy involves examining the political realities underlying classroom discourse and determining the methods and purposes of particular forms of persuasion. Ira Shor (1992) defines critical literacy as follows:

habits of thought, reading, writing, and speaking which go beneath surface meaning, first impressions, dominant myths, official pronouncements, traditional clichés, received wisdom, and mere opinions, to understand the deep meaning, root causes, social context, ideology, and personal consequences of any action, event, object, process, organization, experience, text, subject matter, policy, mass media, or discourse (p. 129).

Critical literacy is closely related to the social goal of encouraging democratic participation. A transformative pedagogy advocates that educators be willing to explore the ways in which dominant groups both historically and currently have maintained their power in society. Students and communities must understand how it works in order to challenge the operation of coercive relations of power in their own lives.

Critical literacy differs from the other two more common forms of literacy that are normally mentioned in the public debate: *functional* literacy and *cultural* literacy. As Cummins and Sayers (1995) and Cummins (1996b) explain, functional literacy is the literacy required to function effectively as a worker in our society - its teaching maintains the status quo, and cultural literacy emphasizes the need for shared experiences and knowledge, but it is not neutral with respect to whose knowledge it represents - it represents the dominant group in society.

Approaches to literacy instruction are significant to this study because one of the case schools was primarily English-speaking, while the other contained a large ESL population.

## **Literacy**

While there is consensus today among academics that learning to read and write is largely a social process (Bloome, Harris & Ludlum, 1991), there are different beliefs about what being “literate” actually is. For example, there are disagreements about the extent to which the home language and literate traditions of culturally-diverse students should be represented in the curriculum (Berthoff, 1981; Delpit, 1992a; Heath, 1983; Levine, 1986; Street, 1984). Whose literate traditions are actually taught is what makes the control over literacy lessons such a contentious issue.

### ***The struggle for control of literacy lessons***

Moffett (1989) explains that our society is so obsessed with controlling literacy lessons that we have become ambivalent about how to teach it to children. He claims that on one hand, we have a desire to transmit our culture to students, but on the other hand we do not want to make the learning of the culture so dull and tiresome that children resent it. Shannon (1989) also insightfully notes that the issue of control goes far beyond the student-teacher relationships to larger forces in our society:

Only after we open our classroom doors in order to look beyond the student/teacher dyad to examine the social and political relations of our work and literacy will we really be prepared to engage in the struggle for control of literacy lessons (p. 633).

This struggle for control has been played out in recent years in the whole language debate.

### ***The whole language debate***

The literacy or “whole language debate” has been referred to in epic proportions in the academic literature as “The Great Debate” (Chall, 1968) or the “Paradigm Wars”

(Stanovich, 1990). In reality, there are so many different approaches to whole language that saying one uses whole language in the classroom does not portend a great deal. Whole language has become a trend with a definition that is amorphous. For example, Cameron and Cummins (1994) argue that “whole language” seems to refer to how whole language has been interpreted and implemented in certain contexts by certain teachers, rather than to its underlying theoretical assumptions. As well, in “Topics in Language Disorders”, Sawyer (1991) rightfully points out that in the whole language debate, there is no single vision of whole language. However, she does note that the debate is inherently political, and because of this, certain people will always be left behind. To this end, she expresses the need to distinguish between a *technological* view of literacy and a *political* view of literacy:

A technological view asks, “How can we teach reading and writing better?” Different methods are tested against each other (either directly or indirectly) to determine which will produce the greatest reading and writing achievement, usually measured by test scores.

However, technological views rarely ask how reading and writing are being defined, nor what “reading and writing” better means. The social and cultural consequences of different reading and writing teaching technologies are often ignored.

A political view holds that all pedagogies derive from a political or ideological stance. A political view asks, “What power relationships are being established or maintained through this activity?” All educational activities, including reading and writing, are viewed as structuring power relationships among people and among different social and cultural ideological groups (p. 24).

Some left-of-centre theorists like Delpit (1988), Cope and Kalantzis (1993), Noble (1994) and Reyes (1992) are critical of whole language because of its lack of explicit focus on social justice, its avoidance of direct instruction to teach students genres of power, and its failure to affirm culturally-diverse students’ cultural knowledge and

promote cultural awareness (Cameron & Cummins, 1994). In writing about the literacy of African American students, for example, Delpit (1988; 1992a) argues that teachers must learn not only how to “help students to establish their own voices, but to coach those voices to produce notes that will be heard clearly in the larger society”. Also, Ladson-Billings (1992) advocates reading and writing activities for African American students which include elements of their own culture. This issue of identity as a key component of literacy instruction is elaborated on by others like Ferdman (1990) and Ogbu (1992).

Cummins and Sayers (1995) view the provision of explicit instruction to develop students’ awareness of language as complementary to whole-language instruction rather than in opposition to it. They write:

We believe it is not difficult to avoid the excesses occasionally identified in the implementation of whole-language and process writing approaches by insisting on the importance of explicit instruction to guide students’ critical inquiry and their use of both written and oral language (p. 158).

Furthermore, Cameron and Cummins (1994) argue the following:

Many educators (including the authors) whose views are generally consistent with whole language approaches would also endorse strongly an explicit focus on critical literacy and on developing students’ language awareness. This would include providing relevant explicit instruction and corrective feedback on formal aspects of language in order to ensure that students’ voices will be heard and understood in the wider society. This orientation would also strive to affirm students’ first language and culture and challenge educational structures that devalue these and other aspects of students’ identity (p. 32).

In order to develop students’ language awareness, Clark et al. (1990a; 1990b) have proposed an alternative paradigm for literacy instruction called “Critical Language Awareness”. CLA maintains that the development of a critical awareness of the world ought to be the main objective of all education, including language education. They



emphasize that the way language is viewed is an explicit expression of power and ideology. Therefore, the teaching of the meaning attached to the way language is used should be a significant focus in the school curriculum.

Finally, in “A Pedagogy of Multiliteracies: Designing Social Futures”, Cazden et al. (1996) offer another view of literacy. They suggest that we should be preparing students for the next century by teaching them multiple literacies and exposing them to a variety of representational forms. These forms may be classified as those which represent cultural and linguistic diversity, and those occasioned by new information technologies. Similarly, Sensenbaugh (1990) has described a “multiplicity of literacies” approach.

The emphasis on cultural diversity in these models of literacy leads us to the topic of intercultural learning. Intercultural learning is of particular relevance to this study because it was incorporated into the design of the networking projects undertaken in this study at both Sydney Carton and Charles Darnay Public Schools.

### **Intercultural learning**

In the literature, Cummins and Sayers (1995) describe some early intercultural learning projects that were the origins of cross-cultural computer networking. They write of Celestin Freinet and René Daniel, who were teachers in France during the 1920s, and Mario Lodi and Bruno Ciardi, who were teachers in Italy during the 1950s and 1960s. These educators started distance education by sharing curricular activities with partner classes in other locations by mail.

Recent research by Poplin and Weeres (Poplin & Weeres, 1992) confirms that students naturally have an intense interest in knowing about one another’s culture. However, they

receive very little of that knowledge from home or school. This research strongly suggests that if schools are to fulfill their goals of developing critical literacy skills among all students and preparing them to participate effectively in their societies, then they must focus on stimulating intercultural learning. This intercultural learning must start with teachers themselves. By encouraging students to talk and write about their experiences, teachers can begin to appreciate the cultural knowledge their students bring to school. Incorporation of this knowledge into the curriculum provides students with opportunities to learn from each other and to develop a critical appreciation of their own culture and that of their peers.

Poplin and Weeres (1992) believe that a focus on crossing such borders should be at the core, rather than the periphery of the curriculum. This is supported by Giroux (1988), who argues that crossing cultural borders is a necessary component of multicultural education because it allows new borderlands to result.

There are some fears, however, associated with crossing cultural borders. When this is done, the Other is allowed to infiltrate dominant cultural institutions and the feeling may arise that the subordinate class must somehow be controlled. Yet, Delpit (1988; 1992b) and Nieto (1992) insightfully note that culturally and linguistically-diverse students are forced to cross such cultural and linguistic borders every day in the process of receiving a dominant culture education. They advocate that multicultural education should be at the core, rather than at the periphery of our education system.

Kalantzis et al. (1990) are wary of certain forms of multicultural education, however, because they believe that within them there is still the opportunity for implicit messages to

be sent to students about the value of their culture by the teacher. They advocate a more explicit form of instruction which they describe as follows:

A pedagogy that shunts backward and forwards between: on the one hand, explicit exposition of the common cultural contents and social experience of industrial society, to allow social access and critique for all social groups; and, on the other hand, the experience of diversity, starting with student experience, the ethics and epistemology of pluralism. A culturally open yet socially purposeful pedagogy...it is the role of schools to induct students into those discourses and genres that are the most powerful in society (pp. 82-83).

Kalantzis et al. advocate that educators attempt to bridge the gap between dominant ways of knowing and other marginal discourses so that both are transformed in the process.

A final form of transformative pedagogy that I wish to discuss, and which also incorporates intercultural learning, is *global education*. In the section that follows, I review the literature on global education as a potential framework for computer networking.

### **Global education**

“Global education” is described by Moore (1992) as follows:

Global education seeks to shape and harmonize the teaching and learning processes in schools, thereby helping students develop the knowledge, skills and attitudes necessary for participation in a world where ecological sustainability and interdependence are the conditions of human survival and intercultural communication the doorway to human fulfillment (p. 9).

A key feature of this definition is that interdependence is a condition of human survival.

Global education explicitly acknowledges an interconnectedness among all people and things. This interconnectedness is a feature of a world view that Pike and Selby (1988) describe as “systematic”:

As we gallop towards the twenty-first century, we are witnessing a relatively advanced stage in the continuing and quickening transformation of the world from a *collection* of many lands and peoples to a *system* of many lands and peoples (p. 4).

This systematic world view is apparent in Hanvey's (1976) framework for global education, which is comprised of the following five essential elements or dimensions: a) perspective consciousness, b) state of the planet awareness, c) cross-cultural awareness, d) knowledge of global dynamics, and d) awareness of human choices (p. 163). Of these elements, Coulson (1996) suggests that cross-cultural awareness is the most important because it forces us to see things from another's point of view. He argues that if we acquire the ability to delve into another culture and look back at our own actions, motivations, and beliefs from the other culture's perspective, we will be better able to understand each other and together face the many problems that confront our planet.

Critical pedagogy is also an integral part of global education. This is evident in the goals for a global teacher outlined by Pike and Selby (1988):

1. is rights-respectful and seeks to shift the focus and locus of power and decision-making in the classroom,
2. is concerned about culture and perspectives, and
3. is a facilitator (pp. 272-274).

Global education faces opposition from those who maintain a different world view and vision for students. Some seem to have trouble accepting the *holistic* or *systematic* world view because it is in direct opposition to the *mechanistic* world view of Western society. O'Sullivan (1996) points out that in North America, Western scientific thinking is viewed as superior to the thinking of other cultures. In the past, some cultures that have a larger cosmology embedded in them have been labeled "retrograde"; and peoples with mythic interpretations of the universe have been labeled "primitive".

Other detractors from global education include proponents of education reform, or what O'Sullivan terms the "global economic competitiveness" movement. This includes people in the business community and organizations such as the Conference Board of Canada. These people pose a significant threat to the growth of global education because they fail to see the advisability of its humanitarian purpose. It is interesting to note their opposition to it and to other transformative pedagogies' strong advocacy of multiculturalism and intercultural learning in view of the fact that many corporations are presently looking to expand into newly opened Eastern markets. This is creating a need for employees with increased knowledge of other languages and cultures. If anything, business leaders should be encouraging global education in schools today because of the cultural bridge-building opportunities that this form of education could provide.

Today, proponents of global education include environmentalists, animal rights activists, concerned parents, students, and teachers. According to Kelleher and Ball (1992) a 1992 survey of 1200 Ontario teachers found that 67 percent had significantly altered their approach during the last two years to incorporate such a perspective. Pike (1996) comments on how global education is being incorporated into the curriculum:

New courses and curriculum units, in many subject areas and at all grade levels, increasingly reflect global education priorities. Pre- and in-service courses in global education are offered in universities; master's and doctoral theses are being written; and a growing body of Canadian literature on global education is now available in research and professional journals...

Lasting legacies of the Education for a Global Perspective can be found in the Ontario Teachers' Federation policy on education for a global perspective and also in the learning outcomes of The Common Curriculum (p. 7).

Even though it has been mentioned in some policy documents, global education is still only being paid lip service to in many cases. Many teachers are still not familiar enough with what global education is or how to practice it. Also, the body of literature on global education is still growing and it is not yet as well established as some other educational movements that are consistently practiced in Ontario classrooms. Pike (1996) explains the uncertainty associated with global education as follows:

...uncertainty and confusion about the nature and purpose of global education remain. A variety of definitions, derived from different sets of values and assumptions, co-exist uneasily as educators, projects, and boards across the country claim to be “doing global education”. An even wider range of perceptions of global education can be found when one explores the reality of classroom practice. We are witnessing in Canada, perhaps, what Popkewitz (1980) described as “global education as a slogan system”, whereby the vagueness of the goals allows the needs and interests served by particular programs to be wide ranging and sometimes at variance with those publicly expressed or assumed (p. 7).

Having reviewed the academic literature on pedagogy, I will now review the literature on the aspects of technology identified as pertinent to this study.

## **Technology**

In the broad spheres of activity that the word “technology” encompasses, I have chosen to focus on the literature that is concerned with the implementation of computer networking in schools. Specifically, I will review books and articles that address the pedagogical considerations of implementing computer networking in schools. My reasons for selecting this focus are rooted in my belief that choices concerning pedagogy must be made ahead of or in tandem with the implementation of the technology, and in my commitment to the use of computer networking within a transformative pedagogical framework. I will start by discussing three issues identified in the literature, followed by a review of three different pedagogical visions for the technology.

### **Issues Identified in the Literature**

Winkelmann (1995) identifies the following three broad areas of concern with computer networking: a) the role of the teacher, b) the nature of student participation, and c) the politics of computer-usage.

#### **The role of the teacher and the nature of student participation**

The role of the teacher and the nature of student participation refer to teachers’ attitudes towards technology and the sense of loss experienced by teachers in computer networked classrooms. Some authors have attempted to study this process of adapting to a new technology and a new environment. For example, Fowler and Wheeler (1995) have studied how teachers use electronic networking with their students, and Kurhsan et

al. (1994) have studied K-12 teachers' roles as moderators in educational telecommunications projects.

Other researchers have examined the potential uses of the Internet with special populations. For example, Delzell (1996) has written about classroom projects for special needs students and students with learning disabilities, and Ryba et al. (1995) have reported how computers are being used with special needs students in New Zealand. Still others have written about the potential uses of the Internet with urban and rural students (Burnett, 1994; Rogan, 1996), or using the Internet in first and second language classrooms (Garrett, 1991; Krause, 1989; Little & Brammerts, 1996; Marcos, 1994; Warschauer, 1995a; 1995b).

In order to assist educators, a number of practical Internet guides have also emerged. For example, Jill Ellsworth's Education on the Internet (1994) and Elizabeth B. Miller's (1994) The Internet Resource Directory for K-12 Teachers and Librarians are designed for educators who are beginning to explore cyberspace. They designate sites of interest for K-12 education and describe how to access them, as well as discuss the importance and benefits of Internet access for K-12 schools, and offer guidelines and tips for getting started. Judi Harris' (1994) Ways of the Ferret: Finding Educational Resources on the Internet attempts to demystify Internet terms and concepts. There are myriad examples of actual Internet sessions, and information on how to find resources, as well as an appendix of Internet sites related to education. Carvin's (1996) EdWeb page is a web site that welcomes educators to the web, shares ideas about using the Internet to improve educational practice, and offers other sites for educational resources. There are also



several resources available for teachers on the practical aspects of designing networking projects (Harris, 1995; Levin, 1989; Rogers, Andres, Jacks & Clauset, 1990). In addition, Owen, Owsten and Dickie (1995) have authored a resource book on the Internet for high school and university students.

One of the audiences addressed in the academic literature appear to be educators whose primary interest is the technology and the new teaching opportunities it affords. Consequently, several articles on computer networking have appeared recently in *technology* journals (Abilock, 1996; Hanson, 1995; Neubarth, 1995; Pool, 1995; Rotenberg, 1994; Weiss, 1996), and *education* journals (Atkins, 1993; Berenfeld, 1996; Howard-Vital, 1995; Kalmbacher, 1996; Lieberman & McLaughlin, 1993; Riel, 1996; Thomasson, 1996). In addition, pertinent to this study, several *library science* journals have addressed the librarian's role as the new "information manager" of the 1990's (Gifford, 1992; Mecklenburger, 1995; Scott, 1996; Silva, 1995; Valauskas & Ertel, 1996).

In attempting to address the needs of these various audiences, it is inevitable that some groups will be left out. This is one of the chief concerns in the body of literature concerned with the politics of computer usage.

### **The politics of computer-usage**

Earlier in this chapter, I described Sawyer's (1991) alternate visions of literacy as either *technological* or *political*. A similar model may also apply for the alternate visions of computer networking. For example, if one approaches computer networking with a *technological* view, then the focus is placed on the hardware. The technology is merely a tool in need of a manual or instructions. However, if one adopts a *political* view of

computer networking, then the technology is an inherently political resource that wields power and is capable of altering traditional classroom relationships. The problem with the *technological* approach is that it is too vague with respect to power relationships in the school and the broader society. As White (1996) notes, technology is anything but a neutral entity.

Several authors have attempted to address the social, cultural, and political impact that the Internet is having (Barron, 1996; Brook & Boal, 1995; Froese-Germain & Moll, 1997; Muffoletto, 1993). Some have been openly critical of what has been labeled the new “regime of technology” (Noble, 1994; Olson, 1987; Sullivan, 1983). For example, Christian-Smith (1991) has warned about the gender bias that currently exists in educational software and books. She holds the powerful publishing companies who produce them responsible for its perpetuation. Gender inequity in computing is largely a result of several well-entrenched societal attitudes (see Appendix C).

Besides gender inequity, one of the most widely discussed issues in the literature today is inequity of access due to economic factors .

### **Equity of access**

Several authors have addressed the equity of access issue (Becker, 1992; Schutte, 1995). For example, in “Educational Equity Issues in an Information Age”, Sayers (1995) argues that in our age of rapid technological change, we run the risk of producing a society of “haves” and “have-nots”. He points out that how technology is used and who gets to use it are realities that tend to conform to the broader pedagogical orientations that prevail within schools. This would seem reasonable, since the pedagogical orientations

discussed (traditional, progressive, and transformative) place different emphases on issues such as inclusion. For instance, a traditional pedagogy places less importance on equality in the computing experience than does a transformative one, since in a transformative pedagogy, issues of power are at the core.

A good indicator of equity is the number of students who have access to computers at home. In a recent article, Duffy (1996) cites a Creative Research International Survey which found that in Canada, 72 per cent of high-income families have a computer at home, compared to 32 per cent of low-income families. Similarly, students living in high-income families were found to be three times more likely to have Internet access than others in their age group. Schools are not compensating for this inequity, either; The Council of Ministers of Education recently reported that there is only one computer for every eight students in Canada.

In Canada, Barlow and Robertson (1994) have argued that big business is using technology as a means of gaining access to schools so they can wield their influence on the next generation of consumers: students. Yet, while Barlow and Robertson are skeptical of the introduction of information technology into schools, others like Cummins and Sayers (1995) view its arrival as more opportunity than threat:

While not disputing the essentials of their analysis, we feel that Barlow and Robertson and others who view encroaching technological invasion as yet another attempt to plot to subvert democracy underestimate the potential of relatively low-tech access to the Internet as a forum for resistance to coercive relations of power. We view the opportunities that technology offers to bypass “the system” as positive, since any system, whether controlled by governments, unions, or corporations, is intended to limit access to information and alternative perspectives. Our concern as educators is not to persuade students to our point of view but to allow them access to alternative perspectives so that they can arrive at their own informed judgments. Learning how to control, rather than being controlled by the technology, is essential to education in the twenty-first century (pp. 173-174).

Since, as I have already stated, the pedagogy accompanying the technology is related to whether the computer is simply maintaining the status quo or capable of acting as a potential agent of change, I will now examine some of the different pedagogical visions of computers in the literature and discuss the implications of each.

### **Pedagogical Visions of the Technology**

The way teachers view computer technology is reflective of their pedagogical orientation and of their perceived role as educators. The pedagogy accompanying the technology is, therefore, crucial, because it influences how the technology is distributed and used. For example, if teachers view the technology as a “tutor”, they may merely use it as an alternative means of delivering drill-and-practice exercises which reflect the transmission or banking model. Under this model of pedagogy, few original ideas are generated by the students. Rather, the “correct” information is seen as being deposited into students’ memory banks by the computer, which rewards them for providing matching responses. However, if the teacher views the technology as a “tool”, then there are opportunities for the technology to liberate students from the direct transmission of knowledge and to become engaged in more active learning that is characteristic of a progressive orientation. Or, if the teacher views the computer with a transformative pedagogical framework, there is also the opportunity for the technology to become a powerful means of enabling students to examine the broader social issues that affect their lives. This can be done by carrying out projects on the Internet that incorporate

collaborative critical inquiry. Let us now examine further each of these different pedagogical visions of the technology.

### **The technology as “tutor”**

The view of technology as a tutor originated in the 1960s as Negroponte (1995) notes in the following:

In the 1960's, most pioneers in computers and education advocated a crummy drill-and-practice approach, using computers on a one-on-one basis, in a self-paced fashion, to teach those...awful facts more effectively (pp. 198-199).

In the past, many computer-based drill-and-practice programs were designed for poor inner-city children. They were considered incapable of cognitively challenging activities, so the computer was used to “fix” their alleged deficiencies. These programs emphasized low-level literacy and numeracy skills. Brophy and Good (1986) and Becker (1990) have pointed out that the underlying stereotypical assumption of these programs is that low-income students need more review, drill and practice, and lower-level questions than their higher achieving middle class counterparts.

### **The technology as “tool”**

A progressive view of technology as a tool is one in which students use the computer to carry out research and locate information for school projects, often in a cooperative learning situation.

The problem with viewing the computer as just a tool is that technology may be valued only for technology's sake. In other words, the fascination with the machine may result in increased time spent learning, but the content of the learning may be more about how to use the technology than about the subject matter that the students are supposed to be

learning. Stoll (1995) points out that just because students are motivated and actively engaged in democratic learning that is meaningful to them, does not mean that they are necessarily learning anything significant:

Then there's the myth that our computer networks will bring diversity, culture, and novelty into our classrooms and homes. I hear this alongside the rapid expansion of cable-television systems - they promise five hundred channels that will let us pick an entertaining and informative program from hundreds of offerings...(p. 21).

Stoll is skeptical about the enjoyment that students seem to derive from using the technology, because, he claims, just because children do something willingly, even eagerly, is not a sufficient reason to believe it engages their minds. He reminds us that enjoyment, per se, is not an appropriate goal for education.

However, Turkle (1995) contends that computers' and especially the Internet's significance is that it is allowing us to see ourselves in significantly different ways. In Life on the Screen: Identity in the Age of the Internet, she describes the identity-transforming relationships that are now possible because, in cyberspace, we can talk, exchange ideas, and assume personae of our own creation. She describes the dual nature of the computer as follows:

At one level, the computer is a tool. It helps us write, keep track of our accounts, and communicate with others. Beyond this, the computer offers us both new models of mind and a new medium on which to project our ideas and fantasies (p. 9).

Today, there are researchers involved in a ground-breaking and pedagogically significant computer networking projects that are based on a progressivist orientation. For example, at the Ontario Institute for Studies in Education at the University of Toronto, cognitive scientists are exploring the uses of Computer-Supported Intentional

Learning Environments (CSILE) (Scardamalia, 1992). CSILE is a communal database with text and graphics in which students are able to jointly construct knowledge together about particular real-world problems.

Despite the evident benefits of environments like CSILE for the cognitive development of the individual child, this type of computer learning does not explicitly advocate engaging students in critical thinking about the social forces and power structures that affect their lives. The problem with viewing the technology as being merely a tool is that its non-neutrality and its potential to alter power relationships are ignored.

### **Computer networking with a transformative pedagogical framework**

Viewing technology from a critical perspective can mean different things to different people. According to some, the technology is a way for business and industry to market to and influence students. Under this scenario, the technology has a coercive and restricting purpose; it is a means for corporations to influence its future consumers and workers, the students.

However, an alternative vision of technology from a critical perspective is also possible. The technology can also have an empowering role. When accompanied by a transformative pedagogy that incorporates the elements of collaborative critical inquiry, it can help students to think more critically about the educational and societal power structures that affect their lives.

This vision of technology as a transformative agent has been addressed in the literature in the context of culturally-diverse students. (Cummins, 1996a; Cummins & Sayers, 1995; Sayers, 1991; Sayers, 1995). For example, in writing about multiculturalism and

technology, Roblyer (1996) states that computers aid the teaching of multicultural to a certain point. In an interview in *Educational Technology*, Streibel (1993) offers a situated critical pedagogy framework for computers which emphasizes the “emancipatory” potential of the technology. Under this framework, teachers create social spaces (which may include electronic learning spaces such as computer networks) within which the learner may be drawn toward certain qualitative goals. Winkelmann (1995) also describes a vision of collaborative computer networking that is based on a critical pedagogy. As well, Wishnietsky (1993) describes the process of developing a global education classroom utilizing telecommunications technology. He states that in order to establish a truly global classroom, the teacher or teachers in charge need to have a thorough understanding of the philosophical underpinnings and teaching strategies applicable to global education (p.25). Several other authors have recently written about using the Internet to help students acquire a global perspective (Diem, 1989; James, 1993; Lee & Knupfer, 1995; McIsaac, 1993; Schrum, 1991).

Having reviewed the academic literature for both pedagogy and technology, I will now turn to a discussion of the context for the schools in this study. This section will include a review of recent Ontario policy documents and a examination of issues in the ongoing public debate on education reform.



## **The Context for the Schools in this Study**

A context may be defined as “the circumstances in which a particular event occurs; a situation” (Morris, 1975). The context for this study was driven by the original research questions in Chapter 1. In attempting to discern the answers to these questions, two distinctively different case schools were selected. Part way through the study, the context also grew to include the homes of several inner-city students and parents. This context was driven by the themes which arose from the data: *pedagogy*, *literacy*, and *equity*.

In order to fully understand the contexts selected, it would be useful for the reader to have some information about the broader educational issues and policies that impact upon them. In the section that follows, I will review arguments in the public debate on education reform in Canada and discuss some key Ontario and Toronto Board of Education policy documents that have shaped the approaches to computer networking over the past 10 years.

### **Education Reform: The Ongoing Public Debate**

Over the years, there has been a lot of discussion and debate about education reform and the restructuring of schools. This is because, as Cummins and Sayers (1995) point out, there are several important questions about the purpose of education, such as: “What do we want students to know?”, “What values should they espouse?”, “What job-related skills should they possess?”, and “How should schools respond to diverse cultural, linguistic, religious and sexual orientations?” (p. 82).

Even though there has been a lot of discussion and debate, there is still no consensus on the types of reforms that should be implemented in schools. This is because there are different beliefs about education, and different conceptions of the type of student that should emerge from several years of compulsory education.

During this century, two major pedagogical orientations have competed for supremacy in North American schools. *Traditional* or *back-to-basics* advocates view the principal role of education as imparting practical knowledge and skills to students in order to prepare them for the industrial needs of society. *Progressive* or *child-centred* advocates view the primary role of education as fostering students' personal growth and cognitive development.

### **Back-to-basics arguments**

In recent years, back-to-basics advocates have been very critical of Canadian public education. They believe that high school drop-out rates are too high, and cite surveys suggesting that one-third of Canadians are functionally illiterate. They claim that literacy approaches like whole language learning and process writing are to blame for declining literacy rates. Big business and industry support this position and argue that the progressive or child-centered curriculum produces graduates who are ill-equipped in the functional literacy skills that they believe are necessary to make Canadian workers competitive. Another common belief among back-to-basics advocates is that multicultural education contributes to a sense of national disunity and distracts from a focus on the transmission of a core curriculum.

Recent articles have echoed this sentiment. For example, an article in the magazine *Western Report* recently exposed the “perils” of a progressive pedagogy (Staff, 1993a). Another article in *MacLean’s Magazine* (Staff, 1994) asks if we are “cheating our kids” by not returning to back-to-basics instruction. Former *Globe and Mail* education correspondent Andrew Nikiforuk expresses his considerable frustration with North America’s educational system in statements such as the following:

North America’s educational system has fallen from grace, not with an angelic flutter but with a thud. If the U.S. school system resembles a homeless beggar on the streets of New York, Canada’s expensive counterpart definitely limps along in a state of humiliation and confusion. Our schools are far from what people expect them to be (Nikiforuk, 1993 p. xi).

Another tireless crusader against the progressive education movement in Canada is Mark Holmes (1994), a former professor of educational policy at the Ontario Institute for Studies in Education. In his book, Educational Crisis: Problems, Causes and Solutions, he identifies the following problems (see Figure 4) with the Canadian education system:

*Figure 4: Problems with Canadian Education System According to Holmes*

PROBLEM
1. lack of a national sense of education (policy and focus).
2. public dissatisfaction.
3. inequitable financing.
4. failure to understand and appreciate research on effective instruction and effective schools and accountability for student achievement.
5. mediocre basic achievement in math and science and literacy.
6. failure to prepare young people for work.
7. failure to provide parents with reasonable choices regarding their choice of schools.

### ***The “declining literacy rate”***

One of the most common problems cited by back-to-basics reformers about progressive education is that it contributes to declines in literacy rates. For example, the magazine *Western Report* (Staff, 1993b) reports that three million more illiterate young people will be released into an increasingly competitive job market by the year 2000. Back-to-basics proponents blame this problem largely on the whole language approach to literacy instruction characteristic of a progressive pedagogy.

According to the back-to-basics view of literacy, students should not write extensively until they know how to read and spell. To achieve this, they advocate techniques such as phonics and reading groups. In *If Learning is so Natural, Why am I Going to School: A Parent’s Guide*, Nikiforuk (1994) offers the following advice to parents:

Students who need good sequential instruction in phonics (and that may well be half the class) should get it at this time. If your school is not prepared to build upon foundations laid in kindergarten or to offer systematic phonics instruction in grade one to those students who need it, then find a school that is prepared. Don’t waste time fighting ill-trained educators who put theory ahead of the needs of children (p. 239).

### **Child-centered arguments**

#### ***The myth of a declining literacy rate***

Contrary to this cynical outlook, Barlow and Robertson (1994) believe that Canadian schools are doing a superlative job and that reports of high levels of functional illiteracy or declining standards are myths. The myriad of task forces, studies and surveys documenting the decline is evidence of the pervasive influence of big business, which they

argue has pushed governments to this erroneous conclusion. Public education is under severe stress, they concede, but much of the so-called evidence of failure in the public school system originates in the myths spread by educational critics and expressed in skewed statistics about the costs of education, the drop-out rate, and the prevalence of illiteracy.

What has really changed is the nature of society and the nature of the workplace, according to Cameron and Cummins (1994). Today, a broader range of literacy and numeracy skills are needed, and this is partially due to technological change that has come with the “information age”. While we need to upgrade levels of literacy and numeracy, this upgrading does not stem from a decline in educational standards, but from changes in the nature of the workplace.

Cameron and Cummins (1994) argue that the chief problem with the back-to-basics discourse is its underlying sociopolitical intentions. They claim that it marginalizes issues related to the academic development of culturally and linguistically-diverse students. According to them, a back-to-basics curriculum teaches only one type of literacy, the monocultural literacy of the dominant culture, which is transmitted to students using direct instruction. This type of pedagogy favours students who already come from the dominant culture, and puts culturally and linguistically-diverse students at a disadvantage. In this way, back-to-basics reforms tend to ignore the reality of cultural diversity.

Cultural diversity is very significant in terms of this study. English as a Second Language (ESL) students now constitute the *mainstream* population in Canadian urban centres like Toronto (Cameron & Cummins, 1994). The Toronto Board of Education is

one of the most culturally-diverse boards in the world. In the context of this study, Sydney Carton School contained a culturally and linguistically-diverse student population, including a large number of students of Portuguese heritage.

Recent reports indicate that Portuguese-Canadian students are at a much higher risk of dropping out of school than are their classmates from other ethnic backgrounds, and are disproportionately represented in the lowest academic levels (Januario, 1995; Philp, 1995).

Januario (1995) claims:

...although they do not typically fall within the category of “visible minority”, Portuguese-Canadians are considered to be a highly at-risk ethnocultural minority within the school system because the socio-economic and language background of those immigrants did not equip them to deal with a school system geared to the Anglo-saxon middle-class (p. 64).

In a recent *Globe and Mail* article, Philp (1995) interviews Walter Lopes, a Toronto Board community relations adviser who states that part of the problem for Portuguese-Canadian students stems from the fact that there are few Portuguese-Canadian principals and administrators in the Toronto Board of Education, and not a large number of Portuguese teachers. Lopes adds, “The Portuguese community is the most working-class community in Toronto...they can't help their children in most subjects, and often don't have the English language” (p. A6).

## Ontario

Citing drop-out rates in Toronto schools, back-to-basics advocates like Holmes have conveniently found fodder for their argument that the heart of Canada's educational problem lies in the Province of Ontario:

Ontario, the most populous province, with about half the anglophone school population on which many studies are based, is the centre of Canada's educational problem (Holmes, 1994 p. 80).

Others like Clayton (1996) have described Ontario's progressive, child-centred curriculum as an "experiment gone bad" in North American education.

Since it was elected on June 5, 1995, Ontario's Progressive Conservative Government has announced several back-to-basics reforms. In fact, shortly after taking office, the Minister of Education was inadvertently caught on tape saying that he would like to "create a crisis" within the Ontario education system to justify his agenda for back-to-basics education reforms.

Many teachers and parents have reacted to the government's back-to-basics reform agenda. Specifically, they have expressed concern about the speed at which the government is moving, the lack of consultation in the process, and the feeling that the government is not considering the implications of its actions.

In the next section, I will review key Ontario and Toronto Board policy documents that have impacted the issues of *pedagogy*, *literacy* and *equity* for the schools in this study.

## **Policy Review**

One of the most notable policy documents released in Ontario in recent years is The Common Curriculum: Policies and Outcomes Grades 1-9 (Ontario Ministry of Education and Training, 1995a). From this point forward, I will refer to this document simply as The Common Curriculum. Originally released in draft form in 1993 and finalized in 1995, it clearly outlines what students are expected to know and when they are expected to know it. It does this by providing objective and consistent indicators to determine how well students are learning. The document's foci include: learning outcomes, equality of education for all students, integrated learning, excellence and equity, accountability and standards, and collaboration. It advocates education for change, employability skills, skills for life-long learning, and a global perspective.

In response to The Common Curriculum, the Toronto Board of Education undertook a review and revision of its curriculum from Junior Kindergarten (JK) to Grade 9 and came up with A Curriculum For All Students: Junior Kindergarten to Grade 9 (Toronto Board of Education, 1995a). This document describes by subject and grade what students are expected to achieve as a result of their school experiences to the end of Grade 9. Together, the following six graduation outcomes in Figure 5 encompass the knowledge, skills and values that children are expected to acquire as they develop into adulthood:



*Figure 5: Graduation Outcomes from The Common Curriculum*

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**OUTCOME**

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1. literacy.
  2. aesthetic appreciation and creativity.
  3. communication and collaboration.
  4. information management.
  5. responsible citizenship.
  6. personal life skills, values and actions.
- 

With the appearance of personal computers in the classroom in the mid 1980's, the Toronto Board of Education published a report called Equitable Learning With Computers Now: A Support Document to 'Learning With Computers the Next Few Years' (Brooks et al., 1987). As the title suggest, the Board showed an early concern with the fair distribution of computers. This concern has not changed today, although some schools have become frustrated with the Board's preoccupation with equity and have proceeded to acquire computer resources on their own. As individual educators and parents have witnessed schools in suburban boards like North York and Durham that are more technologically advanced, they have wondered why Toronto Board schools have not been able to accomplish the same.

In 1991, the Toronto Board of Education published Learning With Computer Technologies: Future Directions 1991-1995 (Toronto Board of Education, 1991). This five-year plan for computer usage in the Toronto Board stresses issues of equity, including gender and economic. Some of its general strategies concern cross-curricular and extra-curricular approaches, software selection, effective classroom strategies, role modeling and career goals. Specific recommendations are made for elementary and secondary school teachers, principals, and superintendents.

In 1993, the Ontario Ministry of Education and Training published a report entitled Computers Across the Curriculum, Junior Kindergarten to OACs: Resource Guide (Ontario Ministry of Education and Training, 1993). This document provides direction to Ontario educators on how to integrate computer technology, on an equitable basis, into all areas of the curriculum. It discusses aims, equity in education and ethical questions, and contains sections on individual and general characteristics and needs of young adult learners. It also addresses the school and classroom climate, resources and activities, design considerations and planning and implementation, evaluation, and the roles and responsibilities of school boards, principals and teachers.

In 1995, the Ministry of Education released Information Literacy and Equitable Access: A Framework for Change (Ontario Ministry of Education and Training, 1995b). This report calls for school boards and schools to build on the strengths of their school libraries so that in addition to performing the traditional function of libraries, they become the nucleus of the school's information network and a window to the world of knowledge beyond.

Soon after the publication of this report, a joint response was issued by the Toronto Elementary and Secondary Teacher-Librarians (1995). It supported the report's goals, but voiced concerns about the day when libraries might "virtually" disappear or when teacher-librarians might somehow be blamed for their lack of "entrepreneurial" skills. It very pointedly asks the following questions:

Are teacher-librarians becoming irrelevant stage magicians whose ultimate trick will be to make themselves disappear? Or are they pioneering voyagers, reshaping library information centres by engaging future technologies with critical expertise and imaginative joy?

This response by the teacher-librarians is pertinent to this study because one of the participants was a teacher-librarian.

Some outside agencies have also been solicited for their advice on the implementation of technology in local school boards. An IBM study entitled Metropolitan Toronto Federation of Public School Boards: Information Technology Strategy: Final Report (Group, 1996) found that students across area boards did not have equitable access to information technology and that there was a wide variance with respect to: a) the age and deployment of personal computers in the classroom, b) the utilization of computers in the classroom, and c) the integration of information technology in The Common Curriculum. The report states that change would require the commitment and active participation of all area boards towards the transformation of the Metropolitan Toronto Federation of Public Schools to a co-operative environment. Under this proposal, the area boards would continue to operate independently, but would co-operate and co-ordinate activities through the co-operative with respect to the uses of information technology (i.e. they would share resources, policies, training, staff development, and support departments).

In 1996, the Toronto Board of Education released a document called Information Technologies in Toronto Schools: Curricular and Administrative Issues and Administrative Issues and Directions (1996a). The report includes a five year plan for the implementation of technology with the principles outlined in Figure 6.

*Figure 6: Recommendations from Information Technologies in Toronto Schools: Curricular and Administrative Issues and Directions*

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**RECOMMENDATION**

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**Equity**

equitable funding.

equitable access.

gender equity.

**Excellence in the Curriculum**

support and assistance to teachers.

improving efficiency and effectiveness of administrative services.

**Promoting Accountability**

support and monitoring.

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**Report of the Royal Commission on Learning**

Perhaps the most comprehensive report on education in the Province of Ontario during the past 10 years was For the Love of Learning: Report of the Royal Commission on Learning (Begin et al., 1994). After a great deal of research and consultation across Ontario, the authors recommended four key strategic “engines” of reform. The fourth one advocates, “the use of computers and related technology to establish the relevance of formal schooling to the world outside of schools, and, with the help of teachers, to help young people learn to think in more creative, co-operative, sophisticated ways” (Begin et al., 1994 pp. 9-10). With respect to this engine, the authors specifically note:

...perhaps the least expected discovery that we made concerns the remarkable potential that information technology - computers and related telecommunications in particular - has for revolutionizing teaching and learning in the most positive and exciting ways imaginable (Begin et al., 1994 p.18).

In a section of the report entitled “Learning, Teaching, and Information Technology”, the authors identify information technology in the context of education reform and

comment on the conditions necessary to successfully integrate it into the curriculum (see Appendix D).

## **Recommendations**

After outlining their findings on information technology, the authors list the recommendations listed below in Figure 7.

*Figure 7: Recommendations from the Report of the Royal Commission on Learning*

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### **RECOMMENDATION**

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The teacher should go from a “know-all guide to a student facilitator; from soloist to accompanist.

In-service and pre-service courses should be added.

Electronic bulletin boards should be used for sharing professional information.

The Ministry of Education and Training should give priority to budget increases to policies and programs for acquiring information technology, as well as for the development of networks in the classroom.

School boards should be given donations from the private sector.

The Ontario government and business community should work more closely together.

Schools and community centres should provide extended hours.

Circular 14 should be expanded to include learning materials other than textbooks (i.e. software and videotapes).

The Ministry of Education and Training should play a central role in coordination and implementation.

This implementation should be outcomes-based.

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They make the point that the implementation of information technology in schools is inevitable, but that one model of implementation would not be appropriate for all schools.

Therefore, each school must be evaluated based on its own context. The report recommends that the Government of Ontario, working together with school boards and other appropriate agencies, commit itself to ensuring that every classroom in every publicly funded school in Ontario is connected to at least one local computer network and

that, in turn, this network be connected to a provincial network, a national network, and to the Internet.

An interesting aspect of the report's recommendations is the emphasis on using information technology with a "Canadian" content and perspective. The authors claim that this is needed because a large percentage of the software currently available is of American origin. Yet, "What is Canadian?" is a question that is not easily answered. As Canada has become increasingly culturally-diverse in recent years, especially in large cities like Toronto, the potential for information technology to shrink the distance between cultures has also increased. It is curious that the authors do not recommend more emphasis on a "global" perspective as opposed to just a "Canadian" one. The importance of attaining a global perspective was discussed earlier in this chapter.

### **Policy Summary**

Some of the policy documents reviewed here do seem to advocate pedagogically sound approaches like whole language instruction and global education, which were discussed earlier in this chapter. For example, The Common Curriculum incorporates many of the principles for acquiring a global perspective.

Yet, despite mentioning these principles, these documents do not seem to provide educators with enough information on how to put these theories into practice. For instance, the policy documents that address the use of the Internet strongly acknowledge the need for equity of access, but they seem to fall short in providing educators with enough information about the kind of pedagogy that should accompany the technology.

Cummins and Sayers (1995) warn us of the possible consequences of such an omission.

They remind us that most recent policy documents in North American education have been:

...either naive or cynical: naive to believe that dramatic improvements in educational readiness and achievement will evolve miraculously in the absence of massive investment in the communities that populate the decaying and violent streets of...inner cities; cynical because proclamations...create an illusion of concern and intervention that, in reality, reinforces rather than dismantles the social distribution of power and resources that determines who succeeds and who fails in our schools (pp. 7-8).

So far in this chapter, I have reviewed the academic literature on pedagogy and technology and discussed the context for this study in terms of arguments made in the public debate on education reform and selected Ontario and Toronto Board policy documents. In the third and final section of this chapter, I will describe an inspirational school that has managed to implement computer networking with a transformative pedagogical orientation despite being located in one the poorest inner-city neighbourhoods in the United States.

## **An Inspirational Model**

Since much of this study revolves around my interpretation of the settings, it would perhaps be illustrative for the reader to see a model school which inspired me in my original search. It was particularly important to find and incorporate this model because it provides a living example of the type of approach to computer networking advocated by Cummins and Sayers (1995). In Appendices E, F, G, and H, a more complete picture is given of that model. Here, I would like to highlight only the salient points of my review of the school which incorporates the three dimensions of this study: a) pedagogy, b) literacy, and c) equity.

### **Pedagogy**

The school is Ralph Bunche Public School (RBS) in Harlem, New York. Its tale is told on the school's web page (see Appendix E) where the teachers and students have presented a vivid portrait of themselves for all to see, thereby realizing Marshall McLuhan's visionary words, "the medium is the message".

In a telephone interview I conducted with Paul Reese (1997), the computer and technology coordinator of the school, I asked the following question: "What would you say is the overall vision for your school with respect to the implementation of technology?". He replied that Ralph Bunche's various networking projects simply reflected the background and interests of the school population, along with the normal subject requirements of the curriculum. Upon further examination of the school's web page (see Appendix E), however, I discovered that Ralph Bunche School displays many of



the elements of collaborative critical inquiry as outlined by Bigelow et al. (1994). As well, there is evidence of a critical literacy.

### **Literacy**

For example, in Volume 13, Issue I of the Ralph Bunche Newspaper, students wrote an article entitled, “Students Write NYC Mayor Giuliani About the Homeless”. The newspaper also regularly features articles on issues of social relevance to African American youth. For example, there were articles in the February 1997 issue about Black History Month (see Appendix F). As well, tributes were recently paid by the students to former Clinton Presidential aid, Ron Brown, who died tragically in a plane crash.

In addition, there is “Mundo Hispania” (see Appendix G), a student newspaper produced by and for Hispanic students. On the “Mundo Hispano” link on the school’s web page, there is a section entitled “For Educators and Parents” (see Appendix H). Here, parents can obtain various types of information about Hispanic culture and the Spanish Language.

The school has one Spanish-English bilingual class and two Haitian-English bilingual classes (Reese, 1991), and some other languages. Reese describes the linguistic make-up of the school as follows:

Paul: The school is in the Central Harlem area and we do have a majority of second language students. Right now, we have a boy from Uzbekistan, a girl from Bangladesh, a number of Hispanic students, mainly from Santa Domingo.

## **Equity**

In terms of equity, the accomplishments of RBS are magnified by the fact that the majority of school's 750 black and Hispanic students live in the neighboring public housing. As most of the students meet many of the criteria of low-income and other measures of poverty, less than 10% of them own computers at home. However, the school has managed to address this problem by providing access to computing resources after hours. Reese (1991) explains how this has been accomplished:

The computer room is kept open from 8 a.m. to 6 p.m. daily. In addition to the two hours a week in which their entire class is scheduled to work in the computer room and the drop-in opportunities during class time, approximately half the students come regularly during recess or before and after school. During these self-selected times in the computer room, some students work on assignments, while others correspond with network "pen" pals, or play with game-like software. Teachers also come into the room to use the computer resources.

The benefits of having a computer mini-school at RBS extend beyond the school itself. As a result of it, many parents come to the school to use the computers and have become more involved in their children's work. As a result of this increased contact, some parents have even decided to participate more formally with the students. One mother, for example, is now serving as a paraprofessional in the school.

Finally, it must be mentioned that the way Ralph Bunche School has managed to acquire much of its technology is by forging partnerships with corporate and government partners. Some of these are Apple Computer, Asante, The Center for Children and Technology, and The Commerce Department.

RBS appears to be an inspirational model. A few key educators in the school have created a vision of information technology that is very mindful of the community it is

serving and of the pedagogy accompanying the technology. As a result of the actions of these individuals, the students, who are from the inner-city and linguistically- and culturally-diverse, are being empowered.

## **Summary**

In this chapter, I have reviewed the academic literature on pedagogy and technology, described the context for the schools in this study, and described a school that I believe to be inspirational in its approach to computer networking.

From this, it has become apparent that while there is a wealth of information emerging on the use of computer networking in schools, much of it does not pay enough attention to the pedagogy that is accompanying the technology. In many cases, it appears that the technology seems to be driving the pedagogy. This contradicts the point made earlier that pedagogical considerations precede technological ones, and that adequate consideration should be given to both.

In the next chapter, I will provide a theoretical model for this study which incorporates an explanatory framework for these interrelated aspects of computer networking.

## CHAPTER 3

# THEORETICAL FRAMEWORK

My review of the academic literature revealed several potential frameworks that might be appropriate for this study. Some models had a sound pedagogical vision, but did not address the use of technology. For example, the Critical Language Awareness theory proposed by Clark et al. (1990a; 1990b) would have been useful if my research had been more oriented towards examining students' language use on the Internet.

Other models addressed the use of technology but did not express a transformative pedagogical vision. For example, the Computer-Supported Intentional Learning Environment (CSILE) described in Chapter 2 is a progressive pedagogical model of computer networking that engages students in co-operative learning, problem solving, and critical thinking. However, it does not explicitly address issues of power that are also important to students, especially for those who are culturally-diverse.

It seemed that very few of the theories reviewed in the literature had considered the use of technology from a critical perspective. It was necessary for the framework selected to be able to provide a *political* vision of both the pedagogy and technology, and not just a *technological* one. In this chapter, I describe the framework that I felt was most appropriate for this study and provide reasons for its selection.

For this study, I have adopted Cummins' and Sayers' (1995) model for pedagogy, and have then adapted it for the purposes of this investigation by adding Cummins' (1996b)

framework from Negotiating Identities: Education for Empowerment in a Diverse Society. From this point forward, I will refer to this framework as the Negotiating Identities framework or model.

The model for pedagogy will make it possible for me to examine the instructional and social assumptions of the educators at the two case schools. This framework, which was described in Chapter 2 (see Figure 2), was chosen because it supports the idea of a critical pedagogy to accompany the technology.

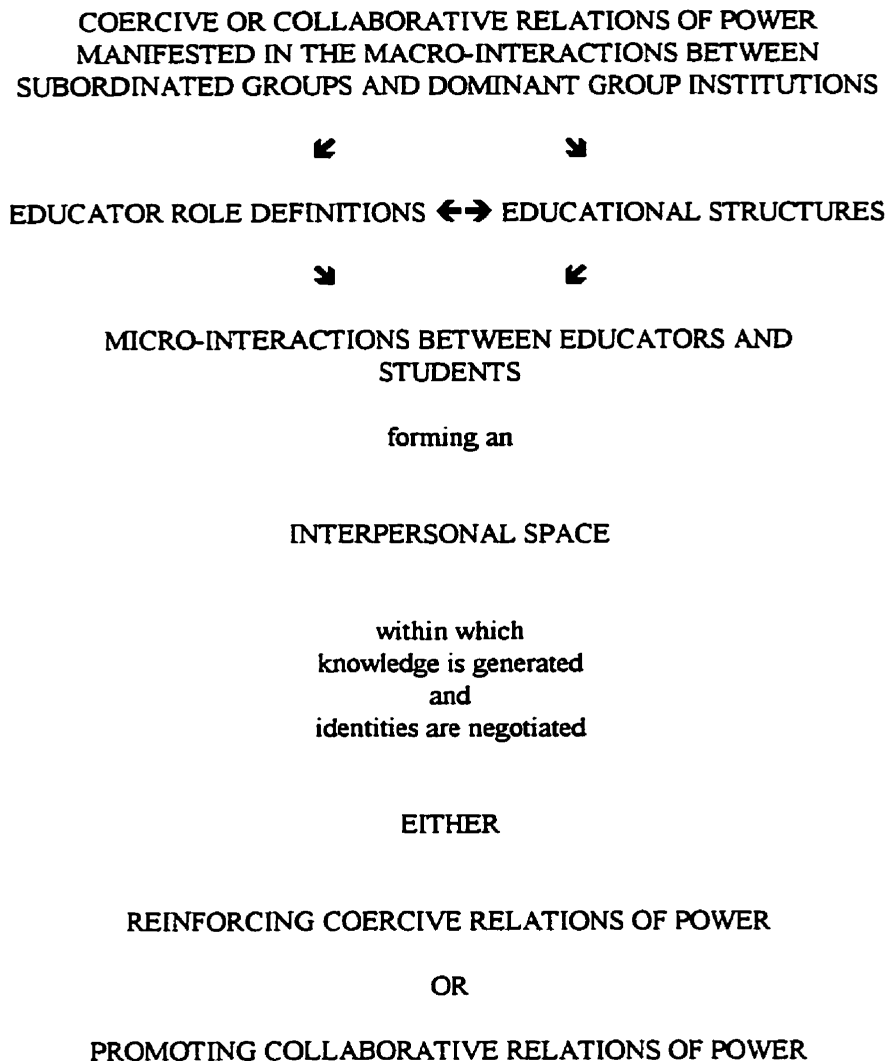
Although in his Negotiating Identities model, Cummins speaks primarily about the empowerment of linguistic minority students (which comprised only half of the students in this study), I believe his framework can be applied to all students. It is based on the principles of collaborative critical inquiry and stresses cooperative learning, creative writing, and critical thinking skills, skills that are normally found at higher levels of education in colleges and universities.

The Negotiating Identities framework (see Figure 8) proposes that relations of power in our society (macro-interactions) influence the ways in which educators define their role and the types of structures that exist in our education system. Cummins (1996b p.18) defines *educator role definitions* as “the mindset, expectations, assumptions and goals that educators bring to the task of educating culturally-diverse students”, and *educational structures* as “the organization of schooling in a broad sense that includes policies, programs, curriculum and assessment”. Educational structures are dynamic and changing because they are often challenged by individuals and groups in the society. The following describes how educational structures and educator role definitions work together:

When taken together, educational structures and educator role definitions determine the micro-interactions between educators, students, and communities. These micro-interactions form an interpersonal or interactional space within which the acquisition of knowledge and formation of identity are negotiated. Power is created and shared within this interpersonal space where minds and identities meet. As such, the micro-interactions constitute the most immediate determinant of student academic success or failure.

These micro-interactions between educators, students, and communities are never neutral; in varying degrees, they either reinforce coercive relations of power or promote collaborative relations of power. In the former case, they contribute to the disempowerment of (culturally-diverse) students and communities; in the latter case, the micro-interactions constitute a process of empowerment that enable educators, students and communities to challenge the operation of coercive power structures Cummins (1996b, p.18).

*Figure 8: Coercive and Collaborative Relations of Power Manifested in Macro- and Micro-interactions*



Source: (Cummins, 1996b p.19)

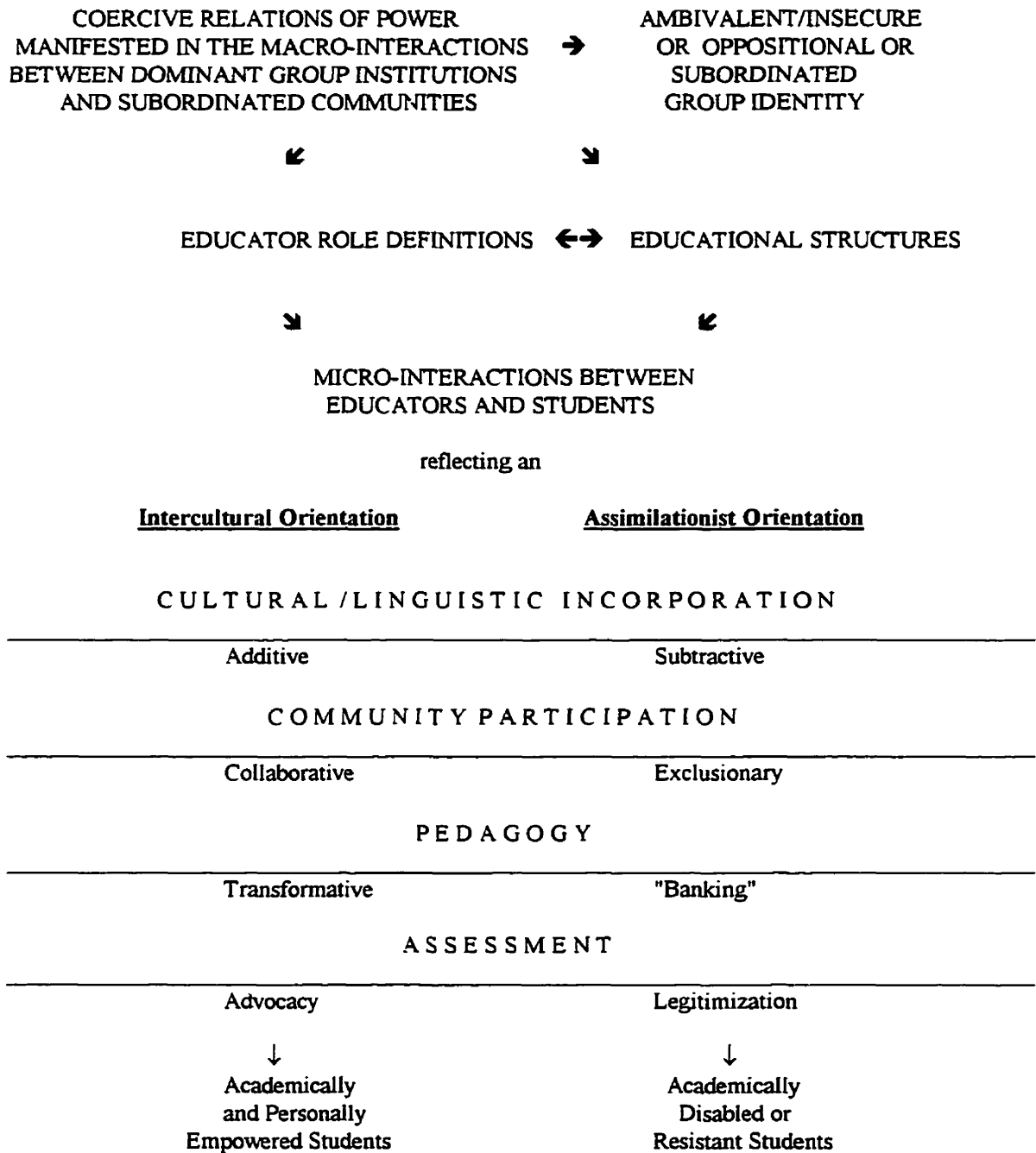
Cummins (1996b) also proposes a model (see Figure 9) describing how intervention for collaborative empowerment may take place in schools. In this model, the micro-interactions between educators and culturally-diverse students tend to reveal either an *intercultural* or *assimilationist* orientation. The former is empowering while the latter is disempowering. The presence or absence of the following four factors determines the extent to which culturally-diverse students are empowered:

1. cultural/linguistic incorporation,
2. community participation,
3. pedagogy, and
4. assessment.

As mentioned earlier, only one of the schools in this study contained a non-mainstream, culturally-diverse student population. However, I have chosen to examine the extent to which these factors were present in both schools because, with the exception of assessment, they were all themes that emerged from the data. I felt that by examining the presence of these factors in the schools, I would be able to compare and contrast the experiences of students and teachers from dominant and subordinated groups. I hoped this would provide an interesting comparison in the negotiation of identities in relation to their approaches to computer networking.



*Figure 9: Intervention for Collaborative Empowerment*



Source: (Cummins, 1996b p. 138)

In analyzing the data, I will also refer to some of the literature reviewed in Chapter 2. For example, I will draw on the concept of “multiliteracies” proposed by Cazden et al. (1996) as a visionary model of literacy for a culturally-diverse and technologically advanced society. I will also support the idea of acquiring a global perspective (Pike & Selby, 1988) in computer networking.

## **Summary**

In this chapter, I started by describing my approach to selecting a theoretical model for this study. Then, I selected the model that was most appropriate and provided reasons for its selection. In the next chapter, I will describe the methodology that was used to apply this theoretical approach.

# **CHAPTER 4**

## **METHODOLOGY**

In this chapter, I will describe the methodology used. I will start with an overview of the phases of the study.

### **Phases of the Study**

There were four phases to this study. The first phase was a review of the literature. During this period, I identified the theoretical literature and a case example, the Ralph Bunche Public School, which immediately inspired the approach I wished to take. As part of that approach, I interviewed the technology teacher at the school. The second phase was the definition of the schools, the selection of the schools, and the initiation of action research. In Phase 3, it became clear that two separate studies were involved. The first was the original comparative case study of Sydney Carton and Charles Darnay. I shall refer to this as the *primary study*. The second one was serendipitous in origin, and revolved around the possibilities of a low-level communications technology in addressing the equity of access problem faced by inner-city students. I shall refer to this as the *secondary study*. Lastly, Phase 4 involved the re-interpretation of the data from a critical perspective.

## **Study Design**

First, I will discuss the design of the original study, starting with the selection of a qualitative research paradigm.

### **Qualitative Research**

Unlike the quantitative paradigm, which is concerned with seeking facts or causes of social phenomenon without regard to the subjective state of individuals, the qualitative paradigm is concerned with understanding human behaviour from the actor's own frame of reference (Chaudron, 1986). Whereas the quantitative researcher is remote from the data (he or she has an “outsider's” perspective), the qualitative researcher is close to the data (he or she has the “insider's” perspective). The data collected through quantitative research is often thought to be more *reliable* in the sense that it is “hard” and “replicable”, but as a result of close proximity to the participants, the data in qualitative research is often regarded as more *valid* in the sense that it is “real”, “rich”, and “deep”.

### **Case Study**

The case study approach described by Stake (1995) was also employed. It attempts to examine a phenomenon in order to understand it better, and does so without manipulation or prediction of results. This is a “comparative” case study because it attempts to compare and contrast two study sites and populations for the same problem. It does so with the objective of understanding each population in its own context, not for the purpose of being able to generalize the results to other populations.

## **Action Research**

Because the schools were not already involved in any computer networking projects when I arrived, I had to intervene and initiate these projects. In doing so, I was attempting to change the situation within the schools with the expectation that advances in theory or understanding might follow. This type of intervention is usually described in *action research*. Action research is defined by Carr and Kemmis (1986) as, “a form of self-reflective enquiry undertaken by participants in social situations in order to improve the rationality and justice of their own practices, their understanding of these practices, and the situations in which the practices are carried out” (p.162).

## **Portraiture**

For data gathering and presentation, I used a technique known as *portraiture* (Lawrence-Lightfoot, 1983). It usually consists of 60-70 per cent description and 30-40 per cent interpretation. With portraiture, the researcher attempts to vividly portray the research setting, participants, and the scenario under investigation in words, while also attempting to explain the situation at a deeper level.

Portraiture proved to be an appropriate choice for this study because it allowed me to get close enough to the participants to comprehend how they were defining their roles in relation to the implementation of a new technology. It was an effective means of gathering the data and presenting it with one exception. In theory, portraiture is supposed to consist of 60-70 per cent description and 30-40 per cent interpretation. However, I discovered near the beginning of the study that I had a tendency to analyze the findings more than to describe them. This necessitated a certain amount of vigilance on my part in letting the participants speak for

themselves. When making interpretations, it was necessary to provide evidence to corroborate my assessment of the situation.

### **Data Collection**

Data was gathered from a variety of sources, including fieldnotes, initial interviews with the teachers and principals, participant observation in the classroom, cross-cultural networking projects on the Internet, correspondence with the participants by e-mail, and final interviews and focus groups with the students and teachers.

Because of the various data collection methods, there was *triangulation* in the acquisition of data for this study. Triangulation is described by Merriam (1988) as follows:

The use of multiple methods of collecting data is one form of what Denzin (1970, p. 301) calls triangulation (see also Mathison, 1988). Methodological triangulation combines dissimilar methods such as interviews, observations, and physical evidence to study the same unit. "The rationale for this strategy is that the flaws of one method are often the strength of another, and by combining methods, observers can achieve the best of each, while overcoming their unique deficiencies" Denzin, 1970, p. 308). The opportunity to use multiple methods of data collection is a major strength of case research....(p. 69).

These various data gathering methods were used in attempt to answer the research questions posed in Chapter 1.

### **Questions Guiding the Investigation**

As mentioned in Chapter 1, the following research questions guided this investigation:

1. What are the possibilities and constraints for computer networking in schools?
2. How are students, teachers, principals and parents reacting to the new technology?

3. What challenges do educators face in attempting to implement Internet learning activities, policies and programs?
4. What visions of schools and society are implied by the way the technology is being implemented?
5. How are student and teacher identities being negotiated at the intersection of the pedagogy and the technology?

These questions, which were defined by the researcher, were revised several times during the course of the study.

### **Reliability and Validity**

Any research study, whether qualitative or quantitative, should be both *valid* and *reliable* (Nunan, 1992). *Validity* has to do with the extent to which a piece of research actually investigates what the researcher purports to investigate. *Reliability* refers to the consistency of the results obtained from a piece of research.

It is doubtful that an independent researcher, upon replicating this study, would come to the same conclusions that I did. This is because the nature of the relationships among the researcher and the participants would be different. The internal reliability of the data is somewhat more dependable because, for instance, the statements made by the participants are very clear about their pedagogy. However, which data was selected to write up and which was left out is a subjective variable that depends on the judgement of the individual researcher.

## **Subjectivity**

In this study, I decided which data to use, assigned themes to the data, and analyzed these themes in the two case schools. This included examining the differences between the schools for the themes and providing reasons for these differences. For example, the home language, parents' level of education, occupation and income were all considered as potential explanatory factors for differences in equity of access to technology, but only to the extent that there was valid and reliable evidence to support them. In addition, in this comparative study of computer networking, I attempt to limit my conclusions to the contexts of the two specific schools studied.

## **Generalization**

The *generalizability* of findings may be defined as the degree to which findings from one context under one set of conditions may be assumed to apply in other settings or under other conditions (Shulman, 1981). The most frequently discussed generalization is that extrapolated from the particular sample of individuals who are tested, taught, or observed in a given study and applied to some larger population of individuals or groups of which they are said to be representative.

This study should not be generalized beyond the populations studied, primarily because the two case schools selected were exceptional, one in International Languages, and the other in initiatives on the Internet. They each had distinctly different priorities and foci.



## **Selection of the Schools**

The participating schools were chosen in consultation with the Research Services Department of the Toronto Board of Education. Two schools were sought, one in the inner-city and one in a middle class neighbourhood, in order to compare students of different socio-economic backgrounds. I requested elementary schools (K-8) because the students generally stay together during the day, and I felt this would make it easier to co-ordinate group projects on the Internet.

I was given the names of prospective schools in both inner-city and in middle class neighbourhoods. During the Spring of 1995, I began making phone calls to the principals of these schools to see if they had teachers who would be willing to participate in my study. In the process, I found one particular school in the inner-city that seemed very promising because they had just moved into a new building that was fully wired for new information technologies. However, this school did not receive its computer equipment in time for the beginning of this study. Another promising school in a middle class neighbourhood was involved on the Internet, but unfortunately already had a researcher from another university conducting a study there.

Most schools that did not respond favourably to my study simply did not have the staff, equipment, or time to participate. It was a challenge to find teachers with students of the same age in two separate schools in the Toronto Board of Education who: a) had some knowledge or interest in computers, b) had the necessary technology, and c) had the time to participate in the study. With some effort, however, I eventually managed to find two suitable schools.

## **Study Sites and Populations**

The primary study involved two urban schools which, for the purposes of this study, are referred to as Sydney Carton and Charles Darnay. It is important here to make a distinction between the schools and the populations studied within them. The schools themselves, including their overall population, community, and setting, will be referred to as the *study sites*. Within each of these schools, the people who were involved in the computer networking projects that I undertook with the students will be known as the *population studied*.

I will now provide a brief description of the study sites and a detailed description of the populations studied. A more detailed description of the study sites is provided in Chapters 5 and 6.

### **Sydney Carton Public School**

Sydney Carton is a non-mainstream, culturally- and linguistically-diverse K-8 school located in the inner-city. According to March, 1996 Toronto Board of Education statistics (Toronto Board of Education, 1996c), 27.2 per cent of its students had a home language of English (see Appendix A), 37.2 per cent were enrolled in English as a Second Language (ESL) (see Appendix I), and 65 per cent were born in Canada (see Appendix J).

#### **Population Studied**

The participants in my research at Sydney Carton Public School are described in Figure 10.

*Figure 10: Population Studied at Sydney Carton*

PARTICIPANT	DESCRIPTION
Marisa	the International Languages instructor with whom I worked, she was 46 years of age and her first language was Portuguese. She was born in Angola, West Africa and attended two years of college there. She was not an Ontario Teachers College (OTC) certified teacher. She had taught in the Toronto Board of Education International Languages and Concurrent (ILACON) Program since November, 1979. She had been at Sydney Carton since 1982-83, and had taught students in Grades K-8.
The Students	22 Grade 7 and 8 first and second generation students of Portuguese heritage with varying levels of Portuguese language proficiency. Some had prior knowledge of the Portuguese language, some had basic language skills, and some were able to express themselves using appropriate language structures.
The Parents	First and second generation Portuguese-Canadians, the majority of whom worked in blue-collar jobs such as construction, house-keeping, or janitorial services. Many had a limited education and limited English proficiency.
Anita	the principal of Sydney Carton Public School since 1993. Prior to working there, she was a vice-principal and coordinator for the Toronto Board of Education's Alternative Schools.
Raymond	the Sydney Carton principal from 1985-1993 , he helped build the

International Languages identity of the school that exists today.

Donald the Sydney Carton librarian.

Eva a first generation Portuguese-Canadian university student who served as a translator for the cross-cultural networking project. She was completing a Bachelor of Arts degree in the Department of Spanish and Portuguese at the University of Toronto.

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### **Charles Darnay Public School**

Charles Darnay is a mainstream, English-speaking, K-6 school in a middle class neighbourhood which at the time of this study, was on the outskirts of the City of Toronto. According to March, 1996 Toronto Board of Education Statistics (Toronto Board of Education, 1996b), 96.8 per cent of the school's students had a home language of English (see Appendix B), 1.3 per cent were classified as ESL (see Appendix K), and 93.7 per cent were born in Canada (see Appendix L).

## Population Studied

The participants in my research at Charles Darnay are described in Figure 11.

*Figure 11: Population Studied at Charles Darnay*

PARTICIPANT	DESCRIPTION
Carol	the English-speaking teacher-librarian with whom I worked. She had a B.Ed. in primary/junior education and a master's degree in library science. She had worked at Charles Darnay for three years. Prior to that, she had taught one year in another school.
The Students	27 Grade 3 and 4 students from a combined Grade 3/4 class. Half of the class participated in my research in the first term, and the other half in the second term.
The Parents	professional, educated, middle class and English-speaking.
Louis	the Charles Darnay principal since January, 1994.
Harriet	the Grade 3/4 teacher from whose class the participants for my study were drawn.

Aside from the populations studied at Sydney Carton and Charles Darnay, this study also involved several networking partner schools in other countries. Although they were not part of the population under investigation in the primary study, they will be described

here in order to shed light on the nature of the cross-cultural networking projects undertaken at Sydney Carton and Charles Darnay.

### **Networking Partner Schools**

For the research at Sydney Carton and Charles Darnay, I sought different types of networking partners. Figure 12 contains a summary of all the networking partners that participated in the project at Sydney Carton. Figure 13 provides a description of the networking partners that participated in the projects at Charles Darnay.

*Figure 12: Networking Project Partners - Sydney Carton*

SCHOOL	PARTICIPANTS
AH	23 students at a school in Santarem, Portugal and their teacher.
CA	10 students at a school in Lisbon, Portugal and their teacher.
CCB	16 students at a school in Sao Paulo, Brazil and their teacher.
EQ	17 students at a school in Lisbon, Portugal and their teacher.
FH	9 students at a school in Boulder, Colorado and their teacher.
JC	10 students at a school in Figuera da Foz, Portugal and their teacher.
LH	12 students at a school in Lowell, Massachusetts and their teacher.
LI	2 students at a school in Custodias, Portugal and their teacher.
MMS	17 students at a school in Bridgeport, Connecticut and their teacher.
MS	5 students at a school in Linden, New Jersey and their teacher.
SL	5 students at a school in Toronto, Ontario and their teacher.
USP	19 students at a university in Sao Paulo, Brazil and their teacher.

*Figure 13: Networking Partners - Charles Darnay*

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TERM 1 - JAPAN

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40 fourth grade students in Kagoshima City, Japan and their teacher.

TERM 2 - AUSTRALIA

45 Year 3 to Year 6 (ages 8-12) students in Canberra, Australia and their teacher.

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### **Anonymity of the Participants**

For the purposes of this thesis, all of the participants have been assigned fictitious names, with the exception of the students, who will be referred to by their initials only.

### **Negotiating Access to Sydney Carton**

To gain access to Sydney Carton, I met with Donald, the Sydney Carton librarian, at his home in July, 1995. At that time, we discussed my project and the possibility of undertaking it at his school. During our meeting, Donald informed me that my research proposal had been handed to him by Anita, the principal, and that he was told to facilitate my study in the library. He said that Sydney Carton would not be able to provide me with a classroom, but that he was interested in having the study take place in the library. He had an International Languages instructor in mind who could come to the library with her students and we could carry out the project there.



When school started in September, I proceeded to contact him and set up an appointment to meet the teacher with whom I would be working. The teacher, Marisa, had two groups of Grade 7/8 students that she taught Portuguese to during two different periods each morning.

When I first met Marisa she seemed very interested in the project, yet cautious about getting involved because she had no prior experience on the Internet. She realized that there would be a significant investment of her time, and indicated that if she were to undertake the project, she would want to do a very good job. We agreed to work together to accomplish this.

### **Negotiating Access to Charles Darnay**

It was not until September, 1995 that I contacted Charles Darnay for the first time. I was cautioned ahead of time by the Research Services Department of the Toronto Board that Charles Darnay did not welcome outside researchers with open arms. They had acquired a reputation for doing things independently and not answering to the Board. I was told that in some ways, they felt more accountable to the parents in their community than to the Board itself.

When I spoke to Carol, the teacher-librarian, in the Fall of 1995, she was reluctant to participate in my study. She did not think her school was appropriate because it did not contain a culturally-diverse student population. I explained to her that I was interested in conducting a comparative case study of a mainstream suburban school and a non-mainstream inner-city one.

She agreed to participate and we decided that I would come to the library once a week to work with a class of Grade 3/4 students. Half of the students in the class would participate in the first term, and the other half in the second term.

### **Informed Consent**

In order to prepare the students for my presence in their school, I first introduced myself and explained my reason for being there. I then answered any questions they had and sought their suggestions regarding my study. At all times, I was sensitive to their concerns and was responsive to any hesitations they had. In order to obtain informed consent, I sent a letter to the parents (see Appendix M).

### **Time Frame**

My study took place over the period of the 1995-1996 school year. I chose this time frame so I would be able to see both schools participate in at least one computer networking project from start to finish. Since neither of them were involved in any computer networking projects when I arrived, I knew that I would need some lead time to discern the type of investigations that the teachers wanted to undertake, construct the components of the project with them, and find suitable networking partners.

Half-way through the school year, in December, 1995, an opportunity arose to incorporate a secondary component to this study. This secondary component consisted of distributing a basic Internet technology to inner-city students and parents to see how they would utilize it. In the following section, I will explain the primary study in detail, and then explain the secondary study that arose through serendipity.

## **Primary Study: Cross-Cultural Networking**

One of my proposed research objectives was to attempt a cross-cultural networking project on the Internet with each of the two schools. This would include spending one day per week in each school as a participant-observer. The balance of my time would be spent on the Internet co-ordinating these projects with the foreign networking partners.

At Sydney Carton, the networking project that I developed with Marisa was called "A Cultural Collage - in Portuguese" (see Appendices N, O, and P). It was also more commonly referred to as "Projecto", which simply means "project" in Portuguese. In Projecto, the students were divided into co-operative work groups of four or five and matched with similar groups of students in the other countries. Using e-mail, they wrote to their partner groups in four stages over a period of three months. The stages of Projecto were: Stage 1: *This Is Who I Am*, Stage 2: *This Is My City and My School*, Stage 3: *A Typical Day*, and Stage 4: *These Are My Favourite Things*. Projecto involved 171 teenage students, mostly of Portuguese background, in four countries: Canada, the United States, Portugal, and Brazil.

At Charles Darnay, in the first term, the students carried out a cross-cultural investigation with a partner class in Japan (see Appendices Q and R). They worked in co-operative groups of four or five and used e-mail to ask each other questions about their cultures, traditions, and way of life. This project coincided with a unit the students were doing in class on Japan with their classroom teacher, Harriet.

In the second term, the other half of the class carried out a similar investigation with a school in Australia (see Appendix S). I was told that one of their classmates had recently

moved to Australia and that the students were curious to know more about it. This project was different than the Japan project because there was no language barrier or a need for translation. I will elaborate on this point in Chapter 8.

### **Data Sources and Procedures**

Data collection took place from September, 1995 to April, 1996 and involved the following sources and procedures: fieldnotes from the participant-observation in the classroom (one day per week) and from staff/board meetings, preliminary interviews with the principals (see Appendix T), preliminary interviews with the two participating teachers (see Appendix U), final interviews with the two participating teachers (see Appendix V), interviews with Sydney Carton students (see Appendix W), focus groups with Charles Darnay students (see Appendix X), and ongoing e-mail correspondence with the participating teachers, students, and foreign networking partners.

### **Phases in Instrument Design, Trialing and Use**

In Figure 14, the phases that were involved in designing and carrying out the research for the primary study are described.

*Figure 14: Phases in Instrument Design, Trialing and Use for the Primary Study*

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PHASE 1: PRIOR TO SEPTEMBER, 1995

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1. designed research proposal.
2. obtained permission for study from Toronto Board of Education.
3. completed ethical review.
4. searched for two suitable schools in the Toronto Board of Education.

PHASE 2: SEPTEMBER-DECEMBER, 1995

1. discussed project with several prospective schools.
2. located two suitable schools and met with the teachers.
3. commenced participant-observation in the schools.
4. obtained computer equipment for Sydney Carton
5. obtained guest e-mail account for Marisa at OISE.
6. began ongoing e-mail collaboration with Marisa and Carol.
7. obtained informed consent from students.
8. designed initial interviews for principals and teachers.
9. conducted initial interviews with principals and teachers.
10. decided with Carol on Japanese cross-cultural networking project for first half of Charles Darnay students (students to write in English).

11. sent introductory e-mail to cross-cultural networking forums and educational newsgroups on the Internet in an attempt to try and locate appropriate partner schools in the desired countries (see Appendix Q).

12. located appropriate Japanese partner and commenced collaboration.

12. designed, in collaboration with Marisa, “A Cultural Collage in Portuguese”, which was based on a similar project in Spanish found on the Internet while searching for networking partners.

#### PHASE 3: JANUARY-APRIL, 1996

1. commenced “A Cultural Collage - in Portuguese” at Sydney Carton.
2. with Carol, decided on details of Australia project for second term at Charles Darnay.
3. located school in Australia and commenced collaboration.

#### PHASE 4: APRIL, 1996 - SEPTEMBER, 1996

1. designed and conducted interviews with Sydney Carton students.
  2. designed and conducted focus groups with Charles Darnay students.
  3. designed and conducted final interviews with teachers.
  4. designed web page for “A Cultural Collage in Portuguese”.
-

## **Problems Encountered**

There were some logistical problems which became evident as the study progressed. First of all, there was difficulty finding "technologically ready" schools and interested teachers at the same grade level in both an inner-city and middle class neighbourhood. Secondly, in our attempts to find networking partners, there was an initial lack of response to our e-mail inquiries for partners in the countries desired. Once we located suitable partners, there were difficulties in the availability and reliability of the technology, unexpected teacher illnesses in the partner schools, scheduling problems due to differing school years and holidays, and the challenges of translation.

## **Participants' Response**

Most students were eager to participate in the projects. However, I found that there was some reluctance on the part of the Sydney Carton students about participating in the cross-cultural project in Portuguese. Some of them seemed to have little interest in learning about their own culture and using the Portuguese language. Marisa had warned me ahead of time that it would be impractical to try and carry out a networking project based on a transformative pedagogy with her students because they would simply not be interested in investigating things like social issues.

At Charles Darnay, Carol's pedagogical orientation, the young age of the students, and the limited time I had with them, meant that the projects could not contain a transformative pedagogical orientation either. Nevertheless, I did what Carol was comfortable with and took my cues from her and the students.

Despite these parameters, I was able to gather sufficient data for the primary study. In the analysis, the themes of *pedagogy*, *literacy*, and *equity* emerged as analytic foci. With respect to *equity* in particular, an opportunity arose half-way through the primary study to conduct another investigation.

### **Secondary Study: Alex Videotex**

While reading an OISE newsgroup in December, 1995, I discovered that the Toronto Free-Net was trying to get rid of several Alex Videotex machines that they had acquired from Bell Canada. An Alex Videotex machine consists of a screen, a keyboard, and a 1200 baud modem, and is capable of providing basic Internet connectivity. I managed to convince them to donate some of these machines for the purposes of my study.

I decided to distribute several of these machines to inner-city students and parents who would not otherwise be able to afford a computer. Sixteen Alex Videotex machines were distributed to selected students and parents. Each signed an agreement (see Appendix Y) and were told that he or she would be allowed to keep the machine at the end of the study on the condition that he or she kept written journals of his or her usage (see Appendix Z).

Once the participants had received their Alexes, I registered them for e-mail accounts at the Toronto Free-Net and provided them with basic instructions on how to use the machine. My goal was to keep in contact with the participants by e-mail as much as possible, and by telephone at least once a month.



## **Study Sites and Populations**

The study sites for the secondary study were the 16 inner-city homes where the Alex Videotexes were distributed. The participants in these homes a) either attended an elementary school in The Toronto Board of Education, or b) were the parents of a student(s) who did.

The population studied consisted of 13 inner-city elementary students and three inner-city parents. Eleven of them were selected with the assistance of the Inner-City Superintendent of the Toronto Board of Education. The criteria for selection was economic need and an interest in computers. The remaining five participants were Sydney Carton students who were already participants in the primary study. Marisa helped select them based on the same criteria, economic need and an interest in computers. Naturally, I ended up having more face-to-face contact with these participants because of my regular visits to Sydney Carton to gather data for the primary study.

## **Data Sources and Procedures**

In the secondary study, the same data sources and procedures were used as in the primary study with the exception of the Alex Journals (see Appendix Z) and the telephone conversations with the participants once a month.

## **Phases in Instrument Design, Trialing and Use**

In Figure 15, the phases that were involved in designing and carrying out the research for the secondary study are described.

*Figure 15: Phases in Instrument Design, Trailing and Use for the Secondary Study*

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PHASE 1: SEPTEMBER, 1995-DECEMBER, 1995

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1. learned about availability of Alex Videotexes.
2. decided that they could be used to determine what inner-city students and parents could accomplish when provided with a minimal telecommunications technology.
3. acquired Alex Videotexes from Toronto Free-Net.
4. designed user agreements and usage logs for monitoring participants' activity.
5. approached Toronto Board's Inner-City Superintendent about allocating the Alexes to inner-city families.
6. distributed Alex Videotexes and Alex Journals to participants.
7. set up each participant with an e-mail account at the Toronto Free-Net.

PHASE 2: JANUARY, 1996-MAY, 1996

1. corresponded individually with Alex participants by e-mail to monitor their progress and provide technical/pedagogical assistance.
  2. received e-mail and Alex Journals from the participants describing their experiences.
  3. telephoned participants once a month to discuss their progress.
-

## **Problems Encountered**

In the secondary study, I had some initial difficulty finding a group of reliable participants to distribute the Alexes to. During the study, the main problem encountered was that there was a lack of time and technical support available for many of the participants to learn how to use the Alex Videotex and the Toronto Free-Net. I learned after distributing the Alexes that for some of the participants, some in-service training would have gone a long way to helping them become more involved. Unfortunately, there was not enough time for me to offer this, and they were largely left to their own devices once I had given them the machine and set them up with a Toronto Free-Net account.

## **Participants' Response**

The students and parents who were given them utilized them to varying extents. Some used them heavily and became quite expert with them, while others used them to send the occasional e-mail, and still others never really learned how to use them at all.

## **Analysis and Interpretation**

The data collected from both the primary study and the secondary study were coded and sorted by themes using NUD\*IST, a qualitative software program. NUD\*IST is designed to help the qualitative researcher with some of the mechanical aspects of data analysis. The researcher codes the data indicating specific ideas or themes. The computer then sorts the data as instructed by the researcher, that is, it takes over the mechanical aspects of "cutting and pasting" once done manually by the researcher.

After analyzing the raw data, I was able to paint individual portraits of the schools (see Chapters 5 and 6). Descriptions of the school environments, quotations from interviews, e-mails, formal documents, and vignettes of interactions with the students brightened and coloured these portraits. As the research and analysis proceeded, I was able to determine how identities were being negotiated at Sydney Carton and Charles Darnay Public Schools.

### **Summary of Analysis Steps**

In summary, the raw data was reviewed and then coded and classified according to themes. I was then able to compare and contrast themes the data clustered around to the academic literature and to determine the ways in which the theoretical framework chosen was able to explain what was occurring at the two study sites with the populations studied. Finally, I was able to arrive at some answers to the research questions for the contexts studied, and also to undertake a critical review of the methodology.

### **Problems Encountered in the Analysis**

One methodological problem in this comparative analysis was the difference in age of the populations studied at the two case schools. Another possible limitation was that I held individual interviews with the Sydney Carton students but focus groups with the Charles Darnay students. The focus groups were necessary with the Charles Darnay students because of the limited time I had with them. Another problem encountered in the study was deciding which data was relevant and which was not. This and the assignment of themes to the data was very subjective and left to my discretion as the researcher. A final

constraint was that the data obtained could not yield information about computer networking projects that incorporated a transformative pedagogy and collaborative critical inquiry as outlined in the theoretical framework of Cummins and Sayers (1995). This was not possible because the participating teachers were not interested in designing or undertaking a networking project based on this pedagogical orientation.

## **Ethical Issues**

In the primary study, all the students were given letters of consent (see Appendix M) to have signed by their parents. If any student did not want to participate for any reason, or if a parent did not want his or her child to participate, the child did not have to.

As mentioned earlier, I protected the identity of the teachers with fictitious names and the students by using only their initials. Students' last names were never revealed when sending e-mail. The only students whose full names were ever exposed on the Internet were the students in the secondary study. This was because once these students obtained Toronto Free-Net accounts, the responsibility for the protection of their identity fell to their parents, who were required to give signed consent in order for their son or daughter to obtain the account.

In our networking projects, at all times I attempted to abide by the policies for Internet usage recommended by the Toronto Board of Education (1995b).

## **Summary**

In this chapter, I have described the design and methodology used in this study. In the next chapter, I describe the first of the two case schools, Sydney Carton Public School.

## **CHAPTER 5**

### **SYDNEY CARTON PUBLIC SCHOOL**

Sydney Carton is a K-8 inner-city composite school located in downtown Toronto. It was founded in 1888 and named after a famous Canadian who once taught there. The school's population of almost 500 students includes many from non English-speaking homes. Eighty per cent of the students speak Portuguese, Vietnamese, Chinese or Spanish (Goldman, Hart-Hewins & Parkin, 1994). The school also has students with several other home languages and backgrounds, including "Anglo", Spanish, Tamil, and Somali (see Appendix A).

Sydney Carton consists of two junior kindergarten/senior kindergarten classes, three Grade 1/2 classes, one Grade 3 class, two Grade 4/5 classes, one Grade 5/6 class, one Grade 7 class, and two Grade 8 classes. There is also one "family grouping" Grade 1/2/3 class, and two fully integrated Grade 7/8 learning disabled (LD) classes. (For the LD classes, team teaching is used and there is a great deal of in-class support. For instance, in the classroom at any one time could be two home room teachers, two educational assistants, a first language tutor, and a second language tutor.)

The school staff is comprised of a full-time performing arts teacher, a gym teacher, a half-time design teacher, two French teachers, an itinerant music teacher, a nurse, a janitorial staff, an on-call social worker, and an on-call school psychologist. There are also para-professionals at the school, including a few volunteers from local high school co-op

programs, student teachers from the University of Toronto, and early childhood education students from the University of Toronto. Sydney Carton also houses a learning centre, a reading clinic, a parenting centre, ESL classes for adults, and a limited number of after-school courses for students in subjects like gymnastics and computers. Lately, the school has begun encouraging more parental volunteering in the classroom, but this has met with limited success because most of the parents work full-time. However, there is a somewhat active parent-teacher association.

### **Physical Description of the School**

The original school building was constructed in 1924 and opened in 1925. It is a large, rectangular two-storey brown brick building with blue metal doors. Some 1925 Board archives describe the school as follows: "It conveys an excellent idea of our present day public school construction".

In 1967, the Board recommended that Sydney Carton be divided into a senior and junior school, each with its own administrative personnel. The junior school which now sits beside the senior school is a smaller grey building with green and yellow trim. Then, in 1981, the Board recommended that the senior and junior schools be merged into the comprehensive K-8 school that exists today.

The main entrance to Sydney Carton is not on the busy Toronto street that the playground faces, but is tucked away at the back on a quiet residential street with quaint houses. When one enters the school through the main entrance, the first thing one sees is a long hallway that stretches all the way to the west side of the building. One also notices the main office on the right and a large, modern gymnasium on the left. As one walks

through the corridor past the main office, there is a window on the right that displays a completely enclosed courtyard. In this grassy area, there are picnic tables and a barbecue. Further down the hallway are bulletin boards with multicultural material which reflects the ethnic diversity of the school. Here, there are also some comfortable black cushioned chairs where in the morning I would regularly see a Chinese mother reading to her children before school.

At the end of the hallway and up the stairs is the school library. It is large by elementary school standards and has a long, rectangular shape. It is spacious, but without much character, and has grey carpet. When one enters the room, the first thing one notices is a large semicircular librarian's counter with wooden slats. Behind the counter to the left is the library's 486 computer and printer. At the back of the counter area is an enclosed office. The walls of the library are lined with books, and the centre of the room has several desks and old computers that Donald, the librarian, has managed to scavenge.

Down the stairs and to the right from the library is the International Languages Office. This room has a large conference table in the centre and walls that contain copies of multicultural, anti-racist, and International Languages material. Connected to the main room are the side offices which are shared by the six teachers of Portuguese, Chinese, and Vietnamese.

On the second floor above the International Languages Office is the Portuguese Resource Centre. It is a spacious converted classroom with high ceilings and huge windows that faces east towards the playground. In the morning, the sun basks the classroom's contents so brightly that the big black drapes need to be drawn to cut down on



the glare that invades the computer screen. In the centre of the room are two long wooden tables that are joined to form an "L" shape and some stacking chairs around them. At the back of the room is a sturdy wooden teacher's desk with drawers and a sink area. The Portuguese Resource Centre also houses several Portuguese language books for students which seem to be stacked in no particular order in several locations around the room.

## **Culture of the School**

Sydney Carton's culture could best be described as urban, culturally- and linguistically-diverse, and innovative in its approach to International Languages instruction. One of my first impressions of the school came during my first visit there. Upon leaving the building, I saw a fight breaking out between two boys on the playground. When I tried to intervene, I was confronted by one of the boys who yelled, "Hey, who are you, a cop? Where do you come from, 52 division?". For me, this incident seemed to bring to light the harsh nature of attending school in the inner-city. This was in direct contrast to the pristine playground atmosphere at Charles Darnay where the children seemed well monitored and protected.

In general, the Sydney Carton students themselves seemed to have fairly typical attitudes about school. The things they liked most about it were "sports" and "friends". The things they liked least about it were "no dances", "homework", and "teachers".

## **Educational Structures**

### **International Languages at Sydney Carton**

Because of its strong record of leadership in International Languages instruction, Sydney Carton must be considered as an exceptional school within the Toronto Board. In 1977, the Ontario Ministry of Education and Training published Memorandum 1976-77:46 which made it possible for International Languages to be taught during an extension of the required instructional school day, as well as after school and on non-school days. In schools where the integrated/extended day program was offered, the International Languages classes were taught at some period during the day and the instructional day was extended by one-half hour to accommodate this program (Toronto Board of Education, 1985).

Shortly after the former principal, Raymond, arrived at Sydney Carton in 1985, it became the first school in the Toronto Board of Education to offer an 'integrated' program. Under this model, students who chose not to receive International Languages instruction during the extra half hour would spend this time working on other subjects such as gym or art. Teachers were not permitted to teach these "concurrent students", as they were called, core curriculum subjects during this half hour so as not to penalize the International Languages students for receiving International Languages instruction.

This particular policy upset several teachers and parents; the teachers were irritated because their work day was being extended by a half hour, while the parents of the concurrent students were angry because their children were not able to learn any core

curriculum subjects during this time. Raymond recalls how in reaction to the implementation of the new program, approximately one third of his staff requested transfers. Despite this reaction, Raymond was committed to the program and was content to let teachers who were not completely dedicated to his International Languages agenda leave. He had a vision of making International Languages instruction an even greater priority at Sydney Carton.

In 1988, on the advice of a colleague, Raymond decided to approach the Toronto Board's ESL Work Group to see if Sydney Carton could be given "special project school status". In principle, they were not eligible for this status because in order to qualify a school needed to have a large percentage of its students living in public housing. Yet, at Sydney Carton, many of the parents owned their own homes. With some good fortune, Raymond managed to receive special project status for the school. He claims that the establishment of Sydney Carton as a special project school helped, in large part, to build the multicultural and multilingual school identity that exists today.

Raymond claims that his vision for Sydney Carton arose from his experience as a graduate student at Columbia University and from his experiences as a principal in the Toronto Board for 16 years. When he first arrived at Sydney Carton in 1985, he says he found a community with some of the same inner-city problems that he had witnessed in the United States. Most Sydney Carton parents were recent immigrants who did not value education highly. However, they did have a zeal to pursue the "almighty dollar". Their goal was to work hard enough to be able to purchase a house in Toronto, and in time, sell their house and move back to Portugal to live a better life than the one they had left. In

order to achieve this, many of them worked two or three jobs at a time and would either take their children along at night to help, or leave them at home alone. As a result, many Portuguese-Canadian students were not being given the kind of support they needed to succeed in school. Many Portuguese-Canadian parents were also hesitant to become involved in their children's education because they could not speak English well, and had a general discomfort in school settings due to their own lack of formal education.

From my observations at Sydney Carton in 1995-1996, it seemed that there were still some adjustments taking place in the school since the departure of Raymond. For the most part, however, it seemed that since Anita's arrival in 1993, the school's commitment to International Languages instruction had remained strong and was still a cornerstone of the school's identity.

Sydney Carton had other defining educational structures aside from their International Languages Program. One that was of particular interest to this study was their policy towards the implementation of computer technology.

### **Computer Networking at Sydney Carton**

Although the Ministry of Education and Toronto Board of Education policies seemed to be stressing the integration of computers into the curriculum, I did not witness this at Sydney Carton. The majority of Grade 7/8 Sydney Carton students in my study had never used computers before. In contrast to this, the majority of Charles Darnay Grade 3/4 students had computers at home and used them regularly at school.

In my interview with Anita, I asked her what types of problems the Sydney Carton faced with regard to the implementation of computer technology. She cited the following concerns:

1. varying degrees of teacher expertise,
2. a combination of Mac, IBM, and old Commodore computers, and
3. difficulties in purchasing economical equipment.

In the school, the body charged with looking after the implementation of new computer technology was the “Net Committee”. It was comprised of six teachers who were supposed to meet periodically to determine how to allocate computer resources in the school. Marisa had not been invited to be a member of this committee even though she was participating in this study. She informed me that only one of the members of the committee seemed to be pushing for the school to become involved on the Internet. Marisa felt that there was some kind of “resistance against the whole enterprise, mostly based on ignorance of the facts”, as she put it.

## **Educator Role Definitions**

### **Marisa**

#### **Before the Networking Projects**

As mentioned earlier, during our first meeting in the school library, which was in September, 1995, Marisa was very cautious about entering into a project with an outside researcher. She had never used the Internet before and felt that just learning the

technology would require a significant amount of her time. She also expressed that if she were to undertake such a project, she would want to do a very good job.

After discussing our objectives and priorities, we decided that we would proceed. Marisa carefully read over the form that I brought her for a guest e-mail account at OISE, signed it, and this marked the beginning of our collaboration.

Originally, Marisa and I had planned to use the school library as the site of our networking activities. However, due to a misunderstanding with Donald, the school librarian, we decided to move our project to a more private location. Donald was very interested in facilitating our project, but he also saw it as an opportunity to demand more computer equipment and a dedicated phone line for the library. Marisa and I decided that we were not particularly keen to become involved in this other objective so we proceeded to re-locate to the Portuguese Resource Centre.

The Portuguese Resource Centre did not initially have a computer so Marisa had to bring in an old IBM 286 computer and dot matrix printer from home, and I had to purchase a used 2400 baud modem for this study. As well, because the Portuguese Resource Centre's phone line was shared with the International Languages Office downstairs, we were not able to dial out before 9:30 a.m. in the morning until all the absentee calls had been made.

During the investigation at Sydney Carton, I gathered data on Marisa's role as an educator. This data seemed to cluster around the following themes: *serving students, embracing technology, cultural sensitivity and global awareness, and taking action in her own classroom*. I will now describe each of these themes.

## **Serving Students**

Since beginning teaching in 1977, Marisa had cultivated some definite beliefs about her role as an educator. The answers she gave during her initial and final interviews combined with her actions throughout the study indicated to me that she was an extremely student-centred educator. For example, in her response to a question I e-mailed her about adding two Portuguese students late in our project, her response was as follows:

David, I understand..but you know, the kids ended up writing the compositions already... Joao sounds like a nice boy ... Let it be, for now, I'm going to talk with Celina about it ..., ok? I'll get back to you a.s.a.p. Marisa

Marisa's concern for including Joao in our project even though he was not one of her own students and was located far away in Portugal impressed me. It revealed that she genuinely wanted him to have the opportunity to participate. This inclusiveness demonstrated not only her concern for this student, but an indication of her understanding of the potentially liberating aspects of the technology for all students.

Her commitment to her own students became more evident when I later witnessed Marisa assisting the Alex Videotex students. She helped them learn how to use the technology and gave them her e-mail address so they could communicate with her outside of school hours. This is one example of how she demonstrated a dedication to serving students.

## **Embracing Technology**

When I obtained the Alex Videotex machines from the Toronto Free-Net, Marisa was the first person I gave one to. She viewed this acquisition with great enthusiasm, as the following e-mail illustrates:

Ola David,

I am writing using MY Alex .... ALELUIA!!!!  
I congratulate you! You know your way around computers!  
Alex will go home with me today.  
This is it for now.  
Regards,

Marisa

Despite the initial apprehension she expressed about the technology, once committed to the project, Marisa became very determined about using the Internet. She embraced the technology because it created an opportunity for her to expand her role as an educator. By allowing her to connect to the Internet at home, the Alex enabled her to go on line and search for Portuguese resources for her students.

The way Marisa undertook learning this technology despite her limited background with computers showed that she was driven by a vision greater than the technology itself; she saw the technology as a potential means of empowerment for her students.

## **Cultural Sensitivity and Global Awareness**

Marisa demonstrated that she was culturally sensitive. Soon after learning how to use the Internet, she joined several Portuguese newsgroups and began communicating with other Portuguese educators. She also began collaborating with me by e-mail on the design



of our bilingual networking project, which was based on a similar project in Spanish that was posted on the Internet. Below is an e-mail from our collaboration:

Ola David,

Just to be sure of my (informal) Spanish language skills I've engaged a Spanish teacher and here is the final product to your query:

\* Asi soy you - This is how I am - Eu sou assim

\* Asi es mi escuela, asi es mi pueblo - This is what my school and my home town look like - Esta e' a minha escola e a minha cidade.

\* Un dia tipico - A typical day - Um dia tipico

\* Asi somos - This is what we look like - Nos somos assim

Re: Cabral, A - Portingles - Thank you so much for your help ;-)

Re: Nicholas - Let's hope he gets back to you..I just wonder how he did with his posting..

Adios

Good bye

Au revoir

Auf wiedersemen

Arrivederci

Sayonara

Adeus

Marisa's appreciation of different languages and cultures is evident in the multilingual greetings she includes at the end of this message.

Marisa's appreciation of global issues also became evident to me during this study. She would often engage me in discussions about the situation in East Timor or child labour laws in India. In the following e-mail she expresses her perspective on an e-mail we both received which had condemned the killing of baby seals in Canada:

Hi David,

There's always two sides to the same story and, an honest and informed person should report both! As far as I can see, \_\_\_\_\_ lacks the knowledge to address this issue. She may argue that the way the killing is done is barbaric ... She's missing the point of the story which it is to control the balance of nature (seal/fish) ...

It is very hard for me to deal with this issue. I appreciate and accept your offer to handle it. Thank you.

Marisa

### **Taking Action in Her Own Classroom**

Despite the fact that Marisa had been teaching in the Toronto Board since 1977, she did not hold her Ontario teaching credentials; she was only considered an “instructor” by Ontario standards. She also worked in a department, ILACON, that although having been significant to Sydney Carton in the past, seemed to be in line for funding cutbacks. In the following e-mail, she expresses her concern to me over the uncertainty of this situation:

Ola David,

The cuts are coming down in my department with a vengeance! The way they (the Board) is doing it, is so dehumanizing, so demeaning, so unprofessional that it's hard to believe, to say the least! .... Saying that my job is in jeopardy, it's an understatement!....

Marisa

Because of the uncertainty of her job and the future of the International Languages Program, Marisa was apprehensive about asking her superiors for new computer resources for her department. The Portuguese Resource Centre had no computer equipment when this study commenced, even though other departments in the school did.

Marisa felt that the Portuguese Resource Centre deserved better computer equipment, especially since she had become involved in this research project with OISE. It was her belief that her work on Projecto should be recognized by her superiors, but she was reluctant to overtly seek out their recognition.

In this vein, Marisa was very appreciative of others who did things for her and her students. For example, when we set up several of the Sydney Carton students on the Toronto Free-Net, Marisa insisted on making a generous \$100 donation to this free Internet provider because she was grateful for the service they were providing.

Overall, Marisa would have to be characterized as a very proud, student-centred educator. In her own classroom, she was trying to implement her vision of education despite the educational structures that surrounded her and sometimes limited her efforts.

### **After the Networking Projects**

As a result of her work on our project, Marisa acquired a great deal of knowledge about the Internet, and had become one of the most informed teachers at Sydney Carton about its use in the classroom. In her final interview I asked her if, as a result of using the Internet, she had seen the attitudes of students, teachers, parents, or the principal at Sydney Carton change at all. Her answer was that it was too soon to know. She said the students seemed to be very pleased with the projects and wanted to get involved in others, but that this would depend largely on the recommendations of the Net Committee, which had yet to report to the staff. She told me that they were probably not even fully aware yet of the potential of the technology.

## **Summary**

In this chapter, I attempted to paint a portrait of Sydney Carton Public School, including its educational structures and educator role definitions. In the next chapter, I do the same for Charles Darnay Public School and its teacher-librarian, Carol.

## **CHAPTER 6**

### **CHARLES DARNAY PUBLIC SCHOOL**

Charles Darnay Public School was founded in 1889 by a young woman who saw a need for a place to educate the growing number of children in the Charles Darnay neighbourhood. Like Sydney Carton, Charles Darnay must be considered an exceptional school in the Toronto Board. It is unique because of its recent forays into technology and because of its school population, which is predominantly mainstream, English-speaking and middle class (see Appendices B, K, and L). Although there are other pockets in the Board that still have a similar dominant culture population, many of the schools have, in recent years, become much more culturally-diverse.

The Charles Darnay neighbourhood's residential streets are tree-lined and contain several attractive houses. There is a lot of pedestrian traffic on the main thoroughfare which contains many privately owned businesses.

The following description of Charles Darnay is taken from their home page on the World Wide Web:

Charles Darnay Public School is...attended by 450 students from junior kindergarten to Grade 6. Classes reflect the school's multi-age grouping philosophy. In 1995-1996, there were five junior kindergarten/senior kindergarten units, three Grade 1/2 classes, two Grade 1/2/3 classes, two Grade 3/4 classes, one Grade 4/5 class and three grade 5/6 classes. As well, there were two fully integrated learning disability classes; one at the Grade 3/4 level and the other at Grade 5/6. Charles Darnay also offers a full-time learning centre providing students with individualized instruction for up to 40 minutes a day.

Supporting the regular classroom programs are a full-time teacher-librarian, physical education/health teacher, Core French (Grade 4-6) teacher and a half-time integrated arts teacher. Six educational assistants support the kindergarten classes, the learning disability classes, the learning centre and a special needs student.

As well, at Charles Darnay there is a full-time principal, a vice-principal, full-time administrative assistant and half-time clerical assistant. The caretaking staff include an engineer and two cleaners who keep the school open from 6 a.m. to 11 p.m. five days a week. There is a nurse 1/2 day per week, a psycho-educational consultant one day a week, a social worker one day per week, a speech pathologist 1/2 day per week, an ORFF instructor 1/2 day per week, a recorder instructor 1/2 day per week and a band instructor one and 1/2 hours per week.

As well, Charles Darnay houses the Charles Darnay Daycare with 114 children aged 2 1/2 to 10. Charles Darnay Daycare is the largest daycare facility in a school in the City of Toronto.

Charles Darnay students enjoy a variety of extracurricular activities. These include choir, cross-country, hockey, girls, boys and co-ed slow-pitch teams, track and field and houseleague, gymnastics, dance, soccer and hockey. "After four" programs feature arts and crafts, cooking and two primary French classes.

Parents play a strong role at Charles Darnay. The parents' association meets regularly and submits briefs and recommendations to the Board in various curriculum matters. Parents also participate on the hiring team for the principal and vice-principal as well as form part of the staffing committee which determines size and number of classes, instructional periods, supportive programs and supervision schedules for the school.

Charles Darnay school describes itself as an active, friendly place to learn thanks to the help and support of many people.

## **Physical Description of the School**

The first thing one sees as a visitor to Charles Darnay is the playground, which is fenced in and set back from the main street. It is well landscaped, with grass, trees, small hills, benches, and two baseball diamonds. Adjacent to the playground is an area called the "wilderness garden" where the school has attempted to create an ecological environment within the city.

The school building, which was opened in 1964, is a medium brown, three story, long rectangular structure that seems to blend unobtrusively into its surroundings. It has a light

blue trim around what appears to be the first floor windows, and a white trim separating what appears to be the first and second floors. In actuality, the school's first floor is hidden from view except from the west side. The school's main entrance is on the west side. Here, there is a student pick-up and drop-off area that is packed with cars before and after school as parents flock to drop off and pick up their children. The street is practically deserted the rest of the day.

When one enters the school through the main entrance, the first thing one sees is the sign for the Charles Darnay daycare. As one proceeds through the set of double doors, one sees a war memorial. It is a large bell containing the inscription "In memory of those who served 1914-1918, 1939-1945". To the left of the bell is an Ontario flag, and to the right is a Canadian flag. To the right of the memorial is the school gymnasium, while straight ahead and to the left is the school's main office.

The Charles Darnay hallways are long and have windows at either end. They are painted yellow, orange and green and have students' artwork posted all around. This includes murals, pictures and paintings by the students. There is also a notice board for parents on the main floor.

The library where I did my research is located on the second floor. It is an extremely warm, inviting, and richly decorated room with a lot of visual stimuli. Around the perimeter of the room are bookshelves laden with books on various topics, and there is even a videotape and computer programs section. Five huge globes and gigantic paper maché faces rest on top of the bookshelves. At several locations in the room there are

miniature tables for students to sit at, and in the middle of the room is a large rug and a rocking chair where the librarian can read to the children.

During my study, the centrepiece of the library was a Macintosh multimedia computer with a 28.8 baud modem. There were also two older IBM 286 personal computers with the library catalogue on them.

## **Culture of the School**

Like Sydney Carton, Charles Darnay is a much lauded school in the Toronto Board of Education. Its recent initiatives on the Internet and its record of strong parental involvement are two key characteristics that have shaped its identity.

The Charles Darnay students seemed to like their school, as the following excerpts from the focus groups illustrate:

SW: Well, there's a lot of nice kids in it. And there's some nice teachers. And I think it's a nice place.

LJ: Well, I think it's nice. You get to have gym and art.

JA: I know a lot of people who've graduated from here and they said that like they miss it a lot 'cause they think it's a really good school.

Several students identified computers as their favourite aspect of going to school at Charles Darnay:

JA: Well, ummmm, well I don't not like anything about it, I think it's a really great school. It's fair because every class has at least one or two computers.

TP: I like the computer.

GN: Well..uh..I just like to write on the Internet, go on the computer and stuff.

As far as student dislikes, there were very few. There were some complaints about teachers, certain subjects, bullies, and students who defaced school property. A few students also expressed frustration about having limited access to certain resources:



DB: Some things I find not fair, like some classrooms don't have as much as others, like some people have three teachers, and they get more stuff.

KM: 310 has three computers, and that's not fair.

As computers and the Internet were such a part of the Charles Darnay school identity, I will now examine the educational structures and role definitions which made this possible.

## **Educational Structures**

### **An Active School-Community Alliance**

At first blush, Charles Darnay seemed to be benefiting from the favourable macro-relations in the broader society (Cummins, 1996b). It is mostly white and middle class, and roughly 97 per cent of the students' first language is English. It does not accept students from outside its district, and it is one of only a few schools in the Toronto Board with no ESL program. In 1995-1996, when two Cantonese students arrived at the school, it caused a major dilemma for the Charles Darnay administration.

In his interview, Louis, the principal, described the Charles Darnay parents as "artsy, demanding, but not unrealistic and very supportive". He said that there was a lot of interaction between the school and the parents on an ongoing basis. There were parent volunteers of all types, those who helped with field trips, those who worked with individual students, those who organized bookfairs, and those who helped on environmental projects like "the greening of the playground". Charles Darnay also published a weekly newsletter for the parents.

It seemed to me that the Charles Darnay parents were, in many ways, shaping the educational experience of the students. Although this tended to create a lot of stress for

Louis and his staff, it did result in what was generally perceived to be a quality education. The school was completely full at 474 students and was in such high demand that some parents in the neighbourhood were sending their children to the Charles Darnay daycare with the hope of getting them into the school by kindergarten.

Because of the support the school received from its community, Charles Darnay had a sense of autonomy about it. They followed their own rules and not always those outlined in Toronto Board policy documents. The Research Services Department advised me at the beginning of this study that Charles Darnay did not tend to welcome outside researchers with open arms. Nevertheless, I viewed this as an opportunity to investigate their autonomy rather than as a threat to my research.

### **Computer Networking at Charles Darnay**

A key component of Charles Darnay's individuality was their presence on the World Wide Web. They were the first elementary school in the Toronto Board of Education to have their own web site. Several articles about this have appeared in local newspapers, but cannot be cited here in order to protect the school's identity.

The school web site came about through the initiative of Louis, Carol, and the help of two Charles Darnay parents who work for an Internet consulting firm. Therefore, there were a few key people who were responsible for shaping the technological identity of the school, just as at Sydney Carton Raymond was largely responsible for shaping the school's International Languages identity. Later, I was to find out that there was another elementary school in the neighbourhood that was not nearly as technologically advanced

as Charles Darnay. This was because no educators there had taken the initiative to build the school's identity in this area.

Charles Darnay's unilateral initiative in seeking outside assistance to obtain Internet access and their own web page was not openly endorsed by The Toronto Board of Education because of its stated policy concerning inter-school equity. Charles Darnay had chosen to ignore this policy because they felt that the Board was "dragging its feet" in implementing the Internet in schools. They felt that the Board was paying too much attention to ensuring equity, while schools in other boards of education were already "surfing the Net". So Charles Darnay had gone ahead on its own in implementing the Internet using the Board's tentative net surfing guidelines and creating their own "web crawler permits" for students to earn.

One of my first experiences at Charles Darnay was on November 6, 1995 when I attended an informational meeting for parents about the Internet at Charles Darnay. The key speakers were the husband and wife team who had developed the Charles Darnay web site. They gave an overview of the web site and spoke about the potential uses of the Internet in the classroom.

In speaking with them after the meeting, what struck me was their firm belief that businesses should be more heavily involved in schools. They expressed their disdain for the slow-moving bureaucracy of the Toronto Board of Education and the implications its computer equity policy had for Charles Darnay students. They argued that many of the students already had computers and the Internet at home, and that this created an opportunity for the web page to inform and educate students and parents, and enhance the

school's sense of community. These parents believed that the school would still not have a web page and Internet access if they had not facilitated it themselves.

Having reviewed the educational structures in place at Charles Darnay, I will now turn to Carol's educator role definitions.

## **Educator Role Definitions**

### **Carol**

#### **Before the Networking Projects**

For Carol, education had been a career change. At one time she had considered becoming a lawyer, but had decided to pursue teachers college and a master's degree in library science instead. As the school librarian, she had to serve the entire school population. The data indicates that her role as an educator was characterized by the following themes: *serving teachers and parents, time and logistics, and increasing the school's public profile.*

#### **Serving Teachers and Parents**

When Carol first introduced me at the November 6 parents' meeting as "our newest partner", I was a bit surprised because of the short time I had known her, but I could sense that she was anxious to get started, and eager to report to the parents that she was making progress in getting their children on the Internet. The following e-mail, which was sent to me at the beginning of our collaboration, expresses this sense of urgency:

David, Already I have questions. Harriet, the teacher involved asked if it would be possible to somehow involve the whole class over the year. She's right - if a letter goes home and parents hear about it they will all want

their child involved. Can this be structured to be ongoing, repetitive, or could I repeat what you and I do together with another group? Maybe one group could be involved in an overseas project and the other group with a U.S. school and we look at comparisons of the experience and results. Also, is this a one-shot deal - what if other teachers suddenly want to get on board? Can they be accommodated? I found the TBE Draft policy and I will photocopy it and give you a copy - just remember it is a draft only. Carol

Carol's numerous questions and concerns reveal that she was pressured in her position by time and logistics.

### **Time and Logistics**

Because of the number of people that Carol had to serve, she did not have time to become too involved in any one particular networking project. She was trying to facilitate as many teachers' initiatives on the Internet as possible in addition to fulfilling her regular responsibilities as a teacher-librarian. The problem of time is clearly and succinctly stated in her answer to the following interview question:

\*q.15: What have you noticed in your school as far as teacher resistance to the implementation of technology? Any examples?  
CAROL: Time!!!!!!

This sense of not having enough time is also expressed in the following e-mail:

David, my life seems to move from inertia to overdrive. Too bad there's no medium speed. I have looked at the application form - Could you please look at #9,8 (telnet), #11, #12, or for #14, how about our intro from our WEB site? If this project only goes to December, that doesn't give us much time - can we extend? I promise to talk to Harriet tomorrow about timing and let you know by the end of the day. How do we proceed - how much time do you want with the kids, how often? If you can answer these questions it will be easier to make arrangements with Harriet. I don't have a problem with you receiving the e-mail or I will forward everything - whatever works best for you. You'll have to show me how to ftp stuff. Carol

As the students in this study were taken from their class once a week to participate in the networking projects, Carol felt that our activities had to be quick and well-defined so as to maximize the time spent with them. She was not interested in carrying out any long-term in-depth projects. She wanted to keep the projects moving because she felt that young students needed quick feedback from their counterparts to keep them motivated:

David, it might be easier to have the kids join a project already up and going rather than sending out introductory messages with no response. I think Harriet was hopeful it was going to be Japan because it would be more meaningful to the kids with regards to curriculum but we could start off somewhere else...the difficulty in working with elementary school children is their need for immediate response. I assumed that the other school that had listed their name would be ready to write back but it doesn't sound like they are...Carol

In the following e-mail from the second term, Carol states her preference for finite, well-defined projects:

David, I am also looking for projects. I like projects like the Problem Busters, that has a definite beginning and end, and works well with a group, not dependent on individual writing or keyboarding. When the children you are working with have to be pulled out of a class, and the whole class is not involved, then it becomes increasingly complicated. Carol

Closely related to the issue of time, was Carol's concern about the logistics of carrying out computer networking projects:

...With that many kids, you have to think of the logistics of having them write and input, with only one computer here. Their keyboarding skills are minimal. So maybe they could write their replies with us, then I'll work out the logistics of inputting later with them, and then you and I could look at those other projects. How does that sound? They could be with us from 9:30 to 10:00 maybe? Can we meet from 9:00 to 9:30 first? Carol

Carol mentioned to me that if the classrooms at Charles Darnay had more computers in them, each student would be able to input his or her composition at his or her own rate

during regular class time. This might have resulted in less pressure on her to have them compose and send their messages during their scheduled library time.

### **Increasing the School's Public Profile**

Aside from her responsibilities to her fellow teachers, there was evidence that Carol had, as a goal, increasing the public profile of Charles Darnay Public School using the Internet. Her answer to the following final interview question reveals this:

\*q.12: Do you think having the Internet has changed your school's identity in any way? If so, how?  
Certainly having our own WEB site has increased our public profile.

There were other indications of this objective. Prior to my arrival, Carol had been successful at obtaining press coverage for the launch of the school's web site. She indicates in the following final interview question what her vision for the future of information technology at the school is:

\*q.26: What future plans do you have for networking in your school?  
CAROL: Making telecommunications and the Internet part of every classroom project and establishing more connections throughout the school, and giving the kids the skills necessary to update our WEB site themselves.

### **After the Networking Projects**

After our networking projects, Carol did not show any significant differences in the way she defined her role, as her answer to the following final interview question indicates:

\*q.10: Have your personal views on education changed since you started working on the Internet? If so, how?  
CAROL: No.

Overall, Carol seemed to define her role as a facilitator, making possible the pedagogical wishes of others by serving teachers and parents in the Charles Darnay Community.

Along with Louis, she was a key individual in reacting to old Board policies and structures and creating a new school identity for Charles Darnay.

As an interesting aside, when I returned to Charles Darnay in September, 1996 for a visit, Carol was no longer there. I was told that she had obtained another position within the Board. At that time, I noticed that the library layout had changed. The Macintosh computer and modem were now at the very back of the library. In their place, near the library entrance, was a sofa and a coffee table. In speaking with the new librarian, I found out that the library's focus on information technology had lessened since Carol's departure.

## Summary

In this chapter, I attempted to paint a portrait of Charles Darnay Public School, including its educational structures and educator role definitions. In the next three chapters, I examine the three major themes that arose from the data: *pedagogy*, *literacy*, and *equity*. I begin in Chapter 7 with a discussion of *pedagogy*.



## CHAPTER 7

### PEDAGOGY

In this chapter, I examine the pedagogy of the teachers at Sydney Carton and Charles Darnay using Cummins' (1996b) model for pedagogy, which was described in Chapter 2 (see Figure 2). In doing so, I pay special attention to the teachers' instructional assumptions about *knowledge* and *learning* and their social assumptions about *curriculum* and *student outcomes*. In Chapter 8, I will discuss the instructional assumption of *language* under the chapter title of "literacy". Then, in Chapter 9, I will discuss the theme of *equity*.

#### Marisa

##### Stated and Practiced Pedagogy

In her initial interview, Marisa stated a *transformative* pedagogy. A transformative pedagogy is one that uses collaborative critical inquiry to relate curriculum content to students' individual and collective experience and to analyze broader social issues relevant to their lives (Cummins, 1996b; Cummins & Sayers, 1995).

Throughout the study, Marisa attempted, as much as possible, to practice a transformative pedagogy. For the context of our cross-cultural networking project, however, the pedagogy that she practiced was more *progressive* in orientation.

In examining the data, it is useful to look at Marisa's instructional and social assumptions. The reader may recall that the progressive and transformative pedagogical orientations are similar in their instructional assumptions, but differ with respect to their social assumptions (Cummins, 1996b; Cummins & Sayers, 1995).

## **Instructional Assumptions**

### **Knowledge and Learning**

The data revealed that Marisa's approach to knowledge was not static, but catalytic. When we started our collaboration at the beginning of the year, she knew very little about computers or the Internet, and I knew very little about the Portuguese language or culture. However, her willingness to learn a new technology and my willingness to learn about the Portuguese culture enabled us to have a great synergy in our collaboration.

This was partly because Marisa believed the Internet had great educational potential to build her students' cultural identity in ways that were not possible in the classroom. The Internet provided them with the opportunity to escape the four walls of schooling and co-construct knowledge with peers in the United States, Portugal and Brazil.

This would not have been possible if Marisa were a teacher who had a view of knowledge that was inert, as something that came from the teacher or textbook and was deposited into students' memory banks. Rather, the following e-mail demonstrates how she felt that learning for her students had become active and catalytic by the final stage of our project:

Hi David,

> How are you finding the last stage of PROJECTO?

1. Out of 100 7/8 graders the Projecto students interviewed so far, 75.
2. Seems that this stage is the one that makes everyone happy! They all seem to love this part. They are interacting!
3. This stage gives the students hands on...action! The kind of have ownership of their work, they see the results all at once...
4. I am happy seeing them reacting the way they are: They are reacting!!! In a good, well behaved, well organized way.
5. Hopefully, I will be able to sort through all the information and have the results posted at the end of the next week.

Ate breve,  
Marisa

The actual knowledge that the students were acquiring in Projecto was, perhaps, not the type I had originally envisioned, that is, based on a critical pedagogy. However the above e-mail does indicate that by the final stage of the project, the students had become sufficiently motivated by peer interviewing and cross-cultural comparisons that Marisa could probably undertake deeper-level investigations with them in the future.

## **Social Assumptions**

### **Curriculum**

Marisa encouraged democratic participation in her classroom. She believed the curriculum should focus on critical examinations of student experience and social realities. In the following, she describes her approach to teaching her Portuguese-Canadian students:

**Marisa:** I like to start with the concrete...start with CANADA and build their Canadian identities...make them feel like Canadians. Then, I bring in their Portuguese background and culture.

This statement suggests that for Marisa, the curriculum consists of much more than the prescriptions for learning laid out in policy documents like The Common Curriculum. Rather, she sees the curriculum as something that only becomes useful when it is matched to the needs of her students. She is also keenly aware that the social assumptions she conveys to them through her pedagogy are crucial in building their identities.

### **Student Outcomes**

A transformative pedagogy has, as its aim, the outcome of empowered, critical students. Through examining their cultural similarities and differences with distant peers, “A Cultural Collage - in Portuguese” did not prove to be a successful way of achieving this. This was entirely due to Marisa’s wishes; she felt that her students would not be interested in undertaking a project that included the social assumptions of a transformative pedagogy.

Despite the lack of evidence of a transformative pedagogy in the project undertaken, throughout our collaboration Marisa exhibited several of the elements of collaborative critical inquiry as described by Bigelow et al.(1994).

### **Collaborative Critical Inquiry**

In the pages that follow, I will briefly describe the ways in which Marisa demonstrated some of the elements of collaborative critical inquiry.

### **Grounded in the lives of students**

Marisa had a difficult job making her students appreciate the Portuguese language and culture, especially at the rebellious and formative ages of 13-14. For many of them, Portugal was considered “behind the times”, and they only spoke Portuguese at home with their parents. They were more “Canadian” in terms of their dress, music, food, and other social customs. In certain ways, they seemed to be torn between their Portuguese and Canadian identities; their friends and family were Portuguese, but the society all around them was Canadian.

Marisa grounded her teaching in the lives of her students by recognizing where they were at in their learning, and trying to work with them to build knowledge about their cultural heritage. This meeting seemed to occur in what Vygotsky (1978) called the “zone of proximal development”, or what Cummins (1996b) refers to as the interpersonal space between educators and culturally-diverse students.

### **Critical**

Marisa’s belief in the value of critical thinking is expressed in her answer to the following question:

**\*Q9:** Are there learning activities that you have found particularly useful in building problem solving, creative writing, or critical thinking skills?

**MARISA:** In a way, the learning activities that I do in my classes encompass all of these skills i.e. units related to the environment (pollution), global issues (violence).

Pollution and violence are both global issues whose roots extend beyond the classroom, and whose discussion requires critical thought.

### **Concern for global issues**

Aside from the above example, Marisa also states a global perspective in her answer to the following interview question:

**\*Q16: Are there special issues that you feel your students would benefit from examining with students in another country?**

**MARISA: Sharing opinions and ideas about global issues.**

As mentioned earlier, her concern for global issues was confirmed by my interaction with Marisa during non-teaching time. She would often engage me in conversations about social issues that concerned her, such as the situation in East Timor or child labour laws in developing countries.

### **Multicultural, anti-racist, pro-justice**

In addition to being an International Languages instructor in a multicultural school within a multicultural board of education, Marisa was also originally an immigrant to Canada herself, from Angola. Her answer to the following question suggests that she had a strong interest and belief in intercultural learning:

**\*q 15: What sort of teaching activities would you like to take place in an exchange?**

**MARISA: Students from my class corresponding with students in Portugal, exchanging all sorts of information of their interest. Help them develop awareness and appreciation of similarities, differences, and interests of students their own ages.**

### **Participatory, experiential**

Marisa believed experiential learning was beneficial to her students. During our project, she and I decided that we would involve a translator. We located Eva, a Portuguese-Canadian university student who Marisa believed might also serve as a good

role model for her students. The following is an example of one of our collaborations with

Eva:

Hi David & Eva,

Here is my version. Eva will translate into English a.s.a.p. (we talked on the phone about it) and David you will read it, and if it is ok we'll send it....

Ola Colegas,

Esperamos que nao estejam demasiado preocupados se nao estao a conseguir cumprir com os prazos, previamente estabelecidos, para as diversas fases do projecto.

Afinal, o projecto acaba, oficialmente, a 24 de Maio de 1996.

A ideia e' de termos tempo suficiente (apos termino da 4a. e ultima fase do projecto) para falarmos sobre este trabalho, dando opinioes, sugestoes, todo o tipo de comentario que achem por bem fazer.

Esperamos que "Uma Colagem Cultural - em Portugues" seja, para todos vos, uma experiencia agradavel, tanto a nivel academico como ludico.

Principiamos ja a trabalhar na pagina da Web do projecto. Esta a ficar tao interessante que, estamos convencidos vai ser do agrado de todos vos.

Contamos inserir todos os escritos dos alunos (por razoes obvias, so usaremos os nomes proprios deles). Os nomes e moradas das escolas, os vossos nomes e enderecos electronicos vao ser divulgados. Caso tenham alguma objeccao, por favor, nao hesitem, escrevam a dizer-nos.

Antecipadamente gratos pela vossa atencao e colaboracao, somos,

Atentamente,

Marisa, David, Eva

Aside from having her become fully involved in "A Cultural Collage - in Portuguese",

Marisa used Eva in the classroom as a Portuguese tutor and educational assistant.

As well, by her own volition, Marisa took the initiative and sought out networking partners for our project:

Ola David,

I "found" a new school in Portugal and I sent them an invitation to participate in our project... (getting clever or what!!!).

Ate breve,  
Marisa

In scanning newsgroups for postings from other educators who wanted to participate in cross-cultural projects like ours, Marisa found the following message written by a teacher in England:

Request from:

-----

Name: NM

E-Mail:

Institution: INFANTS School (primary)

Location: London, UK

Seeking partner:

-----

Partner Type: class

Institution Type: primary

Culture: England, mixed cultures, urban

Language: English/Portuguese

Time Frame: Jan-May 1996

Number of Partners: 10

Other Comments:

-----

Infants School: up to 7 years of age.

We have many Portuguese speaking/reading children in our school. We would like to hear from other Portuguese children whether in Portugal or elsewhere to become key pals with the children here.

When I asked for Marisa's reaction to the young age of the students in this posting, she responded to me with the following message:



**David,**

**I teach all grades. I think we should not pass this RARE opportunity. Why not try to find out more about this posting? After that we'll make an "educated" decision, agree?**

**Marisa**

**Finally, in “A Cultural Collage - in Portuguese”, Marisa made sure that each student was involved in the writing of messages to their partner groups in Portugal, even if they could not all send the messages on the one computer we had at our disposal.**

**Hopeful, joyful, kind, visionary**

**“Dona Marisa” as she was affectionately known to her students, acted at times like a loving parent, providing her students with the emotional support they needed, inside and outside of the classroom. Given the fact that many of the parents worked nights and were unable to become too involved in their children’s education, Marisa felt responsible for providing the children with a warm school experience so they would want to continue with their education.**

**Culturally sensitive**

**Marisa demonstrated her cultural sensitivity in several ways. For instance, at the beginning of the project she distributed an informational letter to the parents in both Portuguese and English. Throughout our project, she was very concerned about making all correspondence with the participating schools and teachers respectful of their national and religious holidays. She took the time to recognize these occasions by sending e-mail greetings to the foreign teachers and students.**

One particular example of Marisa's cultural sensitivity seemed to stand out for me. One of the students in her class was of mixed Chinese-Canadian heritage and did not have the same knowledge of Portuguese as the rest of her classmates. In Projecto, Marisa allowed this girl to do all of her writing in English and never made her feel different from the rest of the students. Below is this girl's first contribution to Projecto in which she introduces herself:

My name is \_\_\_\_\_. I am 14 years old and I'm in Grade 8. I have brown hair, brown eyes. I'm a girl, I'm 5 feet 4. I have long straight hair. My background is English and Chinese. I am learning Portuguese. But I have problems writing some sentences.

I like shopping at "Attitude" for my clothes. It's at the downtown Eaton Centre. I think it's cool to learn new languages. I love taking pictures of stuff. I love animals. I go to the Metropolitan Toronto Zoo every summer. Last summer I went with my friend and her dad. We saw the white tiger exhibit. I don't playing soccer. I hate eating liver. I really hate mosquitoes. In grade six I went on a class trip to Grange Park. When I came home I got seven mosquito bites on my arms and legs. On the weekends I go to the movies. My favourite movie is Rumble in the Bronx with Jackie Chan. I go rollerblading on Saturdays, and when I have time I talk on the phone everyday. I hope to become a dentist when I grow up.

At home I live with my mom, my dad, and my younger brother John Paul. My family celebrates Moon Festival, Lunar New Year, New Years, Christmas, Halloween, St. Patrick's Day, Remembrance Day, Victoria Day, Valentines Day, and birthdays. I live in a house, and I'm glad I have my own room. Bye Bye! \_\_\_\_\_.

Having examined the stated and practiced pedagogy of Marisa, I will now turn to an examination of Carol's stated and practiced pedagogy.

## **Carol**

### **Stated and Practiced Pedagogy**

When I first came to Charles Darnay in September, 1995 with a proposal to undertake cross-cultural learning with a school population that was mostly white and English-speaking, Carol indicated to me up front that this type of project would be of limited value to her personally. In this sense, is fair to say that Carol's stated pedagogy proved to be consistent with her practiced pedagogy.

As much as possible in our collaboration, I attempted to seek direction and input from her about the nature and direction of the projects. Carol did not explicitly endorse or reject any one pedagogical orientation. Her primary role appeared to be attempting to serve the needs of her fellow teachers by facilitating their projects on the Internet. In time through our collaboration, some of Carol's own pedagogical beliefs became evident. I will now discuss Carol's pedagogical orientation in terms of the instructional and social assumptions that were revealed in this study.

### **Instructional Assumptions**

#### **Knowledge**

In the initial interview, I asked Carol about the type of activities she would like to undertake in a computer networking project:

\*q 15: What sort of teaching activities would you like to take place in an exchange?

CAROL: Ideally, I'd like to see the children gathering information about their community. What's different about the way they live? They take a lot for granted I think.

\*Q16: Are there special issues that you feel your students would benefit from examining with students in another country?

CAROL: I'd like to see them look at things like the Quebec referendum. At the Grade 3-4 level, I think they need immediate topics to relate to, not global issues.

Carol's answer to the first question revealed that she wanted her students to appreciate how fortunate they were as middle class, mainstream students. Her answer to the second question reflects her desire for knowledge for her students that is proximate and finite.

### **Learning**

In terms of learning, Carol suggests the type of cross-cultural collaboration she would like to undertake with Japan in the following e-mail to the Japanese teacher:

Dear \_\_\_\_\_,

David and I would like to plan a project that our students could work on, and maybe your students could do the same thing. We could write about it on our WEB site, when we are done. Today the students said they would like to find out about their family history. They are going to ask their parents and grandparents where they lived when they were 8 or 9 years old. Maybe we could find out information about our neighborhoods too. Is there something you would like to do with your students? Do you have any ideas for a project we could all work on together? I only wish I knew Japanese so you didn't have to do all the translations. The children will be writing soon. Good bye for now, Carol

Carol says she is aware of the language barrier and asks the Japanese teacher for her input on the nature of their collaboration. She also makes some suggestions, including researching family histories.

The first term networking project with Japan did not end up involving this level of investigation, nor did it involve a critical pedagogy. The learning that took place was

informative and “celebratory” of cultural differences rather than a critical examination of social issues. The students sent e-mail back and forth seeking answers to questions they had about each other’s school, country, and way of life.

By the second term, Carol’s priorities for a cross-cultural networking project had changed significantly. The following is the introductory e-mail she sent to the Australian teacher with whom we eventually collaborated:

T\_\_\_\_, I saw your request for keypals and would like to explain what we are trying to do here in Toronto, Ontario, Canada. I am the teacher-librarian in an elementary school working with a small group of Grade 3/4 students (about 16 of them). One of their friends is in the process of moving to Australia so they would like to learn more about the country. I meet with them once a week to try and learn about the Internet so we also are looking for a group to correspond with, low key, short term projects. Our school year ends June 29th, and we are in North America ( is that a problem?) This class was corresponding with Japan last semester and although translation delayed the process considerably, the kids really enjoyed it. Any ideas for "low key" projects? Let me know if you are interested. We will be meeting Monday for the first time to explore possibilities. Thanks. Carol at Charles Darnay

In this e-mail, Carol is interested in communicating only with English-speaking students in the second term and she expresses an interest in “low-key” projects. As well, as the following e-mail illustrates, the topics she wishes to investigate are simpler and less academically challenging than those she proposed in the first term:

T\_\_\_\_, Thanks for your quick reply. Your idea about sending the Australian words sounds great. We will work on an introductory group letter this Monday and send it off - are you on spring break for two weeks - I noticed some of the other Australian contacts on different projects were off. The kids last term were very anxious to talk about pets - so maybe animals inside the home and national animals would work very nicely. Let me know. Thanks, Carol

The change in Carol's requirements for the second networking project were largely shaped by her experiences in the first term. This is discussed in further detail in Chapter 8.

## **Social Assumptions**

### **Curriculum**

During our projects, Carol was also involved in other Internet projects with Charles Darnay teachers, which were unrelated to cross-cultural networking; they were related to science, space, the environment, and other curriculum foci. Carol's answer to the following question indicates this use of the Internet for wide range of activities:

**\*q. 1: What networking projects have you undertaken this year?**

**Carol: Problem busters, Taming the Tube, class-to-class correspondence with a class in Japan, Elroy's Netscapade, contributing to Children's Voice, class-to-class correspondence with class in Australia. We are going to start doing semi-formal research on climate, geography, sports, animals and try and produce a big book in conjunction with the e-mail...Carol**

Unlike Marisa, who was an International Languages instructor, Carol did not have a vested interest in intercultural learning. From what I observed, the investigation of other languages and cultures was related more to her role as a facilitator than to any personal interest in intercultural learning. This is implied in the following e-mail:

**David, ...We only had a few minutes to talk today, but she (Harriet) would be quite happy to "leave" Japan and move onto another project - something with a curriculum base that she could extend in the classroom. Maybe a weather project - it doesn't have to be a country base...Carol**

Carol was interested in undertaking a networking project with Japanese students because Harriet's class happened to be doing a unit on Japan when I arrived. The project was viewed by Carol as an extension of the curriculum, much the same as "Japanese

cooking day” was. This is evident in the following e-mail from the beginning of our collaboration:

David, ....I'm sure...I think Harriet was hopeful it was going to be Japan because it would be more meaningful to the kids with regards to the curriculum....Carol

It seemed that Carol’s priority in undertaking computer networking projects was finding a way to fit them into the existing curriculum, as her answer to the following interview question also clearly illustrates:

\*Q.8: When you embark on networking projects in the future, what things will you make a priority?

Carol: Projects that fit the curriculum.

The reasons for selecting Australia for the second term were less related to the curriculum, as the following e-mail indicates:

David, I just spoke to Harriet again on the last day...it turns out one of her students is moving to Australia, and when I told her I had been contacted by a teacher in Australia she said that would be okay as all of her kids are suddenly interested in Australia. I wrote back to this teacher and asked her what she was interested in ...What do you think? Carol

In this case, the students had somewhat more of a “personal” connection to the country selected.

### **Student Outcomes**

As a result of the projects with the students in Japan and Australia, the students studied at Charles Darnay were being given exposure to foreign cultures. Furthermore, they were being exposed to information technology at an early age. They were discovering various uses for the technology and becoming computer literate.

Because of the overwhelming majority of students at Charles Darnay were mainstream and English-speaking, it is not surprising that Carol would prefer networking activities in English. However, there were a few culturally-diverse students in our project. One boy, who was of mixed race background, made the following comments during his focus group:

DAVID: And what kinds of projects would you guys like to do in the future on the Internet?

JJ: I'd like to learn about Jamaica because that's where my dad's from and my mom's from right here so I know all...I'd like to find out more about my dad's background. I already know a lot about my mom's because she's from right here, and I'm still here. I think the Internet can help with this.

This student's comments made me wonder what opportunities existed for him to investigate his own cultural heritage within the framework of an English-speaking, mainstream school like Charles Darnay.

## Summary

In this chapter, I have examined the first theme that arose from the data. In the next chapter, I examine the second theme. This theme, *literacy*, is actually a subset of the first theme, *pedagogy*.



## **CHAPTER 8**

### **LITERACY**

In “A Pedagogy of Multiliteracies” (Cazden et al., 1996 p.61), the authors suggest that in our information society, we are in need of a new way to view literacy. They propose a multiplicity of literacies based on two principles. The first is “to extend the idea and scope of literacy pedagogy to account for the context of our culturally-diverse and increasingly globalized society”. The second is that “literacy pedagogy must now account for the burgeoning variety of text forms associated with information and multimedia technologies”.

In this chapter, I use the two principles outlined by Cazden et al. (1996) to examine the types of literacy learning that were taking place at Sydney Carton and Charles Darnay. First, I examine literacy in terms of cultural diversity, then I examine it in terms of information technology.

#### **Literacy for a Culturally-Diverse Society**

##### **Sydney Carton**

At Sydney Carton, I found that the teacher and students had different attitudes about undertaking cross-cultural networking projects in another language. Consider, first of all, Marisa’s answer to the following question:

**\*q.22: What do you think about doing networking projects with students who speak a language other than English?**

**MARISA: I think there's no relevance to the language spoken.**

Marisa's answer indicates that to her, language is not a barrier in cross-cultural networking. She views linguistic diversity as an opportunity, not an inconvenience.

Similarly, most Sydney Carton students indicated that it was important to learn about different languages and cultures. Some of their reasons were:

**DFR: Yes, because you can understand others better.**

**EM: Yes, because it's interesting and you know more stuff about people.**

**FO: Yes, it's important to learn about different cultures and languages because when you get older you need them.**

**JP: Yes, because after learning all that we have new ideas.**

**MLD: I think that it is good to learn things that you never knew about people, like how they live and the way they speak.**

However, I found that the Sydney Carton students gave mixed responses to having to read and write in Portuguese for Projecto:

**\*Q.11 Was the fact that we communicated in Portuguese on PROJECTO a good or a bad thing? Why?**

**CC: I think it was a good thing.**

**DF: Good because my background is Portuguese.**

**DFE: It was a good thing because we heard about other people.**

**DFR: Neither.**

**EM: Well, it was okay because the kids in Portugal understand. And we are in Portuguese class. But I like to write in English better.**

**FO: Bad - because I only understand English.**

**JB: Well maybe bad (I'm not a Portuguese talker).**

**JH: Good because I liked it.**

**JP: Sometimes it's bad because some people don't know Portuguese.**

**LM: It was a good thing because we got to learn different things.**

**MD: It was not really good because we don't really know how to write in Portuguese.**

**MLD: It was hard because I'm not good with my reading and writing.**

**MS: Good thing! I learned how to spell more in Portuguese.**

**NC: I don't really know.**

**NM: I think it is good because some people don't know how to write in Portuguese.**

PB: It was good because we learned how to write and read better.  
SC: Good.  
TF: I think it was good because it helped us practice our Portuguese.  
TR: Neither.

When I asked the students if participating in Projecto had improved their reading and writing in Portuguese, I also obtained mixed responses:

**\*Q.12 Did PROJECTO help you to read and write any better in Portuguese?**

CC: It did a little.  
DF: YES!  
DFE: Yes it did.  
DFR: No.  
EM: No. The teachers corrected my mistakes.  
FO: Not really.  
JB: Maybe a little.  
JH: Yes a little bit.  
JP: Not really.  
KP: Kind of.  
LM: I already knew a little but I learned more.  
MD: Not really!  
MLD: A little when I would write to Dona Marisa.  
MP: I don't know.  
MS: Yes!  
NC: A little bit.  
NM: No, because I already know how to speak and write in Portuguese.  
PB: Yes.  
SC: No.  
TF: No, not really. I already knew a lot of Portuguese because I've been in a Portuguese school for eight years.

As mentioned earlier, the Sydney Carton students in this study were mostly of Portuguese origin, some first generation Canadian and some second generation Canadian, with differing levels of oral and written Portuguese language proficiency. This would explain, in some respects, their answers to the above questions.

## **Charles Darnay**

As a teacher in a mainstream English-speaking school, Carol was not enthusiastic about cross-cultural networking in another language, as she indicates in the following e-mail excerpt:

David, ....The opportunity to learn more about Japan was very exciting, but quite frankly, its a lot easier to work in the same language.  
Carol

She expresses a similar viewpoint in the following final interview question:

\*q.22: What do you think about doing networking projects with students who speak a language other than English?  
CAROL: Takes too long for translation.

In the project with Japan, the Japanese teacher had to translate all of her students' writing into English for the Charles Darnay students, and also translate all of the Charles Darnay students' writing into Japanese for her own students. Since the time needed to do this was substantial, the time lag between e-mails was often more than a week. This was a key source of Carol's frustration.

Because the children we were working with were young, and because Carol felt that they needed more immediate feedback, she suggested that we choose an existing project with English-speaking partners for the second term to facilitate easier correspondence:

David,...I want to start with the second group after the break - there have been inquiries from parents so we have to be fair. I'll look too but what I want this time is an existing project, in English, that we can just plug into, instead of starting from scratch...Carol

Despite the fact that approximately 98 per cent of the Charles Darnay students had English as their first language, their attitudes towards cross-cultural networking with

students who did not speak English seemed, on the whole, very positive. Consider the following comments of the students who networked with Japan:

**\*DAVID:** Was it hard learning with Japan because they spoke a different language?

**CG:** Not really, no.

**\*DAVID:** Why is it important to learn about different languages and cultures?

**GN:** Maybe sometimes people may not be able to speak as well your language or write as good as you..you might take time to kind of read it...you learn about different people...Everyone likes learning about other people. I kind of learned that everybody's just the same even if they talk a different language.

**CG:** Or eat differently, you're just learning about other people.

**KM:** I think it was good because we got to try something they ate. And I think it's really cool learning about a different country that I didn't know anything about.

**JA:** Well what I thought was neat was that we got to write our names in Japanese.

**KM:** Oh that was AWESOME!

Of course, some students expressed other communication problems in the Japan project:

**\*DAVID:** Do you feel like you got to know the people on the other end?

**JA:** Well-like no.

**\*DAVID:** Why?

**TJ:** Umm, well.

**DB:** I don't think it got that far as I thought it would.

**\*DAVID:** Do you think it had something to do with the language?

**DB:** Umm, a little, but we didn't really get to meet the kids. We talked to the teacher more than the kids.

**\*DAVID:** The kids spoke Japanese and the teacher had to do the translating.

**DB:** Ya.

**JA:** Ya.

Despite the truth in the children's statements - there was translation by the Japanese teacher - language was not really a barrier for the Charles Darnay students because they sent and received all their messages in their first language, English. Their comments suggest that they enjoyed learning about a language and culture that was quite different from their own. It is apparent from such remarks that even such young students have a

natural curiosity about other languages and cultures. JA succinctly expresses the combined oddity and fun of communicating with Japanese-speaking networking partners in the following statement:

JA: Well you know what I thought was cool was when they'd introduce something... they'd always get mixed up...like when they translated. I find that kind of like cool.

Having examined literacy in terms of a culturally-diverse society, I will now discuss literacy for an information society in terms of the contexts studied.

## **Literacy for an Information Society**

### **Reading and Writing**

The data revealed that for both Carol and Marisa, a new level of computer literacy for students was very important, and even essential. The way that Marisa expressed this was that information technology was “opening up many new gateways to learning”. She said that she had observed definite benefits to her students’ first and second language reading skills as a result of working on Projecto. Carol, on the other hand, said that she had not seen any significant reading and writing benefits for her students as a result of the networking projects. However, she did express that her students were more eager to publish on the Internet after our projects.

As the study progressed, a few of the Sydney Carton students who were given Alex Videotex machines became very familiar with the Internet. One student in particular, DF, took to the Internet more than the rest of her classmates. She claimed that using it had greatly assisted with her reading and writing skills. She had obtained several e-mail pals in different parts of the world and had even started her own mailing list. This is quite

remarkable for someone who had never used a computer before. The following e-mail, which I received from her in September, 1996, illustrates what she had managed to accomplish:

Hi Mr. Dodick,

How was your summer? Mine was okay. Today was the first day of school. I think that you should know that ever since I got an Alex, I can type faster and do a lot of other things. I spend 5 hours a day on the Alex. I post messages on the WWW, I have 4 penpals. Hanna, Nicole, Marianne, and another Nicole. Hanna lives in Malaysia, Nicole lives in Sault Ste. Marie, Nicole 2 lives in Florida, and Marianne lives in Australia. I love typing, posting messages everything is great. I never had any trouble. I'm glad that you let me keep the Alex. BYE  
DF write back

In terms of what she was able to accomplish on the Internet without much assistance, DF was definitely an exception in terms of the Grade7/8 population studied at Sydney Carton.

It is interesting to note, however, that at Charles Darnay, most of the much younger Grade 3/4 students expressed a similar confidence about using the Internet, possibly because of their prior exposure to computers at home:

\*DAVID: Is the Internet hard to learn?

LB: No. 'Cause I've been on it and it's really simple.

\*DAVID: RM?

RM: I've used it a lot and the first time I used it I was with my mom and it's easy. If you know a web site you can get into like tons of other ones. I started off on the TSN one and I got to a lot of other web sites...it's sort of like a puzzle, once you know it you just can't forget it.

JB: I've never hooked up yet but I think it's probably gonna be not that hard.

The Charles Darnay students had both positive and negative comments about reading on the Internet versus reading traditional textbooks. Some of their comments about reading on the Internet were:

TJ: I think the Internet is more interesting than reading a book because like a book just sits there.

KM: If it's not a picture book, don't read it, go on the Internet.

JB: Well, because it's a computer, and I really like computers and textbooks are just math (mumble) and not fun.

RM: Well-um I think that-um...I like the Internet better because if you're reading a textbook it sort of gets kind of boring 'cause there's like the same picture over and over again, and on the Internet you can always access different stuff, and you get different stuff on a certain topic. Like if you get textbooks..something about a volcano, you get so many pictures..you can access different places.

CS: I like the computer because sometimes it's faster to turn the page.

GN: Well, with the page there..let's say you have to get to page 235 in textbook and there's 439 pages, you have to flip all these pages and finally you're there, but with the Internet, all you have to do is click a button and it's there. The page is right there.

The Charles Darnay students also had both positive and negative remarks about writing on the Internet. Several of the comments had to do with typing versus cursive writing. Some of the positive comments were:

\*DAVID: And..what do you think about reading and writing on the Internet instead of using a textbook?

GN: 'Cause...on the Internet, it's kind of like...maybe you're talking to someone..like you're maybe actually reading something that someone has given you? I think sometimes our textbooks are really heavy but with the computer..like it's really bad and it's hard to pick up but the computer it just stays in one place so..I think that this way is a tiny bit better because you don't have to take your pen or book with a piece of paper and start writing with a pen..it takes you longer and sometimes it hurts your wrist.

JJ: Well, all you have to do is point and click. Everything else you have to think and write down.

JB: I think it's really a lot easier to use the Internet because I like typing and stuff.

LM: I think the Internet makes it a bit easier in a way because it's easier to like..just type it down and then like...

JA: Well, I like writing on the computer better because my writing's really bad..and like most computers have a spell check for like if you don't know how to spell something you just use the spell check.

CG: I think the new way's better the way you use your fingers on the keyboard.

SW: I find it kind of easier to type because I use the computer a lot..you just turn it on and write or play games or I get used to typing and I get a little better at typing.

EL: I like it better on the computer because you don't get a big bump on your finger.



The negative aspects expressed by the students about writing on the Internet included the following:

LJ: Well, I find it a little harder to type, but it would probably be faster if I knew how.

KM: This is KM, I have NO idea what a spell-check is, I'm not very good on a computer. I find using my pencil and paper easier than using a computer 'cause I CANNOT TYPE!

TJ: Okay, I can't type either.

DB: Well, I'm not a good typer but I have this Mavis Beacon thing...it's really cool.

JJ: I think that I'd rather write with my hand because sometimes it takes a lot longer just to find the keys and all that...and I know exactly what I'm gonna say.

CS: Um, I think writing is easier with my pen.

There were also some mixed responses:

\*DAVID: What do you think about reading and writing on the Internet compared to pencil and paper?

EL: It's easier..

RR: I hate both of them. I find writing just on a piece of paper is faster and kind of easier than on a computer. I hate reading on the computer and I hate reading from a textbook.

\*DAVID: EL, do you agree?

\*DAVID: Do you like reading a textbook more or reading on the screen?

RR: They're mostly the same.

## **Motivation**

I also asked the Sydney Carton and Charles Darnay students about the extent to which the technology motivated them to read and write more. The Sydney Carton students gave mixed responses, perhaps because they did not have access to some of the more advanced graphical features of the World Wide Web that they needed to accurately answer this question. Unlike the mixed responses of the Sydney Carton students, most of the Charles Darnay students were predominantly positive about increases in their motivation to read and write as a result of using the Internet, as the following focus group excerpt indicates:

**\*DAVID:** Do you find that the Internet makes you want to read and write more?  
**GN:** Kind of. 'cause of people are sending you letters you can always read them. Especially if you just got your Internet and someone sends you a letter 'cause they heard that you got it.  
**\*DAVID:** So you'd want to write them back..because it's quick?  
**GN:** Ya. It's really exciting.  
**ID:** Ya.  
**\*DAVID:** Do you find you're more motivated when you use a computer?  
**ID:** Ya!  
**ID:** Ya!  
**CG:** Ya!  
**\*DAVID:** How come?  
**GN:** I think because instead of just writing stuff from a book and just doing all this homework..it's more fun on the computer because you can do more things...it's like, more funner.  
**\*ID:** Ya.

Another perspective is offered by RR:

**RR:** Umm.....well because me, myself, don't tell the teacher about this, but I kind of doze off when she's talking, like I'm not really paying attention but on this there's like nobody's talking you're just looking at it and I find working on it easier than listening.  
**\*DAVID:** Are you just looking? You can't click on the teacher and say.."next topic".  
**RR:** Ya. Well, um, like a lot of different countries put a lot of different stuff that you wouldn't find in books on the Internet. Like some facts..cause like it's up-to-date.

As well, as she indicates in the following e-mail, Carol felt that the opportunity to type on the computer was one of the prime motivating factors for the students:

I also explained their turn was almost over and the next group might continue or move on to another project. I promised they would all have a chance to "type" - that seems to be of most interest. Carol

At Sydney Carton, some of the students who participated in the secondary study expressed a definite increase in their motivation to read and write as a result of having the Alex, while others did not. One student, LM, had only immigrated to Canada from Portugal in Grade 6 and was less proficient in English than many of his classmates. He

kept regular Alex journals which indicated that he enjoyed using the Alex. The following comments were taken from his journal:

April 3, 1996

*Where did you go with Alex today?*

I went to send a message to Mr. Dodick.

*What did you like about the experience?*

It was good.

*What did you dislike about it?*

It took a lot of time to write the message and I couldn't finish my message because the time was up.

*What did you learn?*

That I should type faster.

April 12, 1996:

*Where did you go with Alex today?*

I went to the North York libraries.

*What did you like about the experience?*

I had fun in there.

*What did you dislike about it?*

Nothing.

*What did you learn?*

How to work with it.

April 21, 1996:

*Where did you go with Alex today?*

I went to the Toronto Public Library to find some books to read.

*What did you like about the experience?*

I learned how to find books. It was fun.

*What did you dislike about it?*

It was hard to find what I wanted.

*What did you learn?*

I learned how to find books.

*What do you want to find out more about?*

There are some parts that I can't get into.

From his journal, it was obvious that LM was motivated to learn how to use the Alex and find useful information. There were also other Alex study participants who became motivated because of the technology. The following notes are taken from the journal of SN, a female inner-city parent of East Indian background:

February 7, 1996

I went into the system and learned how to look for the books I want at the public library and also how to place a hold on a book. I learned which branches offer videos for borrowing.

February 8, 1996

My kids checked to see all the titles that are available in the Goosebumps series. They placed holds on the ones they haven't read. As a result they are reading more books because they are seeing all the titles and want to read all of them.

February 14, 1996

Joined a conference, Education Discussion. Learned of some of the concerns high school kids are having.

February 17, 1996

Went into the system and found out about community services. The branch closest to me had an evening planned with fun for kids, with story telling and a puppet show. My kids and I attended and it was fun. Also found out that there's usually something planned every Saturday in most of the libraries and the Alex will help me to read the schedule and plan my Saturdays ahead.

February 27, 1996

Joined a conference on nutrition discussion and I was very impressed. There is so much information on healthy eating and advice for people who are on a diet. This has really been helpful for my husband and myself.

March 5, 1996

Joined a conference on arts and crafts, found out about some really neat gift ideas you can make that doesn't cost a whole lot of money. This is one conference I will visit regularly because I love arts and crafts and it also helps me in my job. I work with kindergarten kids and arts and crafts are a big part of the program.

April 7-April 13, 1996

The whole family can sit down and enjoy reading material on the Alex, especially Trivia Forum and Soap Operas on Ability On-line, some of our family favourites. My son has to do a book report every week and it is easier for him to find the books that he needs with the Alex. Ability On-line gives you so much information on almost any subject you can think about.

As motivated as SN was when given the Alex, and despite the numerous benefits it seemed to offer her and her family, many of the other students and parents who were

given the machines did not participate to the same extent. There were several reasons for this including: a lack of time, a lack of knowledge about the technology, a lack of interest, or frustration resulting from not being able to get through on the Toronto Free-Net's phone line. For example, the following comments were taken from the Alex journal of one such participant, VC, an inner-city female and parent:

February - March, 1996

Sorry for not being more useful with your study. I am basically illiterate when it comes to technology I am trying but I need more "instruction" as to how to operate the machine and get it to work for me. Help!! VC.

The experience of such Alex participants may be attributed to their lack of prior experience with computers. It is clear that providing more assistance and support with using the Alex would have made a difference in the quantity of data I received in the secondary study. However, this was not possible due to the time demands of the primary study. Also, having provided several Alexes to students and parents in the Board and having set them up with Free-Net accounts, I was mainly interested in finding out what they could accomplish on their own. It is natural that some would achieve a lot on their own, while others would achieve less.

## Summary

In summary, there were some key differences in literacy learning on the Internet between Sydney Carton and Charles Darnay. At Sydney Carton, the technology was not modern and was not available to the majority of the students. However, the technology that was made available to them did prove to be technologically sophisticated enough to carry out meaningful literacy learning activities. I found that when I brought my laptop

computer to the school and exposed the students to the graphics on the World Wide Web, they were even more motivated than they had been with the Alex. So the graphics did make a difference in terms of motivation.

At Charles Darnay, most of the students had access to the World Wide Web at school and at home, and this seemed to increase their motivation in terms of reading and writing. Despite this luxury and the potential benefits for literacy learning, I did not find a clear and consistent pedagogical vision for the technology at this school. The parents and teachers seemed enamoured with its power and panache, but did not seem to be considering how it might be used to improve their students' creative writing, problem solving, or critical thinking skills.

In this chapter, I examined the theme of *literacy*. In the next chapter (Chapter 9), I examine the final theme which arose from the data: *equity*.

## CHAPTER 9

### EQUITY

“I want there to be no peasant in my realm so poor that he will not have a chicken in his pot every Sunday.” - Henry IV of France (1553-1610)

“A chicken in every pot and a car in every garage.” - U.S. President Herbert Hoover

These two famous lines, although spoken in different centuries by leaders of different countries, are strikingly similar. Both promise hope to citizens who are experiencing difficult times. In A Tale of Two Cities, the English public experiences comfort, prosperity, and security while their French counterparts experience increasing squalor and danger. This is because of a growing dichotomy between rich and poor in France, which eventually leads to the French Revolution.

In this chapter, I examine *equity* as a recurring theme in my data. I could not help noticing differences in the access that participants at Charles Darnay and Sydney Carton had to the Internet. This was particularly reinforced by the fact that the Grade 3 students at Charles Darnay had greater access to the Internet, both at home and at school, and knew much more about the “information highway” than their Grade 8 counterparts at Sydney Carton. From the data, I found that the following factors, which differed between the two schools, were possible explanations for the inequity of access observed:

- a) home language and culture;
- b) parents’ level of education, occupation, and income; and

c) gender.

There were important differences *between* the two schools for most of these factors.

However, there were also some important variances *within* the schools. Therefore, I will examine them from both *inter*-school and *intra*-school perspectives.

## **Inter- and Intra-School Equity**

### **Inter-School Equity**

On the surface, the inequities between Sydney Carton and Charles Darnay seemed merely due to the fact that Sydney Carton was located in the inner-city and Charles Darnay was located in a middle class neighbourhood. While the location of the schools did, in the end, speak volumes about the opportunities for computer networking within them, this was not the only factor that needed to be considered. As mentioned earlier, I discovered another school in the Charles Darnay neighbourhood that was not nearly as advanced in terms of information technology. This was because at that school, no individual or group of people had taken the initiative to make the implementation of such technology a priority. Charles Darnay's technological advances had come about primarily because of the initiative of a few key people.

Prior to this study, Sydney Carton Marisa had an outdated IBM 286 computer at home that she had borrowed from the school. When we started the study in the Portuguese Resource Centre, she brought it in so we could use it. Marisa was also given an Alex Videotex machine to use at home so we could correspond by e-mail. By contrast,



Carol already had a Macintosh multimedia computer at home and was fully hooked up to the Internet.

I asked the following central question of the two teachers:

**\*q.25:** What do you think about the whole equity issue, (i.e. the haves and the have-nots) the fact that inner-city schools with less educated parents sometimes have less equipment and knowledge about computers and the Internet than schools in middle class neighbourhoods where there are more resources and expertise. Do you see this as a problem? If so, what should be done?

**MARISA:** When the allocation of funds to education becomes equally divided among the boards and schools we won't have this big unfair problem.

**CAROL:** Its a challenge, not a problem - we can't stop doing this because we are more fortunate - hopefully support will come.

Marisa's answer to the question reveals her awareness of the educational structures that were creating inequity in the Board and reflects her understanding of the power structures that limited her educational objectives. Carol too, seems to acknowledge that inequity is a problem that exists in the Board, but she qualifies her school's right to be on the Internet by saying, "we can't stop doing this because we are more fortunate".

It is hard to imagine that the Board would ask Charles Darnay to stop doing what it is doing. Its presence on the Internet is not just due to their good fortune, but also to some conscientious leadership. It is plausible that schools like Sydney Carton could have achieved the same results if they had made access to the Internet a priority for their school. It is also conceivable that the issue of access to technology as observed at Sydney Carton and Charles Darnay reflects greater inequities in our society. Whether it was or not, it seemed that Carol was somewhat complacent about the inequities that existed, while Marisa was actively trying to change them.

As mentioned earlier, almost none of the Sydney Carton students had computers at home except for the five who were given Alex Videotex machines to use. In their answers to the following questions, all of the Sydney Carton students indicated that they were at an educational disadvantage by not having access to computers.

**\*Q.6** In some of the wealthier neighbourhoods in Toronto, many of the students have computers at home and are able to go on to the Internet any time they want and find information for school projects, go to libraries, communicate with others by e-mail, etc. Yet in other schools in Toronto, many of the students don't own computers or have the Internet at home. Please tell me what you think about this? Are some students at a disadvantage educationally? If so, in what way? Should anything be done?

**DFR:** Yes, government should give us computers.

**EM:** Yes, the government should give us computers. We should get them free.

**JB:** I think the government should have Alexes for all students who want one for the school.

**JP:** I don't think it's fair that a lot of people have a computer.

**KP:** Yes, government should give us computers.

**LM:** I think they feel really bad because some people got computers and they don't so they don't work on the project. So I think if there are more computers they could get one.

**MP:** What I think should be done is we should give them our computers and let them have it.

**MS:** I think it is not fair for some schools to have computers and others none because some are missing out on what others are getting.

**NC:** It is not really fair because some people have it and some people...

**NM:** I think it's bad because some people really put a lot of effort into the projects and don't get the computers.

**PB:** Well, they can use the computers at school or they can get an Alex. I would like one if I could get it.

**TF:** I think that for those people who do have internets at home deserve it for all their good work and all those people who want an internet have to work at it.

**TR:** I think it is not fair because everybody should have a computer so they can learn with their family.

It is interesting to note that several of the students believed that the government should be taking action to rectify the inequity of access problem.

In contrast to the Sydney Carton students, most of the Charles Darnay students already had computers at home. In the focus groups, some indicated an awareness that they were very fortunate:

RM: Um-I think that um..we have an advantage because we have computers, a library with lots of books, and um..each class usually has one or two computers in class. What I dislike is some people try and hurt the school by putting graffiti on the walls and stuff.

Most also indicated that inequity of access was a problem that needed to be addressed, even if they were not directly affected by it:

DB: I think it's a huge problem because all kids should have the Internet..just because they're kind of poor..and some schools are, it doesn't mean that they shouldn't have the Internet..all schools should have the Internet.

Some students, however, did not feel that children without computers at home were at a disadvantage:

\*DAVID: Now what do you guys think about kids who don't have computers at home? Like what do you think about that? Do you think it's important to have a computer at home these days? Do you think kids who don't are at a disadvantage?

JB: "Well-um-not necessarily. I think it's just if you want a computer or if you still want one....

\* DAVID: How would you get one if you couldn't afford to? Is it important that everybody be able to have one?

JB: Well, not really because you can just use your friend's or the school's.

DAVID: What if all your friends don't have them too? Just use the school's?

JB: Ya. You can save money.

I will now examine the first possible explanatory factor for the inequity of access observed between Sydney Carton and Charles Darnay.

## **Home Language and Culture**

The Sydney Carton parents were mostly first generation Canadians whose first language was Portuguese. In many cases, their English language proficiency was low, to the point that a rudimentary conversation with them over the phone was difficult. Because of their lack of English skills and education, the parents were usually in low level jobs and worked long hours. Consequently, they were not able to dedicate themselves to their children's education. As the Portuguese-Canadian students at Sydney Carton were entering the difficult teenage years, they were supposed to be preparing for high school, but they often had to work nights to help out their parents.

In contrast, most of the Charles Damay parents' first language was English. The school did not even have an ESL program or International Languages instruction. As well, the parents were comfortable approaching the teachers and were heavily involved in their childrens' education.

## **Parents' Level of Education, Occupation and Income**

As mentioned earlier, many of the Sydney Carton parents had a limited formal education in Portugal. The jobs they held in Canada were either in construction, house cleaning, or some other form of blue-collar occupation in which English language proficiency and computer skills were not a major job requirement. The students' answers to the following question reveal this:

**\*Q.24 What do your parents do for a living?**

DFE: My mother and father work in a place for rich people. They clean the place.

DFR: Dad warehouse person. Mom machine operator.

EM: My mom works in cleaning buildings and my dad is a baker. He makes bread.

JB: My mom works at Campbell soup. My dad cleans offices and dentists. I help my dad almost every day.

JP: Work.

KP: My dad cleans. My mom is home.

LM: They work. My mom works in a factory and father works with trucks.

MD: My mother works in a factory and she makes jackets and my dad works in construction.

MLD: My dad works in construction and does not use computers.

MP: My mom works in a factory and my dad works on the roof.

MS: Mechanic- dad cleaner - mom.

NC: They work.

NM: My father is a construction worker and my mother works as a hotel cleaner.

PB: They work.

TF: Work in houses (mom) and my dad in our video store.

TR: Work for cleaning and construction.

The students were also asked about their parents' attitudes toward computers and the Internet. There were several answers ranging from ignorance to apathy, to mild support, to great interest and support:

**\*Q.5 What is your family's attitudes towards computers and the Internet?**

CC: They don't care.

DF: Great.

DFE: My family thinks that computers and the Internet are okay.

DFR: They like it.

EM: My parents don't care. My brother likes to play on it. So do my sisters.

FO: I've never had any type of computer so I don't know.

JB: My family is very interested.

JH: They don't care.

JP: They really like it.

KP: They like working on computers once in a while.

LM: They really don't know anything about computers and the Internet but now they know a little about it.

MD: My parents would like to get a computer for me but they are quite expensive. But they are still going to get me one when I go to high school so I could do homework.

MP: My mom thinks it is a good project and so does my dad.

MS: I haven't discussed it with my family, but I know they would like me to have one.

NC: Well, my parents don't really care about computers.

NM: My family thinks it's good for us because we get to go on a great adventure.

PB: Well, my parents don't really know much about it but my brother uses it a lot. He really likes it.

SC: I don't care.

TF: My family really likes the Internet and likes to help me out with my Projecto work.

TR: My family really likes computer they really want me to know how computer works.

In contrast to the Sydney Carton parents, most of the Charles Darnay parents were employed in white-collar occupations. Many were college or university educated and were required to use computers in some aspect of their job. Charles Darnay Public School seemed to be benefiting from their expertise in the form of volunteerism:

\*Q6: Do you have parent volunteers in your classroom?

CAROL: Yes, two parents have come in and helped organize word processing. We got an automated library in four months because of parents' involvement through (company name).

The Charles Darnay families generally owned computers at home and were able to teach their children how to use them. The patterns of their usage, however, seemed to vary to some extent by gender.

## **Gender**

In the final interview, I asked Marisa and Carol if they had noticed any differences in equity in computing due to gender:

\*Q.23: Did you see any differences in the way girls and boys have approached learning on the Internet?

MARISA: No.

CAROL: Not really.

Despite the fact that Carol states in her interview that she detected no gender bias with the technology, I received the following e-mail from her later in our collaboration which seemed to contradict this:

David, I drew up an Internet Word Search for the gang, so I was able to work with them in two smaller groups. 6 did the puzzle and 6 sat around the terminal and we explored the Charles Darnay Web Site. I am still amazed - the boys are right in there like anything and the girls sit back....  
Carol

As a result of being given an Alex Videotex machine and some guidance, the female students in the secondary study seemed to be as motivated to learn on the Internet as the males. As mentioned earlier, DF became the most interested and knowledgeable about the Internet of any of the participants in the secondary study. It also is interesting to note the gender differences that the students noticed among themselves. In particular, it is worth examining the comments of the Charles Darnay students who, unlike the Sydney Carton students, had regular shared access to computers in their classroom:

\*DAVID: What do you think about the difference between boys and girls using the Internet and computers?

JB: Well, I don't mean to be sexist but in our classroom more boys I find use the computers because...girls...I don't know for some reason they um...I'm sure a lot of girls are just as interested as boys it's just that some of the girls they're too busy playing with blocks....There are a few girls in our class who really want to use it just as well as us but they do these blocks every day. It seems like they're afraid to break it (the computer).

JA: I do (see a difference), but I never get a chance to because all the Grade 3 boys are always on it and there are practically no girls on it.

RR: Well, in our class, we have, we don't really use any disks, we just have games we play, and boys use it more often than girls.

RR: Like girls are sort of softer, like most of the boys in our class they really, really want to get on the computer and like, the girls are a lot softer and they don't really care.

KM: Well, I think they should have at least one time when just girls can go on.

The students' comments appear to support the literature on societal attitudes and gender bias in computing mentioned in the literature review (Christian-Smith, 1991; Dodick, 1994).

Having examined inter-school inequity, I will now discuss intra-school equity for the contexts studied.

### **Intra-School Equity**

From my observations, Sydney Carton had some internal inequities which became evident to me during the course of the study. For example, one teacher at Sydney Carton had a technologically superior classroom because she had invested her own money in computer equipment. Unfortunately, this kind of spending was not possible for other teachers because of their limited incomes.

A second inequity observed occurred as a result of introducing the Alex Videotex machine to five of the Sydney Carton students. There arose a feeling of inequity among some of the students who did not receive them, creating a class of "haves" and "have-nots" within the population studied. The students who had them were proud that they were selected, and the students who did not receive them wanted them badly. The Alex Videotex became a valuable commodity that I was asked for over and over again.

Consider the following remarks from students who did not receive Alexes, but wished they had:

MS: Alexes are computers which you can send e-mail to other people. I wish I had one.

EM: Some of my friends got an Alex. I wanted one but no teachers would give it to me. I did a lot of work on this project.



Charles Darnay did not appear to have as many internal inequities in this area as Sydney Carton. This was partly because the school was located in a middle class neighbourhood and did not seem to face the same economic challenges. It also contained a more homogeneous student population, meaning that it did not have to accommodate a number of different linguistic and cultural backgrounds. However, Charles Darnay teachers did have to serve very active and involved parents whom Louis one described as “demanding but not unrealistic, and very supportive”. With the exception of the gender issue, there seemed to be a general contentment with equity of opportunity and “fairness” at Charles Darnay.

One internal inequity that I thought might be a problem at Charles Darnay was the fact that a few Charles Darnay students did not have computers at home, while most of their classmates did. In this way, these students were differentiated from their peers. Yet, when I asked a girl in a focus group at Charles Darnay how she felt about being the only one of her friends not to have a computer at home, this is how she replied:

\*DAVID: TJ, do you feel left out?

TJ: No.

\*DAVID: Do you feel that if you had it at home it would help you a lot?

TJ: Ya, I might get one. I'd probably play games.

Despite my initial supposition that this student must have felt technologically disadvantaged in relation to her friends, her answer does not seem to suggest that she felt left out in any way.

## **Summary**

In this chapter, I examined the final theme that arose from the data, *equity*. In the final chapter, I attempt to draw some conclusions based on my findings in Chapters 5-9.

# **CHAPTER 10**

## **CONCLUSIONS**

The research problem stated in Chapter 1 was: If not accompanied by a sound pedagogy, the Internet may just be an elaborate new tool that is not educationally relevant to students. Or, if implemented inequitably in schools, it could become a divisive technology that helps to widen the gap between the “haves” and “have-nots” in our society.

In order to address this problem, this study set out to examine two schools’ approaches to computer networking. Specifically, I sought to identify the pedagogy accompanying the technology, and the implications for mainstream and non-mainstream students. This approach was based upon my commitment to the use of appropriate technology within the context of a transformative pedagogy to promote equity of outcomes for all children.

To guide the investigation, the following research questions were posed in Chapter 1:

1. What are the possibilities and constraints for computer networking in schools?
2. How are students, teachers, principals and parents reacting to the new technology?
3. What challenges do educators face in attempting to implement Internet learning activities, policies and programs?
4. What visions of schools and society are implied by the way the technology is being implemented?

5. How are student and teacher identities being negotiated at the intersection of the pedagogy and the technology?

Since these research questions are quite broad in scope, answering them would seem to require that the results of this study be generalized to some wider context. However, the problem in doing this is that only two schools were studied, and the populations studied within each school were limited. Therefore, in this chapter, I answer these research questions for the context of the populations studied within the schools, and for the schools as a whole where there is sufficient evidence. In doing so, I provide a critical analysis of the methodology used and discuss the utility of my findings.

The first research question posed in Chapter 1 was, What are the possibilities and constraints for computer networking in schools?

The possibilities and constraints for computer networking in the primary and secondary studies centred around the issues of *pedagogy* and *equity of access*. I discuss the issue of equity of access first, followed by the issue of pedagogy.

One of the chief constraints observed in the primary study was a lack of *equity of access* to the Internet at school and at home between the inner-city and middle class populations. The differences within the schools themselves is explained by the fact that Sydney Carton and Charles Darnay have built their school identities in different areas: Sydney Carton in International Languages instruction and Charles Darnay on the World Wide Web. These differences are not due to the schools' inner-city and middle class locations alone, since as mentioned earlier, there is another elementary school in the Charles Darnay neighbourhood that was not nearly as technologically advanced.

However, there were stark differences between the Sydney Carton and Charles Darnay populations in terms of access to the Internet at home; most of the Charles Darnay students had computers and the Internet at home, while most of the Sydney Carton students did not. What are the possible reasons for this?

One explanation is the background of the Sydney Carton parents. These inner-city parents had a lack of English language skills, a limited formal education in Portugal, and a lack of familiarity with the Canadian education system. For example, not having strong English language skills was one reason why the Sydney Carton parents did not come to the school and become more involved in their children's education. Because of their cultural background, they had adopted what Marisa called a "teacher knows best" attitude. In contrast, the mainstream, English-speaking parents at Charles Darnay had a good facility with the English language and had gone through the Canadian education system. Hence, they were much more comfortable about becoming involved at the school level and in influencing the direction of their children's education.

The differences between the inner-city and middle class populations were also economic. The Sydney Carton parents' jobs were blue-collar and not highly remunerative. This limited their ability to afford computers. As well, because their jobs did not involve the use of computers, they were not familiar with them and had less incentive to purchase and use them at home. Most were so busy trying to establish themselves in a new country that they had little time to become involved in their children's education. On the other hand, the Charles Darnay parents had white-collar jobs and comfortable incomes. They

also tended to use computers in their jobs, have them at home, and teach their children how to use them.

A hopeful sign that emerged from the secondary study was that some of the inner-city students and parents who were given Alex Videotexes showed that they were capable of using them to learn at home with their families, visit the local library, search for up-to-date information for school projects, obtain pen-pals in other countries, and become more computer literate in general. This evidence strongly suggests that access to basic telecommunications technology offers benefits to inner-city students and parents who are not able to afford computers. The technology need not be state-of-the-art to avail them of powerful tools such as e-mail and textual versions of the World Wide Web. Costs could be kept to a minimum with free Internet providers like the Toronto Free-Net. If more economically disadvantaged students in the inner-city were given machines like the Alex Videotex through corporate donations, the gap between the technological "haves" and "have-nots" could be narrowed significantly.

Although the Alex Videotex improved equity of access for five of the sixteen participants in the secondary study, the rest did not evidence the same benefits due to lack of interest and/or technical support. It is important to emphasize that although the secondary study revealed that state-of-the-art computer equipment was not necessary to undertake computer networking activities at home, the Charles Darnay students who did have access to modern computers and the World Wide Web were, in general, much more motivated to explore the Internet than those with the technologically limited Alex Videotexes.

Therefore, with respect to the issue of equity of access, the weight of the evidence in this study speaks strongly in favour of the conclusion that a) the two populations studied were quite different in terms of their access to the Internet; b) these differences were largely due to the culturally-diverse, inner-city background of the parents on one hand, and the English-speaking, middle class background of the parents on the other; and c) these differences had numerous effects, specifically in the areas of support, interest, and motivation for undertaking computer networking activities.

Another set of possibilities and constraints revolves around the issue of *pedagogy*. The data revealed that neither of the schools in this study were engaged in computer networking activities that incorporated a transformative pedagogical framework. The cross-cultural networking projects undertaken were more progressive in their pedagogical orientation than transformative. While they did involve some of the instructional assumptions that a progressive and transformative pedagogy share such as co-operative learning, they did not incorporate many of the social assumptions that distinguish a transformative pedagogy from a progressive one, such as collaborative critical inquiry (Bigelow et al., 1994) and critical literacy (Freire, 1970).

The possibilities that the projects did present were that students were able to use co-operative learning with a new technology to communicate with peers in other countries and to exchange simple information about their cultures and ways of life. Specifically, Sydney Carton students were able to use the Internet to become more informed about the Portuguese language and their Portuguese heritage. First term students at Charles Darnay were able to explore Japanese culture and way of life, while second term students were

able to write to their peers in Australia and exchange information about their countries, schools, and popular idioms.

In the literature review in Chapter 2, I outlined the possibilities for computer networking by highlighting an inspirational model school (see Appendices E, F, G, and H) in which inner-city students were being empowered. I also cited Cummins and Sayers (1995), who provide examples of schools that are undertaking computer networking projects with a transformative pedagogy (pp. 33-44).

I did not discover similar visions for computer networking at either of the two case schools in this study. At Sydney Carton, information technology was not being given much consideration at the time of my research. At Charles Darnay, although the technology was present, the data revealed that in the rush to embrace it, not enough attention was being paid to the type of pedagogy that was accompanying it. This will be elaborated on in my answer to the fourth research question, but for now I will turn to the second question, which was, How are students, teachers, principals and parents reacting to the new technology?

For the students studied, there were varied responses to the new technology. In general, the students at Charles Darnay were much more positive about using the Internet than were the students at Sydney Carton. At Sydney Carton, we had access to only one 286 machine, so the students had very little opportunity to experience the Internet directly. Most of the students' time was spent writing "cursively" in the classroom for the stages of Projecto. Only a few lucky individuals were given the opportunity to sit at the computer, input the writing, and send e-mail.



At Charles Darnay, the opposite was true. The school had a good computer and fast modem in the library which all the students were encouraged to use. They could earn “web crawler permits” from Carol which permitted them to use the World Wide Web any time the computer was free. As well, although the classrooms were lacking sufficient computers for every student, most of the children had computers at home.

For the teachers in this study, reactions to computer networking seemed to be shaped largely by the educational structures in place at their school and on educator role definitions.

Educational structures at Sydney Carton did not strongly support the implementation of new technology. More emphasis was being placed on multiculturalism and on International Languages instruction than on introducing the Internet. The way Marisa defined her role was as an International Languages instructor who had a strong motivation to engage in a computer networking project with her students because it provided a new way of teaching Portuguese-Canadian students about their heritage,

The structures in place at Charles Darnay were more related to the implementation of information technology. Carol defined her role very much in relation to these structures. For instance, she viewed the Internet as a way of increasing her school’s public profile.

For both educators, there was a common belief in the potential of the Internet. However, for both educators, undertaking computer networking proved to be another time-consuming responsibility in their already busy schedules.

As for the principals, Anita at Sydney Carton was building the identity of the school in the same direction as her predecessor, Raymond. She had a limited interest in increasing

her school's identity in the area of information technology. Although there was a Net Committee, it involved only a couple of teachers and Anita, and met infrequently. At the time of this study, any computer networking in the school was undertaken by individual teachers in their own classrooms. At Charles Darnay, on the other hand, Louis fully endorsed and supported a school-wide initiative on the Internet. He collaborated with the Charles Darnay parents who had provided the school with Internet access and designed the school web page. Louis also supported Carol's attendance at Internet conferences and media events which highlighted the school's involvement on the Internet. He took such an initiative on the Internet in spite of the Toronto Board's policy which encouraged inter-school equity in the implementation of technology.

The parents at the two schools were not interviewed directly as part of this study. However, from the answers given by the students regarding their parents' attitudes towards the computer networking, there appears to be a range of involvement from active support to indifference. The Charles Darnay parents were seemingly more supportive of computer networking, on the whole, than were the inner-city Sydney Carton parents. In the secondary study, two of the inner-city parents who were given Alex Videotexes responded very favourably to them. The third parent did not respond favourably; she expressed a lack of time and lack of familiarity with the technology as reasons for her limited participation.

The third research question was, What challenges do educators face in attempting to implement Internet learning activities, policies and programs?

**In attempting to implement Internet learning activities, policies and programs, the challenges encountered by educators in this study were of five major types:**

- a) economic: although Ontario and Toronto Board policy documents stressed equity of access, this was not close to occurring in either of the schools observed. At the beginning of this study, I even had difficulty finding elementary schools in the Board that were hooked up to the Internet and had sufficient facilities for conducting networking projects;**
- b) lack of reliability of the technology: the inability to find and maintain stable communications with partner schools in foreign countries was a definite challenge. This was something that was beyond our control and made it very difficult for us to plan our weekly activities with the students;**
- c) lack of familiarity with the technology: Marisa, and even Carol, could have benefited from some in-service courses and ongoing technical support. Similarly, in the secondary study, the participants could have used more support for their learning with the Alex Videotexes;**
- d) time and logistics: the teachers at both Sydney Carton and Charles Darnay did not have enough time to learn the new technology and to design and implement Internet learning activities with their students. It took longer than anticipated to find networking partners in the desired country at the age level we were seeking who also had regular access to the Internet. Once partnerships were established, there were unanticipated time lags for translation, and differing school years and holidays;**

e) linguistic and cultural barriers: the individual pedagogical orientation of the educators was the single most important factor in their approaches to our cross-cultural networking projects. Writing in Portuguese proved to be difficult for the Sydney Carton students, but Marisa undertook it because she felt it was worthwhile for them. However, at Charles Darnay, Carol did not feel the same commitment to cross-cultural networking with non-English speaking partners. In the project with Japan, she felt that the time it took for the Japanese teacher to translate student work into English and to respond to her students was not worth the wait. Therefore, in the context of the projects undertaken, there appeared to be some differences between the two educators in terms of willingness and commitment to cross cultural borders (Giroux, 1988).

The fourth research question was, What visions of schools and society are implied by the way the technology is being implemented?

The visions of school and society implied by the way technology was being implemented at Sydney Carton and Charles Darnay may be explained using the theoretical framework for pedagogy outlined by Cummins and Sayers (1995). In the primary study, there was no evidence of consideration being given to the way computer technology was being implemented at either school. Furthermore, there was no evidence that a transformative pedagogy was present in the projects undertaken with either of the populations studied. Computers were not even being used in any significant way at Sydney Carton because the school had not built its identity in this area, preferring instead to focus on its International Languages Program. There was a very recent history of being

proactive in terms of trying to challenge the “underachievement” of students, particularly those of Portuguese background. However, there was nothing being done towards this goal in terms of incorporating information technology. Perhaps the school will become more involved on the Internet in the next three or four years, but this remains uncertain.

Throughout the study, Marisa provided evidence that she had a philosophical commitment to the ideals of a transformative pedagogy. Although Marisa believed in and regularly *stated* the principles of a transformative pedagogy, she *practiced* a progressive pedagogy with her students in Projecto. The data showed that she was severely limited by the fact that she was an International Languages instructor. Because of this, she did not seem to have the power to change educational structures within the school such the Net Committee. This proved to be a huge constraint on what she was able to achieve.

At Charles Darnay Public School, the principal, Carol, and some key parents had purposely chosen to build the school identity with the Internet. They had done this through the creation of a school web page and the pursuit of local media coverage and attendance at Internet conferences. Computer literacy seemed to be an important component of Charles Darnay’s educational “vision”.

Carol both *stated* and *practiced* a progressive pedagogical orientation. The way she defined her role as an educator was shaped by the fact that she was a teacher-librarian whose job it was to organize and facilitate the desired networking objectives of the teachers and parents she served.

For the populations studied at both schools, in the way information technology was being used, there was a progressive pedagogical orientation that was more *individual* in its

vision than *social*. This was due to the teachers' role definitions and the educational structures already in place. As mentioned earlier, however, it is difficult to draw implications for the broader society based on these findings because the set of schools studied was very limited and the populations examined were relatively small.

The fifth and final research question was, How are student and teacher identities being negotiated at the intersection of the pedagogy and the technology?

In Marisa's classroom, there was a clear negotiation of identities taking place between educator and students which pre-existed the introduction of information technology. The pedagogical vision that Marisa expressed and demonstrated was to attempt to make Portuguese-Canadian students first "feel Canadian", and then to bring them in touch with their Portuguese heritage. When the technology was introduced, its role in the negotiation of student identities was not significant, primarily because the majority of students did not have access to the Internet or support for this new type of learning, either at school or home.

The experience of students at Sydney Carton who were given Alex Videotexes did reveal, however, that given the technology, collaboration with their teacher and support from an outside researcher, there were signs of student empowerment. Their ability to go on-line and search for information for school projects, to communicate with their teacher in Portuguese, and to undertake various networking activities had the effect of liberating them from the four walls of schooling.

At Charles Darnay, student identities were being negotiated in an opposite manner; while the students had ample access to the technology both at home and at school, their

teacher did not seem to have a clear pedagogical vision for the technology. Consequently, at the intersection of the pedagogy and the technology, learning was being fashioned after the capabilities of the technology and the requirements of the curriculum rather than by a pre-existing and consistent pedagogy.

Since this study has discussed issues of cultural diversity and empowerment, one might ask if it would have been possible for Carol to adopt a more critical pedagogical approach to teaching her English-speaking, mainstream students. The answer is that she certainly could have. This is because whether mainstream or non-mainstream, all students need some form of empowerment. Even though most of the students in the population studied were of a mainstream background, some of them were less fortunate than others, such as the student who was unique in her focus group because she did not have a computer at home. When students' individual situations were pointed out to Carol, she had the opportunity to address these issues. However, she did not do this. It appeared that she was more concerned with building the school's profile on the Internet and having the students learn how to update the school's web page. Carol's vision for the Internet was not so much concerned with the political or social opportunities for learning, but with students becoming more literate in the technology itself.

A further question that might stem from the Charles Darnay example is, "In attempting to undertake cross-cultural networking projects with the Charles Darnay students, are you not forcing mainstream students to identify with the "underdog" and to be critical of themselves, (or at least become more aware of their own privileges)?" The answer clearly is no. Rather, I would argue, it offers the potential for the students to become more

knowledgeable and critical of the social institutions that affect their lives. For example, if more students were to undertake cross-cultural networking projects with a transformative pedagogical framework, they would become more aware of and understanding of the plight of the “underdog”; they would learn about the cultural, social, and economic factors affecting them. As a result, they would be more critical of discriminatory practices in society, and be in a better position to effect change through their own social action. With the assistance of an educator who was committed to the principles of a transformative pedagogy, they would become better citizens for the culturally-diverse, multiliterate society that they will graduate into. If the acquisition of multiple literacies is truly more important today than ever, as Cazden et al. (1996) claim, then these mainstream students would also be more valuable to future employers due to their increased understanding of the linguistic and cultural differences of the emerging global marketplace.

An anticipated benefit of applying the Negotiating Identities framework to the contexts in this study was that it would allow me to see *both* the micro-interactions between students and teachers, and to envision how macro-relations in the broader society were affecting the educational experiences of the students. In actuality, the strength of employing the Negotiating Identities model was that it permitted me to examine *only* how educators defined their roles in relation to their students. For instance, the framework for pedagogy allowed me to detail their instructional and social assumptions. Using this, I was able to discern whether they stated and practiced a *traditional*, *progressive*, or *transformative* pedagogy. With this information, I was able to determine the extent to which their pedagogy contributed to the empowerment of their students.



The problems with attempting to apply the Negotiating Identities framework to the context of the schools in this study were as follows: a) the data set at each school was limited; therefore b) conclusive statements about power relations in the broader society are not possible based on this limited data set; c) the detailed cultural backgrounds of the students and their cultural and immigration histories were not available to me; d) the populations studied were seen through my subjective lens as a researcher; and e) the Negotiating Identities model was applied to an English-speaking, *mainstream* student population even though it was designed with *non-mainstream* students in mind.

This last point is intriguing, because surely the negotiation of identities is equally important for both mainstream and non-mainstream students alike. Is Cummins' model inappropriate for analyzing the negotiation of identities of mainstream students like the ones at Charles Darnay? The answer is that in this study, it was a bit of a stretch to utilize this model to ascertain if, for example, there was a reinforcement of coercive relations of power occurring in the mainstream student population that would be re-iterated when these students graduate into the broader society. The point here is not the limitation of the theory, but the threat to established social relations that it presents for this school, its parents, and society, if students are taught using a transformative pedagogy. As this study illustrates, there was a reinforcement of a sense of entitlement to the technology at the mainstream school which was created by the parents who helped get the school on-line, supported by the principal, and managed by Carol until her departure in September, 1996.

## **Summary**

A major conclusion to be drawn from this study is that the approaches to computer networking in the two case schools depended largely on the individual pedagogy of the teachers. Their micro-interactions with the students in the classroom proved to be a more significant factor in terms of the negotiation of identities than the level of sophistication of the technology. The potential for the Internet to educate and empower students did not depend on how good the technology was, but on how the teachers chose to use it with their students. Their pedagogical orientation as evidenced in their statements and practices in this study revealed, more than anything else, whether there was the potential for the goal of equity of outcomes for all children to ultimately be achieved.

Perhaps the Ralph Bunche School mentioned in Chapter 2 raises some important questions for schools like Sydney Carton and Charles Darnay to consider. If it is possible for an inner-city school in the United States to have the kind of success Ralph Bunche has, why don't we see more schools like it in Canada? Why isn't there a similar vision for pedagogy and technology at already lauded schools like Sydney Carton and Charles Darnay? Are there more policy restrictions on what an individual school within a board can do? Could individual teachers in a Canadian public school effect this kind of change by taking action in their own classrooms?

Further studies might examine the educational structures and role definitions in place at schools that have demonstrated a visionary approach to computer networking. Various contexts should be examined, such as inner-city, suburban, mainstream, and non-

mainstream settings, to shed light on how each school, in its specific context, has managed to succeed.

Another research study might attempt to expand on the current secondary study by examining the potential of inexpensive telecommunications technology like the Alex Videotex to help empower inner-city students and parents, and help alleviate the problem of inequity of access at school and at home.

In conclusion, it is clear that we now stand at a crossroads where there are different visions before us. Depending on how we view the situation, the new reign of technology is either an opportunity or a threat. While I am optimistic that it is more the former than the latter, we must be vigilant in ensuring that all students are given the chance to participate. If not, we may some day wish that we had paid closer attention to the time-tested message that Dickens leaves us with in A Tale of Two Cities: “Sow the same seed of rapacious license and oppression over again, and it will surely yield the same fruit according to its kind”.

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*Appendix A: Home Language, Sydney Carton, March, 1996*

HOME LANGUAGE	NO. OF STUDENTS	PERCENT
Portuguese	149	33.2
English Only	122	27.2
Chinese	91	20.3
Vietnamese	52	11.6
Somali	7	1.6
Spanish	12	2.7
Arabic	4	0.9
Tamil	3	0.7
Italian	2	0.4
Malay	1	0.2
Farsi	1	0.2
Russian	1	0.2
Norwegian	1	0.2
Panjabi	1	0.2
Polish	1	0.2
Macedonian	1	0.2
TOTAL	449	100.0

Source: (Toronto Board of Education, 1996c)



*Appendix B: Home Language, Charles Darnay, March, 1996*

HOME LANGUAGE	NO. OF STUDENTS	PERCENT
English Only	426	96.8
Chinese	6	1.4
Urdu	1	0.7
French Only	1	0.2
Vietnamese	1	0.2
English & French	1	0.2
Greek	1	0.2
Panjabi	1	0.2
TOTAL	440	100.0

Source: (Toronto Board of Education, 1996b)

### *Appendix C: Societal Attitudes Towards Females and Computers*

The following characterizations of societal attitudes towards females and computers were derived by the author from a review of the academic literature on this topic. What is presented here is a summary of the findings.

<b>SOCIETAL ATTITUDE</b>
1. Computers are associated with mathematics, which many girls feel is a male activity.
2. Computers are considered machines. Girls have less experience than boys with machines, and are more afraid of making mistakes and breaking them.
3. Girls tend to be social learners, and prefer doing things in groups. Computing is viewed as a solitary activity that is preferred by boys.
4. In class, boys aggressively capture computer time, while girls are reluctant to insist on time for themselves.
5. Teenage girls avoid competing with boys on the computer for fear of appearing “unfeminine” or unattractive.
6. Girls prefer human rather than machine rewards for right answers or choices.
7. Parents encourage technical careers for their sons more than for their daughters. They pay for hardware, software, lessons, and computer camps for their sons, and encourage their sons to use computers more than their daughters.
8. Much of the software on the market is too competitive, warlike, and aggressive for girls.
9. Much of the software on the market has stereotypical language and sex roles; the main characters are often identifiably male, and rarely identifiably female.
10. Advertising campaigns for hardware and software often features males.

Source: (Dodick, 1994)

## *Appendix D: Highlights from the Report of the Royal Commission on Learning*

### **Objectives for Implementing Information Technology in Ontario Schools**

- developing teacher knowledge and skills.
- providing appropriate hardware and high-quality software with a Canadian content and perspective.
- linking computers to local and regional networks.

### **The Environment**

- machines should be at the service of humankind and not the reverse.
- teachers should see the technology as an aid and not a burden.
- schools should be provided with adequate computer resources.
- problems of scheduling time on existing computers should be addressed.

### **Possibilities and Concerns**

- information technology is just a tool which must be implemented properly to be effective.
- schools that have been successful at implementing information technology have adopted new approaches to teaching in which the technology is a facilitator.
- the Internet brings new concerns about equity of access, censorship, and social skills decline.

### **Information Technology's Contribution to Learning**

- encourages fundamentally different forms of interaction among students and teachers.
- engages students systematically in higher-order cognitive tasks.
- prompts teachers to question old assumptions about instruction and learning.
- moves classrooms away from didactic teacher-centered instruction to student-centered instruction.
- the self-directed learning that it permits frees up time for teachers to help students who are having difficulty.



## Welcome To Ralph Bunche School

*Harlem, New York, USA*

- ☐ [About Ralph Bunche School](#)
- ☐ [Who was Ralph Bunche](#)
- ☐ [Schools in Community School District Five join the WEB.](#)
  
- ☐ [A Special Valentine for '97](#)
  
- ☐ [May / June '97 Newspaper](#)
- ☐ [February '97 Newspaper](#)
- ☐ [December '96/ January '97 Newspaper](#)
- ☐ [We Can Be Anything: Stories written in January 1997](#)
- ☐ [More Holiday Writing](#)
- ☐ [September '96 Newspaper](#)
  
- ☐ [\*\*Please help us! Takes only a few minutes. Costs you nothing.\*\*](#)
  
- ☐ [\*\*Halloween '96\*\*](#)
  
- ☐ [RBS Graduate Writes about WEB Black History Project](#)
- ☐ [RBS students write to R. L. Stine - He writes back. September '96](#)
- ☐ [Astronaut Mae Jemison Visits RBS - APRIL 24, '96](#)
- ☐ [Former RBS Student Remembers Ron Brown](#)
- ☐ [RBS student Learns of Plane Crash With Ron Brown](#)
- ☐ [A Teacher Remembers Ron Brown](#)
  
- ☐ [Students Speak At Washington Conference](#)
- ☐ [Spring Poems and Drawings Class 4-415](#)
- ☐ [\*\*What's New at Ralph Bunche School\*\*](#)
  
- ☐ [Mundo Hispano](#)
- ☐ [Join the GREAT PENNY TOSS.](#)

- ☐ [Students Help Clean Up Broadway Mall](#)
  - ☐ [Good places to search for information](#)
  - ☐ [Good places to find other student work](#)
  - ☐ [Partners & Supporters Of RBS](#)
  - ☐ [Shadow Project 94](#)
  - ☐ [The Ralph Bunche School Gopher.](#)
  - ☐ [A Section In Our Gopher About Junior High School 43](#)
  - ☐ [Pineapple Project](#)
  - ☐ [Spanish Alphabet Illustrated](#)
  - ☐ [Halloween Drawings & Stories From RBS](#)
  - ☐ [Secretary Of Commerce Visits RBS](#)
  - ☐ [Valentines](#)
- 

## **Ralph Bunche School Produces A monthly Newspaper.**

- ☐ [September '96 Newspaper](#)
  - ☐ [June 1996 Newspaper](#)
  - ☐ [April 1996 Newspaper](#)
  - ☐ [February 1996 Newspaper](#)
  - ☐ [December 1995 Newspaper](#)
  - ☐ [October 1995 Newspaper](#)
  - ☐ [May & June Newspaper](#)
  - ☐ [March & April Newspaper](#)
  - ☐ [January & February Newspaper](#)
  - ☐ [December 1994 Newspaper](#)
  - ☐ [A gopher version of the RBS newspaper.](#)
  - ☐ [Back Issues of The RBS Newspaper](#)
- 

## **Frederick Douglas Academy (FDA)**

FDA will soon have its own internet connection. Here is a preview of work to come from a talented seventh grader, Christopher Glover.

- ☐ [Christopher's Art Work](#)
- 

## **Adam Clayton Powell Jr. Junior High School on The WEB**

- ☐ [Love Poems and Haiku June 96](#)
- ☐ [Poems on Pride - May 95](#)

- ☐ [Science Project on Apple Seeds - May 95](#)
  - ☐ [Students Rule Internet](#)
  - ☐ [The First Edition](#)
  - ☐ [Ask Mark Advice Column](#)
  - ☐ [Mock Trial Team Comes Out On Top!](#)
  - ☐ [Rooks Show what 43 is made of](#)
- 

## **Henry Highland Garnet School for Success on The WEB**

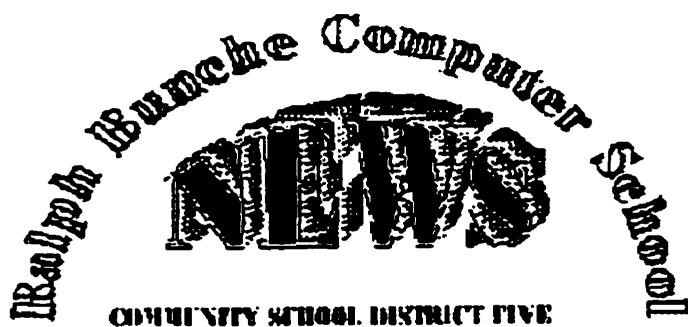
HHG is the fifth Central Harlem (Community School District Five) school to join the WEB. Watch for more to come. June 96

- ☐ [Henry Highland Garnet School](#)
- 

## **Comments, Stats, & Off Site Connections**

- ☐ Web Started on 03/26/93
- ☐ [See people's comments](#) about this server or [make a comment](#) of your own.
- ☐ [Internet Resource Sites Found By Students At RBS](#)

Please Send Your Comments To [Hamidou Diori](#) (Webmaster) or [Paul Reese](#) (Supervising Teacher)



Volume 12, Issue 3  
February / March 1997

Written and Published Several Times a Year by the Students of the Ralph Bunche Computer School

Newspaper Staff  
Return To Homepage  
Friends & Supporters  
**Front Page News**

- ☐ Author of *Computers in the Classroom* Visits School

**Page 2**

- ☐ STUDENTS Celebrate Black History Month

**Page 3**

- ☐ Science Fair Big Success for RBS

**Page 4**

- ☐ Programs and Trips at RBS

**Page 5**

- ☐ PTA Meeting Big Success

## Students of The Ralph Bunche School Celebrate Black History Month

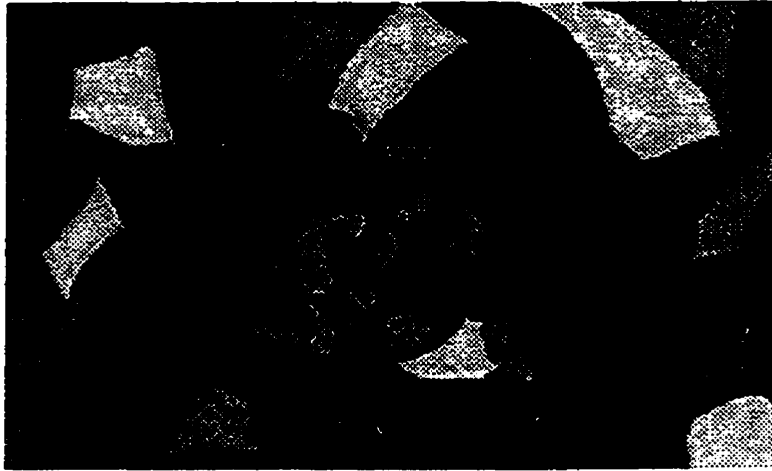
The students of the Ralph Bunche School celebrated Black History Month in February. Each student wrote about a black African American that they admired or that they felt contributed to the freedom of blacks. There are many African American that contributed to the freedom of blacks. A lot of black people stand proud knowing that many famous African Americans fought for their freedom.

Click on the names below to read our articles.

<a href="#"><u>Fredrick Douglass</u></a>	<a href="#"><u>Joe Louis</u></a>	<a href="#"><u>Jackie Robinson</u></a>	<a href="#"><u>Lorraine Hansberry</u></a>
<a href="#"><u>Claude McKay</u></a>	<a href="#"><u>NAACP</u></a>	<a href="#"><u>Jessie Owens</u></a>	<a href="#"><u>Madame C.J. Walker</u></a>
<a href="#"><u>Sojourner Truth</u></a>	<a href="#"><u>Harriet Tubman</u></a>		



# *Mundo Hispano*



drawing by Tikema Arabia Earth-Bey

**Welcome to all who want to explore the Hispanic world through investigation and conversation!**

The students in Miss Stewart's fifth grade class CS 403 at the Ralph Bunche School in Harlem have completed the very first entries for a worldwide collaborative student encyclopedia of Hispanic culture as part of their celebration of Hispanic Heritage Month, September 15 thru October 15.

---

**There are many different things to do at this site...**

- ☐ **Browse our Historias and submit your own**
- ☐ **Learn about Fiestas and tell us what you think**
- ☐ **Learn Spanish expressions and add your own at ¿Como Se Dice?**
- ☐ **Explore WWW links and add your favorites**
- ☐ **Help us to answer Questions about the Hispanic world and yourself**

**Pues, vamanos!**

---

||| Mundo Hispano | Historias | Fiestas | ¿Como Se Dice? |||

||| Explore | Questions |||

||| For Educators and Parents |||

Return to Ralph Bunche School

# ***For Educators and Parents***

## **Welcome!!**

This sight is designed for late elementary and early middle school students as a means of:

- ☐ Generating pride, awareness, and interest in Hispanic culture and the Spanish language
  - ☐ Creating an on-line community of students from around the world who are interested in sharing their writing, their experiences, their opinions, and their questions regarding the Hispanic world
  - ☐ Providing an opportunity for students to build their own multi-perspectival, interdisciplinary Hispanic culture resource through student writing and research, both on- and off-line
  - ☐ Providing a focused opportunity for students to begin exploring the tools of the World Wide Web
- 

The following is a list of site components and the types of student interaction they support:

### **Historias**

- ☐ Read student's writings on various topics in Hispanic culture
- ☐ Submit writing on topics of interest for publication on this site
- ☐ Send reactions to students' writing

### **Fiestas**

- ☐ Learn about Hispanic customs and traditions: current topic is The Day of the Dead/Día de los Muertos
- ☐ Compare student responses to a question
- ☐ Submit a response for publication on this site
- ☐ Submit a topic for future discussion

### **¿Como Se Dice?**

- ☐ Browse a list of students' favorite Spanish expressions
- ☐ Submit an expression for publication on the list

### **Explore**

- ☐ Explore selected Web resources pertaining to the Hispanic world
- ☐ Submit a link to help build the resource list

### **Questions**

- ☐ Answer student questions about Hispanic culture
- ☐ Submit questions about Hispanic culture

---

If you have any suggestions, questions, or concerns please  
send them to us.

Thank You!

---

||| Mundo Hispano | Historias | Fiestas | ¿Como Se Dice? |||

||| Explore | Questions |||

||| For Educators and Parents |||

Return to Ralph Bunche School

*Appendix I: ESL Status, Sydney Carton, March, 1996*

ESL STATUS	NO. OF STUDENTS	PERCENT
ESL	169	37.2
Non-ESL	285	62.8
TOTAL	454	100.0

Source: (Toronto Board of Education, 1996c)

*Appendix J: Region of Birth, Sydney Carton, March, 1996*

REGION OF BIRTH	NO. OF STUDENTS	PERCENT
CANADA	295	65.0
ASIA	76	16.7
EUROPE	41	9.0
C & S AMERICA	15	3.3
CARIBBEAN	12	2.6
AFRICA	9	2.0
MIDDLE EAST	3	0.7
OTHER	3	0.7
TOTAL	454	100.0

Source: (Toronto Board of Education, 1996c)

*Appendix K: ESL Status, Charles Darnay, March, 1996*

ESL STATUS	NO. OF STUDENTS	PERCENT
ESL	6	1.3
Non-ESL	442	98.7
TOTAL	448	100.0

Source: (Toronto Board of Education, 1996c)

*Appendix L: Region of Birth, Charles Darnay, March, 1996*

REGION OF BIRTH	NO. OF STUDENTS	PERCENT
CANADA	413	93.7
ASIA	7	1.6
EUROPE	7	1.6
C & S AMERICA	2	0.5
CARIBBEAN	1	0.2
OTHER	11	2.5
TOTAL	441	100.0

Source: (Toronto Board of Education, 1996b)

### *Appendix M: Letter of Consent*

Dear Parent:

I am an occasional teacher in the Toronto Board of Education and a Ph.D. student at the University of Toronto. I am conducting a study of the potential uses of computer learning networks in the classroom. I am interested in how students of minority background may benefit from learning with students in other countries via the Internet. I would like to include your child in this study.

I will be in the class one day per week, making observations and helping the regular classroom teacher. I will also serve as a resource consultant to the school, giving the principal and teachers advice on how to structure learning with computers. I am not testing the children in any way, but may ask for their opinions and experiences during the course of my stay. Your child's responses will not be identified by name and I will not use any information from the school's records.

The study has been approved by the Toronto Board of Education's Research Review Committee and by --- (principal). The research is important because it will show the different types of learning that may take place on the "information superhighway", which will be a significant educational resource for all students in the future.

If you will allow your child to be included in the study, please complete the form at the bottom of this letter and return it to your child's teacher by ---. If, when questioned, your child is shy or unwilling, he/she will not be made to participate. Should your child wish to withdraw from this study at any time, he/she is free to do so.

I sincerely appreciate your cooperation. If you would like to receive more information about the study, please contact me at 416-944-9061.

Thank you.

David Dodick, B.A., M.S.  
Ph.D. Candidate, University of Toronto

-----  
Child's name \_\_\_\_\_

Birth date \_\_\_\_\_ First language \_\_\_\_\_

#### CHECK HERE

☐ I give permission for my child to participate in the University of Toronto study conducted by David Dodick

☐ I do NOT give permission for my child to participate in the University of Toronto study conducted by David Dodick

Signature of parent/guardian \_\_\_\_\_



*Appendix N: Project Description - 'A Cultural Collage - in Portuguese'*

**Date:**

Project begins March 1, 1996 and ends May 24, 1996.

**Purpose:**

Students will use telecommunications to learn about their counterparts in other countries. They will share information about their daily lives, schools and communities, as well as photographs, original artwork and poetry.

**Subjects:**

This project is best suited for Portuguese classes (in non-Portuguese speaking countries, communications, creative writing, social studies or art classes (in Portuguese-speaking countries).

**Grade level:**

This project is designed for 13 -14 year olds (approximately).

**Summary:**

How similar are teen-agers the whole world over? Do they share similar dreams, hopes, daily routines? This project will let them communicate in a timely manner and actually find out for themselves.

Students will work in cooperative groups of 3 - 5 people, with each group and each person having a counterpart in another country. Portuguese will be the common language, although the final publication of student work might include writings in both Portuguese and English.

There will be a regular timetable of writings and visuals to be shared, culminating in a cross-cultural presentation to the class (or the entire community).

**Number of participants:**

Ideally, we would like to work with five different classes, but will start the project with as many classes as we have as of March 1.

**Project Coordinators:**

David Dodick, Ph.D. Candidate, The University of Toronto, Canada.

Marisa \_\_\_\_\_, International Languages Instructor, Sydney Carton Public School, Toronto, Canada.

e-mail: ddodick@oise.on.ca

**How to register: (Please send the following information:)**

Your name and title:

Your e-mail address:

**Your school:**  
**School address:**

**Grade(s) taught:**  
**Subject(s):**

**Please be as specific as possible about your intention to participate. (Is this a registration, or a request for further information?)**

**Timeline:**

**3/1/96: Indicate firm commitment to participate in project. Establish cooperative groups, teach word processing and telecommunications skills as necessary.**

**3/8/96: "Eu sou assim" (Students e-mail introductory composition)**

**3/22/96: "Esta e' a minha escola e a minha cidade" (Exchange descriptions of school and community, including photos if possible).**

**4/12/96: "Um dia tipico"(Exchange detailed daily schedule).**

**4/26/96: "Nos somos assim"(Exchange student-made databases of their classmates interests, preferences and activities).**

**May, 1996 Make culminating presentations (to class, school, or community). Written reflections on the value and meaning of the experience.**

**5/24/96: Last date to submit original writings or artwork to be included in 'A Cultural Collage - in Portuguese'. Results to be published on the World Wide Web.**

**The project in more detail:**

**1. Your first task will be to determine your level of participation. You can establish one cooperative group of 4-5 students to pair up with one of our cooperative groups, or you can divide an entire class into cooperative groups, in which case we will attempt to link each of your cooperative groups with a group in another city or country.**

**2. Once the cooperative groups are established, you should determine tasks: who will gather information, who will type, who will keep the group on task, etc. Teach word processing and e-mailing skills as necessary.**

**3. "Eu sou assim". A introductory composition. We suggest three paragraphs: name, age, personal description; likes, dislikes, leisure activities; and a brief description of home and family. The composition could be assigned as homework and graded if appropriate, depending on the needs and interests of the teacher. If the students are native speakers of Portuguese who are studying English as a foreign language, it might be more appropriate to have them write this first composition in English and title it "This is What I am Like". Since each cooperative group member writes a composition, we begin to undermine stereotypes. Not all students in the same class in the same school are alike. There will be differences and commonalties - in appearance, in interests, in homes and families.**

4. This might be a good time to have groups share with the rest of the class. If several groups are communicating with several different countries, there is already a wealth of information to begin cross-cultural comparisons. Even one group, gathering such information from their peers in one other country can be the basis of fruitful class discussion, which then generates new questions to ask in the next letter. Certainly additional e-mail is to be encouraged - students do not need to wait for an assigned topic.

5. "Esta e' a minha escola e a minha cidade" is the next assigned composition. This one might be written collaboratively by the group, with only one composition being sent. It should be a description of both your school and town or city, but the specifics may vary. A writing teacher might assign a descriptive or interview format. An art teacher might prefer drawings or photographs. A social studies teacher might require a great deal of historical or geographical data. Also, if the technology is available to you, we suggest students send photographs for this part of the project on a CD Rom disk, but this is not necessary.

6. "Um dia tipico" is intended to be a very detailed daily schedule. It should include not only the activities of that particular day, but also what each student ate, who he or she talked to, a description of the clothes he wore, etc. Once again, native speakers of Portuguese could write to our students in either English or Portuguese, but our students will attempt to write in Portuguese.

7. "Nos somos assim" should not be a composition, but rather a database of as broad a nature as possible. Our class will gather the data that we hope to include. They survey the school body to discover preferences in food, music, brands of clothing, actors, authors, etc. We'll determine specifics with our participating groups as the date approaches, so we can have common data from all the participating countries. It should be very interesting five years from now to have a new class able to research what 14 year-olds from five different countries found useful, valuable and interesting in 1996.

8. Culminating presentations could be presentations to a class, to the school, or to a whole community. An exchange of maps, music, recipes and who knows what else should make the result of three month's worth of cross-cultural sharing very rewarding.

9. We feel it is very important for students to reflect on their experiences. Throughout the project we hope you will encourage your students to create in prose, poetry or any art form expressions of what this experience means to them, as well as their hopes and dreams for a world in which cultural differences are explored and celebrated. As you send us their creations, we will try to compile them into a publication titled "A Cultural Collage - in Portuguese" - and publish it.

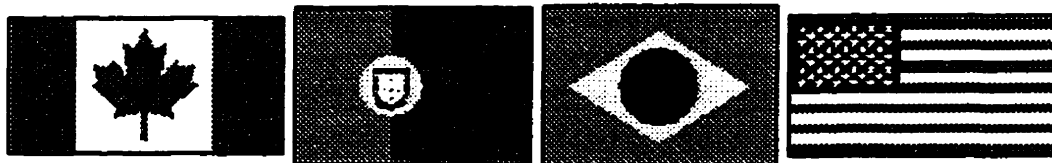
**Welcome \* Bem-Vindo**

to/a

## **A Cultural Collage - in Portuguese Uma Colagem Cultural - em Portugues**

This page describes a cross-cultural networking project that took place from March-May, 1996. It involved students, mostly of Portuguese background, from schools in the following countries:

Esta pagina descreve um projecto realizado entre Marco-Maio de 1996, via e-mail. Envolveu estudantes, a maioria de origem portuguesa, de diversas escolas nos seguintes paises:



[CANADA] \* [PORTUGAL] \* [BRAZIL] \* [UNITED STATES]

---

To see our original posting to the Internet, which fully describes our project, click on [PROJECT](#)  
Encontra a descricao completa do trabalho em referencia ao pressionar [PROJECTO](#)

To see a complete list of the participating schools and the way they were matched, click on [GROUPS](#)  
Encontra a lista completa das escolas participantes bem como a maneira como foram correspondidas ao pressionar [GRUPOS](#)

### **STAGES OF/FASES DO PROJECTO:**

- [STAGE 1/FASE 1 EU SOU ASSIM/THIS IS WHAT I AM LIKE](#)
- [STAGE 2/FASE 2 ESTA E' A MINHA ESCOLA E A MINHA CIDADE/THIS IS MY SCHOOL AND MY CITY](#)
- [STAGE 3/FASE 3 UM DIA TIPICO/A TYPICAL DAY](#)
- [STAGE 4/FASE 4 NOS SOMOS ASSIM/THIS IS WHAT WE LIKE](#)

The coordinators of PROJECTO/Os coordenadores do PROJECTO: [David Dodick](#) and \_\_\_\_\_  
The translator for PROJECTO/A tradutora do PROJECTO: \_\_\_\_\_

Thank you for visiting/Agradecemos a sua visita. You are visitor number/E' o (a) visitante numero

**0683**

*Last modified on June 18, 1996  
Ultima actualizacao: 18 de Junho de 1996*

*Appendix P: Writing Samples from 'A Cultural Collage - in Portuguese'*

**STAGE 1: EU SOU ASSIM**

O meu nome e' Michelle. Eu tenho 13 anos. Tenho cabelo e olhos castanhos. Eu sou pequenina.

Eu gosto de jogar basquetebol e de nadar. Eu tambem gosto de rapazes. Eu nao gosto de fazer a lida da casa. Eu nao gosto de comer tomates, so na pizza. Eu gosto muito de falar ao telefone.

A minha mae Osvalda, o meu pai Ernesto e a minha irma Monica sao a minha familia. Vivemos todos numa casa com o meu gato Felix.

**STAGE 2: MINHA CIDADE E MINHA ESCOLA**

A nossa escola esta situada em Santarem.

Tem cinco pavilhoes: em tres estao as salas de aulas, noutro esta o refeitório e a sala de alunos e noutro esta o Conselho Directivo, o auditorio, a biblioteca e a sala de informatica.

Somos cerca de mil e poucos alunos, cem professores e quarenta funcionarios .

Para alem das salas de aulas, temos alguns locais onde passamos os nossos tempos livres: o campo de jogos, a biblioteca, a sala de informatica, a sala de convivio e o auditorio.

E pena a nossa escola nao ter piscina e ginasio.

Nao gostamos nada de entrar na sala de aula e ver as cadeiras e as mesas escritas. Ha alguns colegas nossos que nao sabem ainda respeitar os outros.

Isto tambem e verdade em relacao aqueles que deitam lixo no patio.

Achamos que e errado fumar na escola mas isso ja tem acontecido.

Na nossa escola existem muitos Clubes em que nos podemos inscrever e ocupar assim os nossos tempos livres em actividades do nosso agrado. Mas gostaríamos que houvesse mais Clubes porque as inscricoes sao limitadas e nem todos os podemos frequentar.

As refeicoes que sao servidas no refeitório da escola sao sempre boas, mas as vezes o cozinheiro «esquece-se» de temperar a salada.

Sentimo-nos bem na nossa escola porque existe bom ambiente entre alunos e professores e e facil fazer amigos!

Para vos falarmos acerca da nossa cidade, resolvemos entrevistar a senhora professora Rosalina Melro que pertence a Associacao de Defesa do Patrimonio de Santarem e que tambem e colaboradora da Imprensa local. Aprendemos bastante com esta conversa.

Santarem esta a candidatar-se a Patrimonio Mundial por ser uma cidade com um centro historico muito antigo, anterior a nacionalidade, onde ha vestigios arqueologicos fenicios, arabes e monumentos muito importantes do Gotico , do Manuelino , do Renascimento, do Manerismo e do Barroco . E essa quantidade e diversidade de monumentos que lhe da um valor excepcional.

Quisemos saber se os cidadaos de Santarem preservam os seus monumentos e se lhes dao o valor que eles merecem. Ficamos a saber que a nossa cidade tem uma Associacao de Estudo e Defesa do Patrimonio de que sao associados os escalabitanos (os naturais de Santarem). Mas o interesse pelo Patrimonio Monumental tem vindo a divulgar-se mais com as discussoes a volta da Candidatura a Patrimonio Mundial. Tambem tem sido muito importante o projecto «A ESCOLA ADOPTA UM MONUMENTO» em que a nossa Escola esta a participar.

Mas nao chega gostar dos monumentos... e preciso que o poder politico (o estado e a autarquia) e tambem o poder economico criem condicoes para que se acabe com essa vergonha de termos ao abandono monumentos tao preciosos com os Conventos de S. Francisco e de Santa Maria de Almoester.

Sobre a origem da cidade de Santarem (Scalabis em latim), existem duas lendas. Uma delas e a de Abidis:

"Outrora existia junto do rio Tejo um reino verdejante e florido. Nas suas florestas havia muitos animais. Os habitantes eram lavradores e cacadores que amavam a Natureza.

O rei Gorgoris recebeu dos deuses o segredo de fazer o mel. Foi Gorgoris quem ensinou esse segredo as abelhas. Por isso era conhecido no seu reino e ate em paises longinquos pela alcunha de Melicola.

Gorgoris tinha uma filha unica, a bela princesa Capipso que adorava passear nas areias doiradas das praias do Tejo.

Certo dia, chegou ao cais de Melicola o navio do grego Ulisses que vinha abastecer-se de comida e agua e, tambem, comprar o famoso mel daquela regioao. O heroi grego desembarcou para falar com o rei, mas encontrou Calipso e logo se apaixonaram e, esquecidos de tudo, ficaram dias e dias gozando as delicias daquele pais de sol e floridos campos e frondosas florestas. Os cacadores viram os namorados e foram contar ao rei Gorgoris.

Furioso, o rei ameaçou de morte o estrangeiro Ulisses porque nao queria que a filha gostasse dele. Ulisses fugiu, as escondidas, numa noite escura. E a pobre princesa ficou abandonada e a espera de, em breve, ter um bebe... A crianca nasceu linda como um anjo. Num braco tinha marcada a vermelho uma flor que a princesa beijou, com muita ternura. "-Abidis, assim te chamaras!".

Gorgoris mandou por o bebe num cesto e lancar o cesto ao rio. O cesto ficou encalhado numa praia do Tejo. Vieram as corcas beber ao rio. Uma aproximou-se do cesto. Puxou-o e deu de mamar a Abidis. O Principe foi criado pelos animais do bosque.

Vinte anos depois, o rei Gorgoris estava a morte. Cheio de desgostos, porque nao tinha nenhum filho, nem nenhum neto para herdar o reino. Os cacadores falaram-lhe de um jovem, belo e forte, que andava com os animais pelas florestas dos montes e dos vales. O rei ordenou que o trouxessem a sua presenca. Armaram-lhe uma ratoeira e apanharam Abidis. Logo que o viu, a pobre Calipso, que estava muito doente, reconheceu-o pelo sinal no braco. Gorgoris pediu perdao a filha e ao neto e fe-lo seu herdeiro.

Abidis governou muitos e muitos anos com justica e sabedoria. Nos montes,

onde foi criado pela corça, mandou construir uma cidade e chamou-lhe Esca Abidis, que significa as delicias de Abidis."

Perguntamos tambem a sr<sup>a</sup> professora Rosalina Melro se se encontram vestigios do passado quando se fazem escavacoes em Santarem. Pois bem, encontram-se quase sempre objectos antigos!

Na igreja da ALCACOVA fizeram-se dois achados importantes:

- um troco da muralha que pertenceu ao palacio do 1º REI DE PORTUGAL .

- a base de um templo romano, que tal como outros achados da epoca romana, ajudam a situar a "scalabis castrum" do tempo do imperador Cesar Augusto.

De todos os monumentos de Santarem, o mais conhecido e a TORRE DAS CABACAS

ou CABACEIRO que e uma especie de emblema da cidade (ex libris) e que tem uma historia muito bonita.

"Conta-se que o rei D. Manuel I (inicio do século XVI) ofereceu a Santarem o dinheiro necessario para se construir uma torre. No cimo desta torre seriam colocados sinos que marcariam as horas: tratava-se, pois, de um relógio para as pessoas da cidade e para as que trabalhavam nos campos vizinhos.

A torre foi construida ao gosto dos edis (vereadores) de Santarem. Quando o rei veio a Santarem ficou muito desiludido: e que ele estava a espera de ver uma construcao muito trabalhada, com motivos maritimos, como era habito fazer nessa epoca (estilo manuelino). Porem, aquilo que ele encontrou foi uma torre de paredes completamente lisas, sem um unico baixo-relevo!

Muito desapontado, mandou colocar oito cabacas junto dos sinos. "Estas cabacas - disse ele - representam as cabecas ocas dos oito edis que mandaram construir uma torre tao feia!"

E claro que isto e uma lenda...

As oito cabacas serviam para aumentar a propagacao do som dos sinos, fazendo-o chegar muito longe, aos campos mais afastados da lezíria..."

Beijinhos para todos!

AS

DC

MA

SN

### **STAGE 3: UM DIA TIPICO**

Hoje e' quarta feira eu istou usando causa jeans preta, com uma blusa de frio.

A primeira clase que eu vou e para o "homeroom" aonde eles marcam se voce esta presente ou ausente. As 8:47 eu vou para a classe de musica. Qundo e' 9:28 eu tenho a classe de Leitura. Depois eu vou para o meu "locker" para pegar o meu livro de matematica. As 10:09 eu tenho que estar na classe de matematica. As 10:50 eu vou para a classe de gramatica. Antes de chegar la' eu paro para conversar com os meus amigos. As 11:31 eu vou para a classe de estudos social. As 12:05 eu vou para a cafeteria para comer o lanche. La' eu sento com as minhas

amigas e os meus amigos. Nos conversamos um com os outros. Depois nos vamos do lado de fora para mais o menos 15 minutos. Algumas pessoas brincam de "football", alguns brincam de "soccer".

Eu sou do lado de fora a conversar com as minhas amigas. As 12:45 eu tenho classe de ciencias eu fico la' ate' as 2:05. As 2:07 e a minha ultima classe para o dia. E' a classe de portugues. As 2:45 nos temos que pegar as nossas coisas e ir para a classe a onde nos esperamos para os onibos. Este e' o meu dia tipico.

#### **STAGE 4: NOS SOMOS ASSIM**

1. Favourite food/ Prato favorito.....Frango Assado com Batatas Fritas
2. Least favourite food / Prato menos favorito .....Peixe
3. Favourite actor / Actor favorito .....Jean-Claude Van Damme
4. Favourite actress / Actriz favorita .....Jodie Foster
5. Favourite author/ Autor favorito.....Eça de Queirós
6. Favourite brand of clothing / Marca de roupa favorita .....Levi's
7. Favourite movie / Filme favorito .....Lendas de Paixão
8. Favourite sport / Desporto favorito..... Futebol
9. Favourite athlete - male / Atleta masculino favorito ..... Joao Pinto
10. Favourite athlete - female / Atleta feminino favorito ..... Rosa Mota
11. Favourite musical group / Conjunto musical favorito ..... Bon Jovi
12. Favourite animal / Animal favorito..... Cao
13. Favourite colour / Cor favorita..... Azul
14. Favourite leisure activity / Passatempo preferido .....Ouvir musica
15. Favourite school subject / Disciplina favorita ..... Educacao Fisica
16. Least favourite school subject / Disciplina que menos gosta ..... Fisica-Quimica
17. Job you want to do when you grow up / Que carreira quer seguir.....Jornalismo
18. Person in the world you would most like to meet / Pessoa no mundo que mais deseja conhecer ..... Dani
19. Place in the world you would most like to visit / Lugar no mundo que mais gostaria de visitar.....Hawai
20. Best thing about your school / A coisa que mais gostas acerca da tua escola.....Amigos
21. Biggest problem in your school / Maior problema na tua escola.....Maus alunos
22. Best thing about your city / Coisa que mais gostas acerca da tua cidade.....Bares
23. Biggest problem in your city / Maior problema na tua cidade .....Droga
24. Best thing about your country / Coisa melhor acerca do teu pais.....Praias
25. Biggest problem in your country / Maior problema no teu pais.....Droga
26. Biggest problem you see in the world today / Qual o maior problema que ves no mundo hoje.....Guerra
27. Social cause/charity you most believe in / Problema social/caso de caridade em que mais acredita.....Unicef



*Appendix Q: Networking Partner Request - Charles Darnay*

**Request from:**

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**Name:** David Dodick  
**E-Mail:** ddodick@oise.on.ca  
**Institution:** Charles Darnay Public School  
**Location:** Toronto, Canada

**Seeking partner:**

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**Partner Type:** class  
**Institution Type:** primary, Grades 3-4  
**Culture:** Japan  
**Language:** English  
**Time Frame:** November-1995 - May-1996

**Other Comments:**

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We are a group of 3/4th graders in Toronto, Canada, looking for an Intercultural Exchange. This is the first time that we have been involved with telecommunications as a tool for learning so we are very excited about it.

We are attempting to do cross-cultural learning using cooperative learning techniques. This will involve at first having the students introduce themselves to each other using e-mail. We will then begin some joint investigations of our school, community, family, and way of life. We will look at current social issues and may even attempt a joint publication. The details for these investigations can come initially from us. However, in time, new and interesting ways of learning will hopefully emerge from our collaboration.

*Appendix R: Writing Samples from Japan Project*

**From: Japan**

**To: Charles Darnay**

How do you do? I'm RN. I'm a fourth grade teacher. I have 40 students who 9 and 10 years old. We live in Kagoshima city that is located in southernmost part of Japan. The climate is warm. And we have an active volcano whose name is Sakurajima. When it exploded, ask fall from the sky. But not often. Kagoshima is full of nature and beautiful. We hope you come to see here some day. By the way, recently students studied sister city in social studies and learned that they could make friends with foreign students. We are very interested in exchanging letters with foreign friends. And we hope that we make friends with foreigners and we want to learn of another country. So we are looking for a school which can communicate with us. Would you mind if we exchange letters each other?

From students:

Hello! Now we are practicing dancing because we will show our dance at a cultural festival that will be held on November 9. We enjoy dancing everyday. We are very cheerful. And we want you to tell us about you and your country and children games and so on. Anyway we are looking forward to your letter.

RN (K. elementary school in Japan)

P.S.

I can manage to understand English letters but I an not good at expressing myself in English. So you sometimes find rude wording in my letter.

Please excuse my rude and wrong wording.

Dear Mr. David Dodick.

How do you do, Mr.Dodick? We are very happy because we can start class-to-class communication. Thank you very much. Our communications is sure to be interesting one. As soon as we read your letter, we looked up your town on the map. We could find lake Ontario. We were very excited. We thought that we wanted to look the beautiful lake. By the way, it is said that you can communicate every week. That's good idea. But I am poor at writing letters in English. (I can managed to understand your letters) So sometimes I'm afraid of lating my answer.

Because I need a lot of time. But I try to do every week. And as is often the case with me, my letters is wrong grammatically. So I hope you try to understand.

**From students:**

**Hello! We were glad at the news about a sister school. Our class consists of 21 boys and 19 girls. We are very cheerful and mischievous. So Miss N. scold us. Sometimes she is strict and sometimes she is gentle. We had holidays (Dec 23 - Jan 7). We finished the homework earlier, and to our heart's content, we played. Anyway we are looking forward to your letter.**

**Good-bye (Sayonara)**

**Dear Charles Darnay students,**

**How are you, everyone? We're very fine. It is very cold everyday, but we play out of doors, lively. And so we don't catch a cold and fine. At the beginning of fourth grade, we fought and quarreled each other, sometimes. but now we are friends with each other. So I like our class very much. I wish you a Happy New Year.**

**M.**

**How are you, everyone? We are fine. I have questions. Do you have school uniforms? We have them. We put navy blue Jacket on and boys put on breeches, girls put on skirts. But we don't have to put on everyday. And another question, what is your favorite play? Our play are dodgeball and hide-and-seek and so on, in our school. I want to know your play.**

**S.**

**From: Charles Darnay**

**To: Japan**

**Dear friends, Hello. We hope everyone is fine. It is really cold here today, with snow on the ground. Here are some of our favorite games. We made a long list then we chose our favorite outdoor games. Soccer - soccer is a game where you kick a soccer ball around and try to score on the other teams net. Usually 6 people play on each team, and the others sit on the bench.**

**Baseball - You probably know how to play this game, so we won't tell you how to play.**

**Dodgeball - It is played with a sponge ball. You have two teams and if a person gets hit by the ball they go behind the other team and try to catch the ball.**

**Tag - Tag is a game where you try and catch someone and then the person who gets caught is the catcher who catches everyone.**

**Cops and Robbers - you split up into two teams. One of the teams are called cops and the others are called Robbers. The cops chase the robbers. It is sort of like tag in teams.**

We hope you have a really good February. Send us a list of your favorite games please.

Good-bye from Room 203 at Charles Darnay

**From: Japan**  
**To: Charles Darnay**

Dear David and Carol,  
How are you? Recently influenza is raging in our school. A few days ago 8 students were absent in my class. But now nobody is absent. Of course I am very fine. Please take good care of yourself. By the way, we received your e-mail the other day. We will answer your question next time.  
From R. (f)

We live in Kagoshima city, you know. We have very little time to see snow. I guess you can see a lot of snow. And Japanese summer is very hot. We are all of a sweat. How about you in summer?  
From R. (m)

We are looking forward to your e-mail about your favorite plays. We play dogeball and tag. And I have a question. Do you know shuuji that is calligraphy? We practice how to write beautiful letters by a writing brush. Do you have such a lesson?  
From T. (m)

**From: Charles Darnay**  
**To: Japan**

Dear RN,  
I hope you do not get sick with influenza. Many of the younger children in our school have chicken pox right now. The teachers are very tired. They are busy writing report cards for the students and each report card is 4 pages long. They also have to meet with each parent for an interview about the student. David and I would like to plan a project that our students could work on, and maybe your students could do the same thing. We could write about it on our WEB site, when we are done. Today the students said they would like to find out about their family history. They are going to ask their parents and grandparents where they lived when they were 8 or 9 years old. Maybe we could find out information about our neighborhoods too. Is there something you would like to do with your students? Do you have any ideas for a project we could all work on together? I only wish I knew Japanese so you didn't have to do all the translations. The children will be writing soon. Good bye for now.

**From: Japan**  
**To: Charles Darnay**

Dear David and Carol,

Thank you very much for your e-mail. But my answer is slow in writing. I am so sorry. But every time I receive your mails, I translate them for students at once. And they happy to read them.

By the way, we unusually could see snow yesterday. So students made merry. Recently it is very cold in my city. But all of us are very fine.

Today we will answer some of your questions.

Q. about homework

A. we have homework every day. For example, practice of kanji (Japanese), drill of calculation and diary and so on.

And tests are done about once a month.

Q. about holidays

A. every Sunday, 2nd and 4th Saturday

Summer holidays: from 21 July to 31 August

Christmas holidays: from 25 December to 7 January

Spring: from 25 March to 5 April

Q. about classroom

A. We have desks.

The size of classroom 880 by 530 centimeters, that is about an area of 51 square meters.

Q. number of students

A. about 1200

Q. about clean

A. students and teachers clean the classroom, schoolgrounds, rest rooms and so on. We have a time to clean for 15 minutes

Q. about subjects

A. Japanese, arithmetic, science, social studies, music, drawing and manual arts, physical education, calligraphy, club etc.

Q. about recess

A. We have a break in the morning for 15 minutes and after lunch for 45 minutes.

Q. about English

A. We start learning English when we are junior high school students, that is 13 years old.

*Appendix S: Writing Samples from Australia Project*

**From: Charles Darnay**  
**To: Australia**

Dear friends,

We are 14 students at Charles Darnay Public School students in Grades 3/4. Our school is in Toronto, the capital city of Ontario. You might have heard of the CN tower. There are about 450 kids in our school. There are 30 in our class all together, but we are just writing to you now. The other group wrote to a school in Japan.

The teachers at our school are very nice. Our principal's name is \_\_\_\_\_ and \_\_\_\_\_ is our vice-principal. Mrs. \_\_\_\_\_ is our classroom teacher but we are working in the Library with \_\_\_\_\_ on this project.

Somedays it feels like winter outside, but its suppose to be spring now. We like to play tag, baseball, soccer, gymnastics, basketball, dodgeball, football and hi-jump, swimming (inside), racing and throwing snowballs (but not at school).

At school we work at social studies projects, outer space, math, writing, reading, cursive writing. Everybody from Grade 4 goes to French for 40 minutes a day.

We have some questions for you.

Where in Australia do you live?

Does it get cold or snow there?

What do you like to eat?

What's your day like in school?

What time do you go home?

Do you have spring break and summer holidays?

Do you eat junk food?

Please write back to us.

We would like to hear all about your class.

**From: Charles Darnay**  
**To: Australia**

This is the other group sending you a message. Could you send us some of the Australian words you use and we will try and figure them out? Do you eat "fries" (do you know what those are?) Do you eat "hot dogs" Our school has individual classrooms, except for two large rooms where the middle wall has been knocked down. Maybe that is like your open plan. How many children are in your classroom? We have 31 in ours. Sometimes it is really crowded. We raise money for our school by selling muffins one day a month, and sometimes we have pizza lunches. Do you have pizza lunches? Write back soon, Your friends in Canada

**From: Australia**  
**To: Charles Darnay**

Dear friends,

My name is T. and I'm ten years old. I'm the only one writing to you because Ms B. thinks I'm capable to do it by myself.

We have about three hundred and sixty-four students in our school. We have an open plan school. There are two classes in each classroom. In our classroom we have children from years 3 to year 6. It is cool to have older friends. We like it. This is our first year of doing this. Last year we only had 2 grades in a class. My teacher is Ms B. and Mr W.

We go to school from 9:00 - 3:00 p.m. on a Monday to Friday.

Most people watch TV when they get home from school but I play with my friends.

The movies we like are Clueless and Casper and TLC and Boyz II Men.

The teachers at our school are all right but some times they can be really annoying. I will try and tell you some of the teachers: Ms B, Mr W,...I will tell you the principal and the vice-principal the principal is Ms. C. the vice-principal is Mr. H.

We like all sports at this school.

I will answer your questions now.

(1) The A.C.T

The ACT is located within the state of New South Wales. It is on the eastern side of Australia, kinda south.

(2) It gets very cold but hardly ever snows. Maybe once every few years. The snow fields are about 3 hours drive from here.

(3) Fruits and juices and coke.

(4) We can do lots of things in Canberra. We can go the science and technology centre or to the aquarium or to the parliament house or to the art gallery

There are kangaroos here, wombats, wallabies, birds like cockatoos, pigs, echidnas (sometimes).

We eat lots of things. We like sangers on the bbq.

We plays lots of different sports. Netball, basketball, football - rugby league, Australian rules and rugby union, hockey, little athletics.

Our favourite team is the Canberra Raiders. They have the colour lime green. They play rugby league and are really cool.

Boys play football (but not tackle) at lunch time and on the weekends

sometimes.

We used to learn Spanish but we don't this year 'cause our Spanish teacher left.

We were happy to answer your questions!!!

From T.P.

**From: Australia**

**To: Charles Darnay**

Here are some great Aussie words for you all:

What is a bikky?

What is a sanger?

What is a banger?

What is a whinger?

Have fun.

**From: Charles Darnay**

**To: Australia**

Sorry we took so long to get back to you but we have been really busy. To answer your questions, we think:

a bikky is a cookie or biscuit

a sanger is a sandwich

a banger is a mallet or spicy food

a whinger is a hot dog, kite or windmill (that one really confused us)

We are busy looking up facts about those animals you listed.

Do you know what a:

toonie is?

or what in-line skates are?

or what a loon is?

or what RCMP means?

How many TV channels do you get? What shows do you watch? Do you play video games?

Do you read Goosebumps?

Write back soon. Your friends from 203.



*Appendix T: Questions that Guided the Preliminary Interviews with the Principals*

- \*Q1. What is the size of your school?
- \*Q2. What is the ethnic make-up of the school population?
- \*Q3. What is the make-up of the school in terms of first languages spoken?
- \*Q4. What are the ethnic backgrounds of the teachers on your staff?
- \*Q5. What are their first languages?
- \*Q6. What types of problems with technology does your school currently face?
- \*Q7. What other types of problems does your school currently face?
- \*Q8. Have any of your teachers been involved in computer networking in the past?
- \*Q9. Have any of your teachers been involved in cultural exchanges in the past?
- \*Q10. What computing facilities do you currently have and are you planning for?
- \*Q11. Have teachers expressed any concerns to you about using computers in their classrooms?
- \*Q12. What feedback have you had from parents about computers in the classroom?
- \*Q13. Do you have any multicultural education or anti-racist education programs in the school?
- \*Q14. What sort of changes do you envision at your school within the next few years?
- \*Q15. How would you define the "community" surrounding your school?
- \*Q16. What interaction is there between the school and the community?
- \*Q17. Does parent volunteering take place in your school? If so, what type?
- \*Q18. What do you consider some of your school's proudest accomplishments?

*Appendix U: Questions that Guided the Preliminary Interviews with the Teachers*

- \*q1. How long have you been a teacher at this school?
- \*q2. What grades have you taught? Do you teach?
- \*q3. What is your education and teacher training?
- \*q4. Describe the ethnic make-up of your class?
- \*q5. Describe the linguistic backgrounds of the students in your class.  
(What are the advantages of teaching an (ethnic or linguistic) minority class?  
What are the disadvantages of teaching an (ethnic or linguistic) minority class?)
- \*q6. Do you have parent volunteers in your classroom?
- \*q7. What type of learning do you have that brings students in contact with the community?
- \*q8. To what extent do you use cooperative learning techniques? Can you give examples?
- \*q9. Are there learning activities that you have found particularly useful in building problem solving, creative writing, or critical thinking skills?
- \*q10. How much do you currently use computers in your classroom?
- \*q11. Do you have a computer at home? If so, what kind? What do you use it for?
- \*q12. What is your level of comfort with using computers in the classroom?
- \*q13. Have you had any ideas about how computers might best be utilized in teaching your students?
- \*q14. Have you ever participated in a sister class initiative in which your class exchanged materials with a class in another city or country?
- \*q15. What sorts of teaching activities would you like to take place in such an exchange?
- \*q16. Are there special issues that you feel your students would benefit from examining with students in another country?

*Appendix V: Questions that Guided the Final Interviews with the Teachers*

- \*q.1: What networking projects did you undertake this year?**
- \*q.2: What did you like best about them? Why?**
- \*q.3: What did you like the least about them? Why?**
- \*q.4: What barriers/challenges have you had in implementing Internet learning in your school?**
- \*q.5: What barriers/challenges have you had in undertaking networking projects with your students?**
- \*q.6: Could any of these difficulties have been avoided? If so, how?**
- \*q.7: What type of networking projects do you feel are the most educationally worthwhile? Why?**
- \*q.8: When you embark on networking projects in the future, what things will you make a priority? Why?**
- \*q.9: What do you think networking has done for your students?**
- \*q.10: Have your personal views on education changed since you started working on the Internet? If so, how?**
- \*q.11: As a result of using the Internet and technology, have you seen the attitudes/identities of a) students, b) teachers, c) parents, or d) the principal change at all? If so, how?**
- \*q.12: Do you think having the Internet has changed your school's identity in any way? If so, how?**
- \*q.13: Have you noticed any differences in the school "climate"? If so, can you give any examples?**
- \*q.14: In your school, what have you noticed in terms of teacher support of the implementation of technology? Any examples?**
- \*q.15: What have you noticed in your school as far as teacher resistance to the implementation of technology? Any examples?**
- \*q.16: What have you noticed in your school in terms of student support of the implementation of technology? Any examples?**
- \*q.17: What have you noticed in your school in terms of student resistance to the implementation of technology? Any examples?**
- \*q.18: Have you seen any literacy (reading/writing) benefits for students from networking on the Internet?**
- \*q.19: How important do you think "computer literacy" is for students and teachers today? (i.e. compare it to the "old" ways of learning i.e. handwriting and textbook literacy.)**
- \*q.20: Have you seen any motivational benefits for students from working on the Internet?**
- \*q.21: What level of technological sophistication do you think is necessary to realize the pedagogical benefits of computer networking?**
- \*q.22: What do you think about doing networking projects with students who speak a language other than English?**
- \*q.23: Did you see any differences in the way girls and boys have approached learning on the Internet?**

**\*q.24: How do you think students should be evaluated and assessed when they work on the Internet?**

**\*q.25: What do you think about the whole equity issue,(i.e.the haves and the have-nots) the fact that inner-city schools with less educated parents sometimes have less equipment and knowledge about computers and the Internet than schools in middle class neighbourhoods where there are more resources and expertise. Do you see this as a problem? If so, what should be done?**

**\*q.26: What future plans do you have for networking in your school?**

**\*q.27: Any additional comments you'd like to make?**

*Appendix W: Questions that Guided the Interviews with the Sydney Carton Students*

- \*Q.1 What do you like about your school?
- \*Q.2 What do you dislike about your school?
- \*Q.3 What is the "Internet"?
- \*Q.4 Has your understanding of the Internet changed since you were introduced to it? If so, how?
- \*Q.5 What is your family's attitudes towards computers and the Internet?
- \*Q.6 In some of the wealthier neighbourhoods in Toronto, many of the students have computers at home and are able to go on to the Internet any time they want i.e. find information for school projects, go to libraries, communicate with others by e-mail, etc. Yet in other schools in Toronto, many of the students don't own computers or have the Internet at home. Please tell me what you think about this? Are some students at a disadvantage educationally? If so, in what way? Should anything be done?
- \*Q.7 What did you learn from PROJECTO?
- \*Q.8 What did you like about it?
- \*Q.9 What did you dislike about it?
- \*Q.10 Do you think it is important to learn about different cultures? languages? Why or Why not?
- \*Q.11 Was the fact that we communicated in Portuguese on PROJECTO a good or a bad thing? Why?
- \*Q.12 Did PROJECTO help you to read and write any better in Portuguese?
- \*Q.13 In PROJECTO, you learned about Portugal by communicating with other students your age by using e-mail. This is a new and different way of learning compared to learning about Portugal by reading a textbook or having your teacher tell you what it's like. What do you think about this "new" way of learning compared to the more traditional way of learning?
- \*Q.14 What do you think about the fact that your writing for "Eu Sou Assim" and the other stages of PROJECTO are being read by many people in PROJECTO around the world? (Normally, you would just write a composition for your teacher and he or she would grade it and give it back to you.)
- \*Q.15 Did you like working in cooperative groups?
- \*Q.16 Would you like to have had more class time to work on the Internet?
- \*Q.17 Who helped you to learn about the Internet this year?
- \*Q.18 What did he or she do well to teach you?
- \*Q.19 What could he or she have done differently?
- \*Q.20 Do you think that the Internet motivates you to read and write more? Why/Why not?
- \*Q.21 Do you think that the Internet should be used more to tell people about yourself or to find out more about others?
- \*Q.22 What types of projects would you like to do in the future on the Internet?
- \*Q.23 How do you identify yourself: a) Canadian b) Portuguese c) other (please specify)\_\_\_\_\_

**\*Q.24 What do your parents do for a living?**

**\*Q.25 Do you have a computer at home?**

**IF SO:**

**a) Who uses it?**

**b) What do they use it for?**

**c) Do you have the Internet at home?**

**IF NOT:**

**a) Would you like to have a computer at home?**

**b) If you did, what would you use it for?**

*Appendix X: Questions that Guided the Focus Groups with the Charles Darnay Students*

1. What do you like about your school?
  2. What do you dislike about your school?
  3. What is the "Internet"?
  4. Has your understanding of the Internet changed since you were introduced to it? If so, how?
  5. What is your family's attitudes towards computers and the Internet?
  6. In some of the wealthier neighbourhoods in Toronto, many of the students have computers at home and are able to go on to the Internet any time they want and find information for school projects, go to libraries, communicate with others by e-mail, etc. Yet in other schools in Toronto, many of the students don't own computers or have the Internet at home. Please tell me what you think about this? Are some students at a disadvantage educationally? If so, in what way? Should anything be done?
  7. What did you learn from the cross-cultural networking you did?
  8. What did you like about it? What did you dislike about it?
  9. Do you think it is important to learn about different cultures? languages? Why or Why not?
  10. Was the fact that we communicated with Japanese speaking students a good or a bad thing? Why?
  11. In the project, you learned about Japan/Australia by communicating with other students your age by using e-mail. This is a new and different way of learning compared to learning about Japan/Australia by reading a textbook or having your teacher tell you what it's like. What do you think about this "new" way of learning compared to the more traditional way of learning?
  12. What do you think about the fact that on the Internet, your writing can be read by many people around the world? (Normally, you would just write a composition for your teacher and he or she would grade it and give it back to you.)
  13. Did you like working in cooperative groups?
  14. Would you like to have had more class time to work on the Internet?
  15. Who helped you to learn about the Internet this year?
  16. What did he or she do well to teach you?
  17. What could he or she have done differently?
  18. Do you think that the Internet motivates you to read and write more? Why/Why not?
  19. Do you think that the Internet should be used more to tell people about yourself or to find out more about others?
  20. What types of projects would you like to do in the future on the Internet?
  21. What do your parents do for a living?
  22. Do you have a computer at home?
- IF SO:
- Who uses it?
- What do they use it for?
- Do you have the Internet at home?

**IF NOT:**

**Would you like to have a computer at home?**

**If you did, what would you use it for?**



*Appendix Y: Alex Videotex Agreement*

Dear Parent:

I am a Ph.D. student at the University of Toronto and an occasional teacher in the Toronto Board of Education. I am conducting a study of the potential uses of the Internet in educational settings. As part of my study, I would like to know how basic Internet technology can be used by students, parents and teachers at home.

I have acquired several Alex Videotex machines for my research. They have a telephone, a keyboard, a monitor and a modem. I would like to loan you one of these machines for the remainder of the 1995-1996 school year if you will agree to partake in my study. If your participation is sufficient, there is also the possibility of keeping the machine at the end of the study.

I will need to meet with you once a month or talk with you on the phone about your use of Alex. In addition, you will be required to keep a detailed journal of your usage of Alex (i.e. date/service called/what you did/time spent) and possibly exchange e-mail messages with me should you obtain an e-mail account.

The study has been approved by the Toronto Board of Education's Research Review Committee and by the Principal of \_\_\_\_\_ Public School.

I would sincerely appreciate your cooperation. You may contact me at 416-944-9061.

Thank you.

David Dodick, B.A., M.S.  
Ph.D. Candidate, University of Toronto

-----  
Parent's name \_\_\_\_\_ Phone # \_\_\_\_\_

Birth date \_\_\_\_\_ First language \_\_\_\_\_

Child's name \_\_\_\_\_

Grade \_\_\_\_\_

Teacher's name \_\_\_\_\_ Phone # \_\_\_\_\_

Birth date \_\_\_\_\_ First language \_\_\_\_\_

**CHECK HERE**

☐ I agree to participate in the University of Toronto study conducted by David Dodick

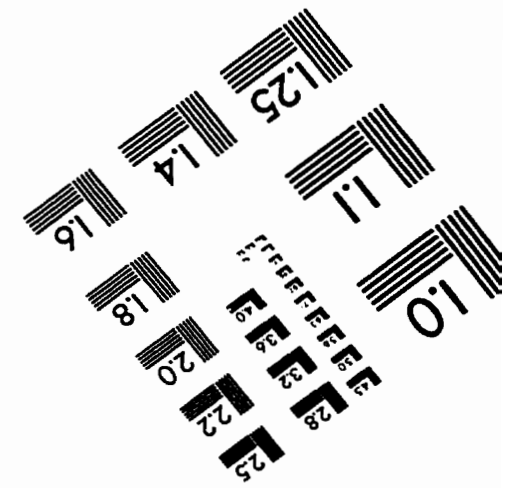
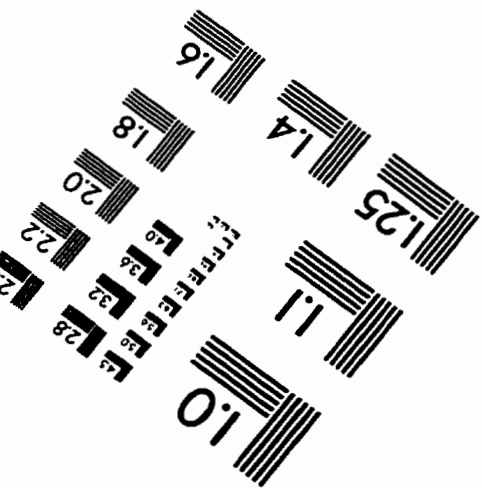
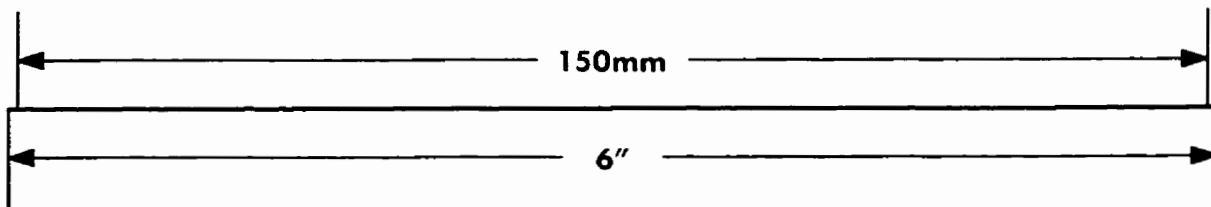
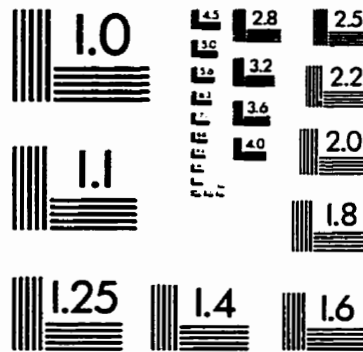
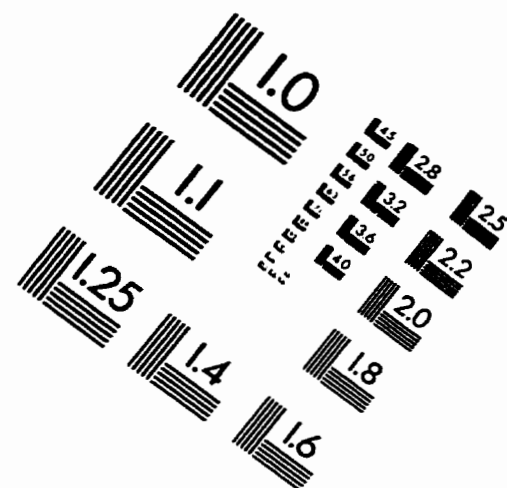
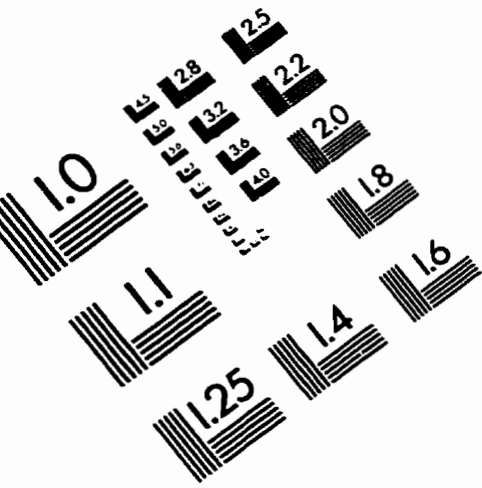
Signature of participant \_\_\_\_\_

*Appendix Z: Alex Journal*

<b>ALEX JOURNAL</b>	<b>Date:</b> <b>Person using Alex:</b> <b>Time spent on Alex:</b>
<b>What did you do with your Alex today?</b>	
<b>What did you like about the experience?</b>	
<b>What did you dislike about the experience?</b>	
<b>What did you learn?</b>	

<b>What do you want to find out more about?</b>
<b>How are you going to do this?</b>
<b>Additional comments about learning on the Internet.</b>

# IMAGE EVALUATION TEST TARGET (QA-3)



APPLIED IMAGE, Inc.  
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