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THE INFLUENCE OF ELECTRONIC MAIL ON COMMUNICATION PATTERNS AMONG EDUCATORS

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A thesis submitted to the Department of Integrated Studies in Education in partial fulfillment of the requirements of the degree of Master of Arts in Educational Leadership

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Your file Votre référence
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ABSTRACT

In the late 1990s, the Ministère de l'Éducation du Québec (MEQ) undertook a reform program that would reframe the educational system. Technology and pedagogy were seen as needing realignment to better meet a student-centered, technology-driven, lifelong learning experience. The *New Reform* as this new framework is known will be fully implemented by 2008 and educators are its pivotal agents. With Information and Communications Technologies being central to the new reform, this qualitative study looks at educator use of the most widely used Internet application, electronic mail. Very little research has looked at how pervasive electronic mail has become among educators and how it is affecting their multidirectional, multilayered roles as educators. Data originate from respondent electronic mail, a literature review, and the author's personal experience. Outcomes, reached through inductive analysis, reveal that educators continue to experience difficulty manipulating electronic mail technology even though they appreciate its multiple advantages. How electronic mail can facilitate networked communication and educator teamwork to better translate the MEQ's new reform successfully is the focus of this study. Implications derived from the outcomes are discussed in view of enhancing ongoing contributions by Quebec educators.

RÉSUMÉ

Vers la fin des années 1990, le ministère de l'Éducation du Québec (MEQ) a entrepris un programme de réforme qui avait pour but de restructurer le système d'éducation. La technologie et la pédagogie furent réalignées afin de favoriser une expérience centrée sur l'étudiant, la technologie, et l'apprentissage continu. La réalisation complète de cette *Nouvelle Réforme* est prévue pour l'an 2008 et les éducateurs en sont les principaux agents. Les technologies de l'information et des communications étant au centre de la nouvelle réforme, nous avons jugé nécessaire de mener cette étude qualitative afin de regarder l'utilisation faite par les éducateurs. Très peu d'étude ont mesuré l'import du courrier électronique sur les rôles multidirectionnels et multistratifiés des éducateurs. Les données proviennent des courriers électroniques des participants, d'une revue de littérature et de l'expérience personnelle de l'auteur. Les résultats obtenus grâce à une analyse inductive, montrent que les éducateurs ont encore de la difficulté à manipuler cette technologie malgré qu'ils en reconnaissent les avantages multiples. Comment le courrier électronique peut faciliter la 'communication de reseau' et le travail d'équipe des éducateurs pour mieux appliquer la nouvelle réforme du MEQ est la question de cette étude. Les implications de cette recherche ont pour but d'améliorer la contribution continue des éducateurs au Québec.

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Thank you to those who taught me well. They were generous with their knowledge and directed my inquiries. While at McGill I learned to be a more effective team player.

Thanks to my peers – learning was made richer by our exchanges.

Sincere gratitude to the sixty participants who believed in my project and offered their insights through electronic mailings. Their data gave direction to my inquiry process.

Thank you to my thesis supervisor, Dr. Christopher Milligan. His belief in my project validated my enthusiasm. His support and guidance were invaluable. His caring attitude contributed to the quality of my thesis experience.

Merci beaucoup to family and friends who believed in me and were supportive in unique and wonderful ways.

This thesis is dedicated to my parents,

James McLaughlin and Clotilde Baudouin

whose hurrahs can be heard from a distance

I am not an Athenian nor am I a Greek,

I am a citizen of the world.

Socrates

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CHAPTER 1: INTRODUCTION

1.1 Introductory Statement

Technology makes the world a new place.
(Zuboff, 1988, p. 388)

How we see the world is transformed when our mode of transferring information changes. Gutenberg's printing press, Morse's telegraph, Bell's telephone, and Tomlinson's electronic mail have all contributed to redefining how we communicate and in so doing, have reconfigured the world. The concept of global interconnectedness is centuries old, however, the notion of the *global village* originated with Marshall McLuhan who understood as early as 1964 that instant circuitry would propel the world into another dimension: " Today, the instantaneous world of electronic information media involves all of us, all at once. Ours is a brand new world of all-at-oneness. Time, in a sense, has ceased and space has vanished " (McLuhan, 1966, cited in Benedetti and DeHart, 1996, p. 40). McLuhan went beyond intellectualizing on a shrink-wrapped world – he fully integrated what we would later grasp: the instantaneousness of digital communication. Electronic mail reached global proportions in the early 1990s, and anyone who has connected their computer to the Internet soon discovers with absolute amazement the wonders of electronic messaging. Participant 13 in this study reflects the sentiment of many:

♦ I LOVE E-MAIL! It has made my life so much simpler … With e-mail you can write when you have time and just send it off! Plus, I can attach documents, forward messages I receive … to my team, and send drafts of letters to get feedback from my team and have immediate answers! … I find that e-mail has improved my writing. I write better now, simply because I am writing on a daily basis [and] I see examples of other's writing.

This study looks at participants' primary data – electronic mailings – and illustrates how electronic mail has affected communication patterns among educators and how those findings interconnect with the Ministère de l'Éducation du Québec's (MEQ) New Reform, a reform which the Ministry aims to fully implement by 2008. Throughout this narrative, participants have been given a voice to better support the outcomes and implications (Maykut & Morehouse, 1994; Weis & Fine, 2000). Excerpts from participants' electronic mailings are in a different font and are preceded by a diamond-like symbol (♦).

1.2 Personal Statement: Situating the Researcher

> *[T]he human instrument is the only data collection instrument which is multifaceted enough and complex enough to capture the important elements of a human person or activity.*
> (Maykut & Morehouse, 1994, p. 27)

The final class of *Technology in Education* at the University of Texas at Arlington in April 2001 allowed for an animated discussion of intra- and interschool uses of electronic mail[1]. Listening to my peers describe the interactive uses of email[2] in their schools and beyond made me realize that this new form of communication was directly impacting ' learning communities ' (Sergiovanni, 1994). As the discussion grew, my thesis topic began to take shape. My own online[3] experience as a former distance education student corroborated my peers' observations – email is rapid, nonintrusive,

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[1] **Electronic Mail**: For the purpose of this study, the term *electronic mail* will be defined as " a medium which enables users to asynchronously exchange messages between addressable electronic mailboxes, using computers linked by telecommunications " (Hooff, 1997, p. 8).
[2] **Email**: Abbreviated term for electronic mail. Hale & Scanlon (1999) state their position on the spelling of *e-mail* vs. *email*: "[N]ew terms often start separated, then become hyphenated, and eventually end up as one word. Go there now " (p. 14).
[3] **Online**: Having a computer, a modem, and being plugged to the World Wide Web on the Internet.

asynchronous[4], and adds a new dimension to the notion of community. Colleagues, university instructors, and online experts are only a keystroke away with promptness and brevity appearing to be winning traits of email aficionados.

We are very real members of the global village thanks in part to the World Wide Web[5] and the Internet[6]; email addresses take no notice of political or physical boundaries. Be it Texas or Quebec, local or global, the education process needs to accommodate itself to a culture of interactivity, rapid change, and a technology-informed citizenry. I have been privy to the education experience in Quebec both as a student and educator, and have witnessed how the latest changes have impacted on educators[7]. Change has included amending the province's Education Act, reorienting curricula through the New Reform[8], and renewing a commitment to Information and Communications Technologies (ICT)[9]. With qualitative underpinnings, this study illustrates the impact email has had on educators, how it has affected their multidirectional, multilayered roles as educators, and in consequence, how educators and technology are impacting on students.

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[4] **Asynchronous**: Not synchronized; that is, electronic messages can be sent, stored and retrieved at different times.

[5] **World Wide Web**: A graphical interface for the Internet, composed of servers that provide access to documents that in turn provide hyperlinks to other documents, multimedia files, and sites. Also known as the Web and the WWW.

[6] **Internet**: A global network that comprises the Web, linking millions of computers for communication purposes.

[7] **Educators**: Any person who provides administrative, instructional, or any other educational services to learners.

[8] **New Reform**: The Ministère de l'Éducation du Québec (MEQ) began its reform by amending the Education Act. As an example, Governing Boards were created granting more power and autonomy to schools. The curriculum reform promotes enriched core programs, cross-curricular competencies, cycle-based learning, new evaluation procedures, and encourages students to participate actively in their own learning process. *New directions for success* defines the MEQ's vision.

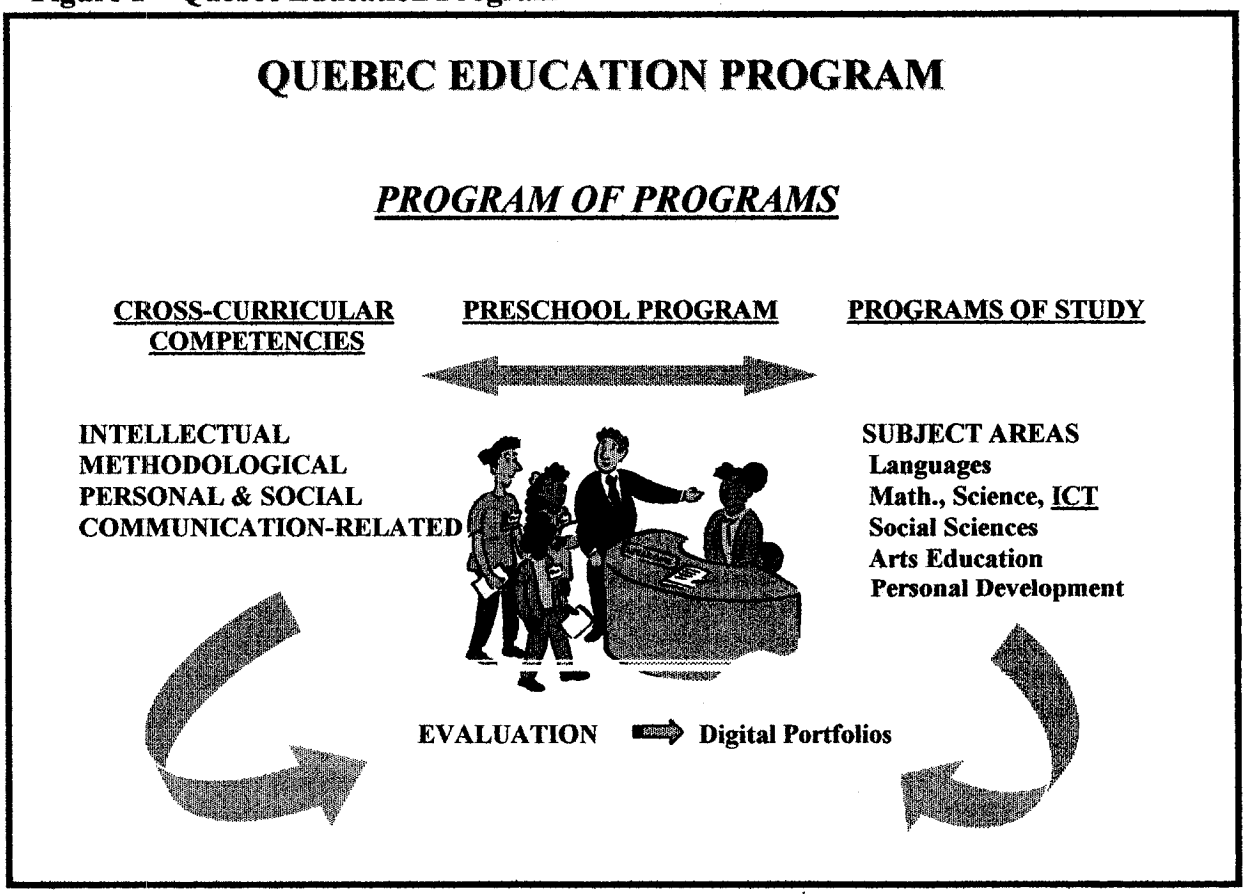
[9] **ICT**: Information Technology, popularly known as IT, includes the processes, applications and equipment by which we create, access, organize, analyse, and communicate information in the form of text, images and/or sound. The MEQ has assigned added importance to the communications component of IT and has modified the acronym to **ICT** (Information & Communications Technologies). The latter will henceforth be used.

1.3 Statement of the Problem

> *In the emerging knowledge society, information and communications technologies play a pivotal role and innovation is a key factor.*
> (Ministère de l'Éducation du Québec's (MEQ) Strategic Plan, 2001, p. 2)

The new reform is only the second undertaken by the MEQ since its creation in the 1960s. In the reform, the MEQ has elaborated specific objectives with ICT being assigned a key role in its list of academic subjects alongside mathematics and science. A fundamental objective of the new reform lies in the application of its cross-curricular competencies and an understanding that learning by association defines the learning process. The central agent in this design is the classroom educator. Figure 1 below provides an overview of the MEQ vision:

Figure 1 – Quebec Education Program



For the successful implementation of the MEQ's Education Program, reliance on the excellence of its educators has been woven into the reform's framework. However, promoting educational reform alongside a renewed reliance on ICT has created an uncertain learning/teaching environment:

1 Educators already in the system have uneven computer skills. A great many educators are simply coping, some are still hiding in the technology closet, while a few are 'technowizzes'. Despite this reality, the MEQ relies on educators to use ICT to implement cross-curricular competencies, evaluate multiple competencies, and assist learners record their progress through digital portfolios.

2 Administrators in the system define their workday by face-to-face (F2F), telephone, and email interactions. One administrator told me that while a teacher, computer literacy was a distant and hazy concept, but since being appointed an administrator, the Internet and email have become daily staples; becoming adept with technology was a must to survive in an administrative position. Integrating the pluses of technology while managing members of a team who still see technology as one more newfangled idea imposed from the upper echelons might cause friction

3 Teachers-to-be in our universities are required to meet basic technology standards to earn their degrees and will therefore enter the system computer literate (MEQ, 2001). New teachers working side-

by-side with established teachers who continue to resist technology might prove problematic.

4 Learners appear to be caught in the middle. Some of their teachers integrate technology in their classroom practices while others continue to have too great a discomfort with technology to be effective users or advocates of the medium. More importantly, the MEQ has not devised a cycle-by-cycle program to teach essential knowledge and skills for technology applications. How will learners cope with technology if many of their teachers feel uncomfortable with the computer?

> ♦ I am not too 'swift' with the computer ... I am not too comfortable using it. I also have two in my classroom with a printer. I have my students go on them as much as possible. Unfortunately, I do not use e-mail very much as an educator.
>
> Participant 25

The issues are further compounded by another level of difficulty. Underpinning the new reform is the MEQ's commitment to team planning and teamwork collaborations to promote project-based teaching: " Competency-based programs of study, and cycle-based school organization, require ... teamwork with colleagues who come into contact with the students in the cycle or teach other subjects [and] will become especially important in developing and evaluating competencies over periods longer than one school year " (MEQ, 2001, p. 23). The MEQ calendar (Appendix A) clarifies at a glance the new educator teamwork philosophy. Grade levels are arranged in cycles and competencies begun in the first year of a cycle remain in the learning phase till the second year (or third year in Cycle 2 - Secondary) where the consolidation phase allows the learner to apply learned skills. Criterion-based, formative assessments precede

summative evaluations. This paradigm shift is asking educators to collaborate on level and cycle teams to support individual learner progress. Educator long-term accountability is a new reality.

1.4 Purpose of the Study

> *Conclusive results on the impact of ICTs are not yet available to policy makers to rely on as they are pressed into action regarding the integration of ICTs in education.*
> (Laferrière, 1997, p. 9)

There remain many unanswered questions about how educators will gain a comfort level with technology. Finding out if educators use the Internet and applications such as email, how much they use email technology and for what purposes are valid queries in the context of a technology-oriented, team-based education program. Revisiting my focus of inquiry – *The influence of electronic mail on communication patterns among educators* – helped formulate my research questions:

- How extensive is email use among educators?
- To what ends are educators using email?
- Is email facilitating the learning/teaching process?
- Are schools facilitating Internet applications such as email?
- Are educators extending their offline teamwork to online *virtual teams*[10]?
- Is the notion of 'virtual community' real for educators?

The MEQ's focus on ICT and its reliance on educator know-how come built-in with obstacles. I believe it important to discover the extent of educator ease or discomfort with technology to better evaluate the intended success of the new reform.

[10] **Virtual Teams**: Teams composed of people in different locations using electronic communication tools to do collaborative work.

1.5 Significance of the Study

> *The growth of email communication in education is phenomenal. Yet, in general, email research in education is still fledging.*
> (Tao,1995, p. 4)

Email research in education has been scant and email studies dealing specifically with educators has been even scanter. Most research on electronic mail has been drawn from empirical and theoretical work done in other fields such as Communications and Business Organizations. Considering the exponential growth of email use by educators and the implementation of email communication systems by school boards, the limited research on electronic mail usage by educators can only hamper the MEQ and school board administrators' ability to solidly validate their policies relating to ICT.

The MEQ has revamped its educational system with a heavy reliance on the integration of technology through the expertise of its educators. Educator ease with technology impacts learners directly and will continue to have enormous significance on how successfully the new reform is implemented. The reform is to be completed by 2008 so that highlighting roadblocks midway through the implementation process might prove beneficial to educators as well as policy makers.

- You have a fascinating topic!
  Participant 54

- Thanks for your great research!
  Participant 13

- I am looking forward to hearing about your results.
  Participant 42

1.6 Summary

Electronic mail is the most popular Internet application. Quebec education is undergoing structural changes where technology has been given a front row seat. Analyzing how educators have been coping with change while adapting to new technological standards created a learning environment ripe for research.

CHAPTER 2: REVIEW OF LITERATURE

2.1 Introduction

As you progress through the research process,
the literature informs you in new and exciting ways.
(Anderson & Arsenault, 1998, p. 32)

Looking at electronic mail and educators' relationship to it has implied investigating two areas of literature: communications and organizations. When the fields of communications and organizations are intersected with Information Technologies, they have been found to be the primary focus of the scientific and business communities. Tao (1997) stated that technology inquiries in education have been influenced by research done in communication, management science and organization. In education, research with Information and Communications Technologies (ICT) has primarily converged on facilitating the classroom learning experience. Very little research has looked at educator email use and how it might impact on communication patterns among educators. Understanding the rudiments of electronic mail is the natural place to begin this literature review.

2.2 Electronic Mail

The first use of network mail announced its own existence.
(Tomlinson, quoted in Campbell, 1998, p. 3)

Electronic mail is the most widely used Internet application. With 14.9 billion emails sent daily and 4 trillion emails sent annually by Internet users in 2002 (Channel One, 2002), and with Bill Gates (1999) stressing that only managers, " who master the digital universe will gain the competitive advantage " (p. 72), it can be said that email has become the single most popular form of written communication for those connected to

the Internet. Before exploring the advantages of digital communication, we need to revisit Hoof's (1997, p. 8) definition of electronic mail:

> *A medium that enables users to asynchronously exchange messages between addressable electronic mailboxes, using computers linked by telecommunications*

2.2.1 Multiple Advantages

Electronic mail allows the user to accomplish multiple tasks. Sproull and Kiesler (1992) enumerate email's many characteristics:

1. *Asynchronicity*: Messages can be sent and read at different times; " Prime time is my time " (Negroponte, 1995, p. 172).
2. *Rapidity*: Messages can be sent and delivered within seconds, irrespective of distance
3. *Text-based*: The keyboard's orthographic symbols are used to compose messages
4. *Multiple-receiver addressability*: Messages can be sent to one or multiple recipients without regard to time or distance
5. *Built-in external memory*: Messages can be easily stored or retrieved at any time
6. *External memory is computer processable*: Stored messages can be searched, edited or shared with others

- Being able to use email both to receive and transmit makes me a more effective and efficient administrator

  Participant 18

- I find that email is a great way to communicate at everyone's convenience

  Participant 52

2.2.2 The Early Days of Email

Large-scale adoption of electronic mail systems by service providers reached global dimensions by 1993. However, 1971 marks the year Ray Tomlinson sent the first email message to himself testing a program he had designed. As a computer engineer with Bolt, Beranek and Newman, a company hired by the United States government in 1968 to design and build ARPANET (precursor to the Internet), Tomlinson had devised an electronic message system that he called SNDMSG which allowed colleagues to leave messages for each other in an electronic 'mailbox'. There was a limitation to this application – users had to use the same machine. There was another constraint – users could not read the message. So Tomlinson designed another program - READMAIL - making messages readable, thus allowing two-way electronic messaging to begin in earnest at Tomlinson's company (Campbell, 1998).

Tomlinson then wanted to extend the application to computers that were not part of his internal network. That step required a simple modification to the protocol. To distinguish between internal exchanges and electronic messages sent at-large, Tomlinson made use of the keyboard symbol @, a familiar component of all email addresses today. Within two years, the most popular use of ARPANET was electronic mail (Campbell, 1998).

Newcomers to electronic mail take time to gain a level of comfort. Russell (1995) looked at the evolution of acquiring ease with email technology and identified six stages:

1. Awareness
2. Learning the process
3. Understanding, and application of the process
4. Familiarity and confidence
5. Adaptation to other contexts
6. Creative application to new contexts

Electronic mail has fostered global connectivity since the early 1990s and positive attributes of the digital citizenry are emerging. Research has revealed that technology promotes democracy, citizenship, knowledge, literacy and community (Katz, 1997).

> ♦ I find that writing e-mails has improved my writing. I write better now, simply because I am writing on a daily basis. I find my memos, etc., becoming more professional, also, because I see examples of others' writing and that helps me learn how to write more professionally too.
>
> Participant 13

> ♦ Email [is] my primary form of communication with those who would be otherwise almost impossible to contact.
>
> Participant 58

2.2.3 The Email Address – Its Components

Electronic mail addresses generally consist of three basic elements: the *user name*, the *symbol* @, and the *domain name*. Dots act as separators in electronic addresses. The absence of any spacing between addressing components is a basic rule. Addresses tend to be typed in lower case although some addresses are case dependent.

User's Name

Most Internet Service Providers invite their members to choose their user name. However, organizational email systems sometimes request that employees adhere to established norms.

Symbol @

Integrating the 'at' symbol was Ray Tomlinson's brainchild and allows computers to distinguish between the recipient's user name and the domain name.

Domain Name

This element of the email address is organized into a hierarchical system, and usually differs if within the United States or outside the USA. Domain names are unique identification codes and their registration is required.

In the United States, the domain name identifies the *name of the organization* followed by the *type of organization* (e.g. Hotmail.com). There are a variety of organizational codes (also known as top-level domain names) that refer to various types of organizations:

.com – commercial	**.org** – non-commercial organization
.gov – government agency	**.edu** – educational institution
.mil – military	**.biz** – business organization

Outside the United States, the country's code can be either added to, or replace the organizational code (e.g. **ca** – Canada; **fr** – France; **uk** – United Kingdom). These codes are determined according to international standards and made available by the Internet Society [www.isoc.org]. American government addresses sometimes include both the state and country codes. A full list of country codes can be found at the following website: [www.huge.org/clapres/codes.html].

2.2.4 Email Pathways

Email data are usually text-based yet can include multimedia. For computers not hooked up directly to each other, data travels from the sender's computer through a telephone line/cable, or TV cable to a message transfer agent within the network. The message will then either be delivered within the network if the receiver has the same electronic mail provider (e.g. Hotmail to Hotmail), or outside the network (e.g. Hotmail

to Videotron). The message is then directed to the receiver's electronic mailbox within seconds of its being sent.

Computer data are stored digitally. If a computer is connected to a telephone line, a modem (**Mo**dulator/**Dem**odulator – device/program) is generally required to convert the telephone system's analog waves to the computer's binary digital signals. Computers connected to a digital telephone system do not require a modem – no conversion is necessary.

2.3 Electronic Messaging – Valued Features

> *A global infrastructure is essential*
> *to attaining global connectivity.*
> (Blum & Litwack, 1995, p. 47)

Electronic mail features vary from provider to provider although standards now exist worldwide. I have selected Hotmail as my source of reference because it is the leading electronic mail service provider (Metz, 2002). Hotmail has multilingual capabilities, accounts are free, and wherever Internet connections are available, Hotmail accounts can be accessed.

On the following page is a sample of Hotmail's registration form for new members. All the elements are present for the selection of an email address. Security considerations are also addressed. Signing in is an interactive process with hyperlinks available to assist new members with supplementary information.

MSN Hotmail

Registration

Your MSN® Hotmail® account is also a Microsoft® .NET Passport. Completing this form will register you with Hotmail and with .NET Passport. With .NET Passport, you can use the Hotmail address and password you create below to sign in to any site that has the .NET Passport sign-in button. Sign In

Profile Information

Help

First Name

Last Name

Your first and last names will be sent with all outgoing e-mail messages

Language: English

Country/Region: Canada

Province: [Choose One]

Postal Code

Time Zone: Universal Time - GMT

Gender: ○ Male ○ Female

Birth Date: Month | Day | (ex. 1999)

Occupation: [Select an Occupation]

Account Information

E-mail Address: @hotmail.com

Password
Six-character minimum; no spaces

Retype Password

Secret Question: Favorite teacher's name?

Secret Answer

Services

☑ Hotmail Member Directory

☑ Internet White Pages

Use these check boxes to indicate whether you'd like to be listed in these Internet directories. More information about directories

Tired of registration forms? You can speed registration and get personalized services at participating sites by sharing your .NET Passport information with them when you sign in. Select the boxes below to choose how much of your .NET

Passport information Microsoft can share with other companies' .NET Passport sites at sign-in:

☐ Share my e-mail address

☐ Share my first and last names

☐ Share my other registration information

Tell me more about .NET Passport, privacy, and security.

AGREEMENT BETWEEN YOU AND MICROSOFT CORPORATION

MSN Hotmail uses the Microsoft Passport service to register you for and to sign you in to your e-mail account. Hotmail and Passport have separate terms of use and privacy statements. To use the Hotmail service, you must agree to the terms of use and privacy statement for

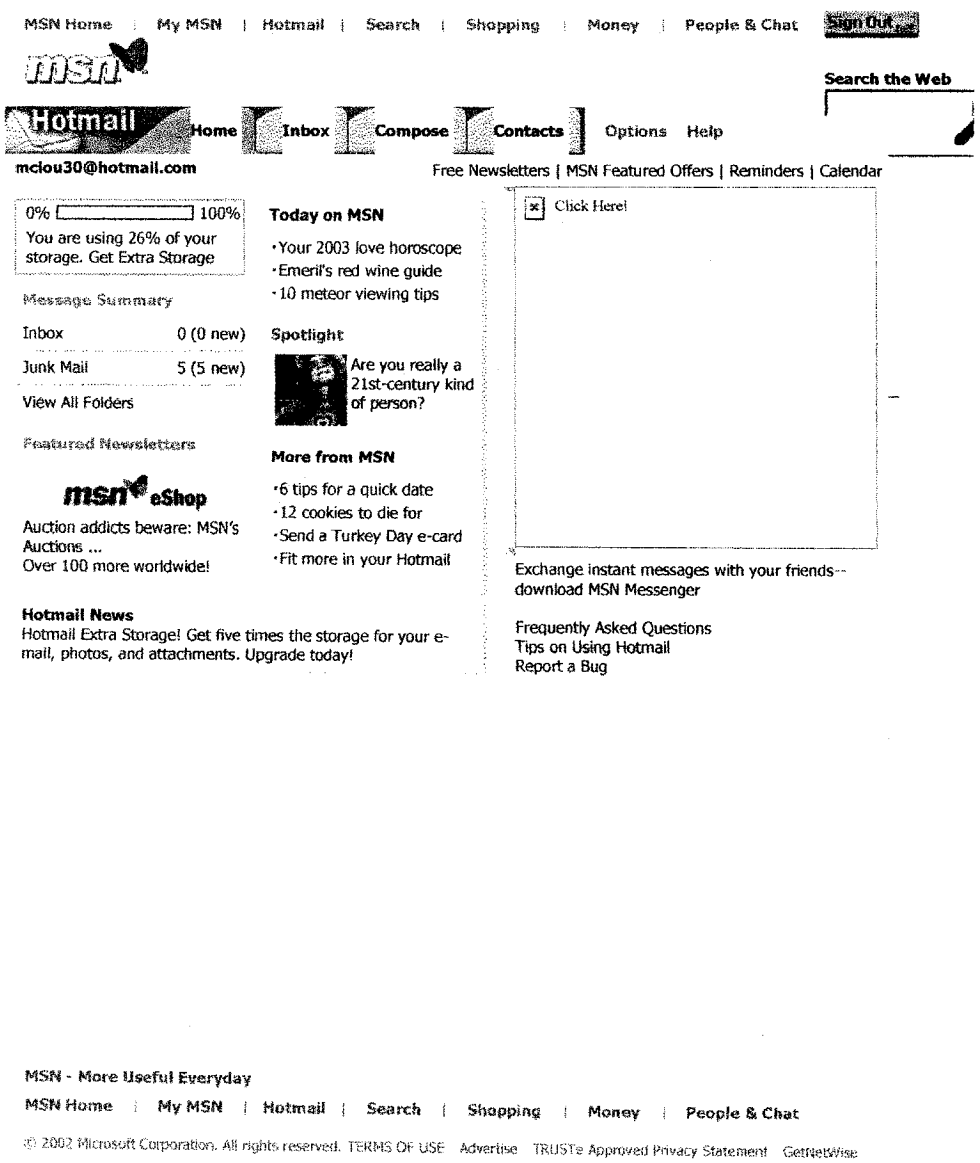
Hotmail Terms of Use
.NET Passport Terms of Use
By clicking **I Agree** below, I am attaching my electronic signature to and agreeing to the Terms of Use for Hotmail and for the .NET Passport Services; I am also accepting the MSN Privacy Statement and the .NET Passport Privacy Statement. I understand that if I do not agree to these terms of use and privacy statements, I should click **Cancel**, discontinue my registration, and refrain from using the Hotmail and .NET Passport Services.

I Agree | Cancel

.net

Member Services Terms of Use Privacy Statement

Once the signing-in process complete, the new member is guided toward his personalized Hotmail Homepage. There he will see his electronic address in the upper left under the Hotmail logo along with *Storage* availability and the *Message Summary* rubric. Tabs at the top of the page allow the subscriber to view the *Inbox* for messages, *Compose* new messages, or view his list of *Contacts*.



Various features that facilitate the writing of an email vary from provider to provider even though basic standard features are evident among all email providers. The most familiar feature is the memorandum template with the usual contextual headers: *From*, *To*, *Cc*, *Bcc*, *Subject*, and *Attachments*. The memo format fosters informal exchanges (Lee, 1996). In Hotmail, the headers *From* and *Subject* appear as identifiers in the recipient's mailbox when an email initially arrives along with the date and the size of the digital file. In fact, the subject line often contains the essential if not the entire message.

Electronic mail becomes a powerful tool when information can be sent or received with the *Attachments* feature. An attachment can be any type of document created electronically. Multiple documents can be attached to the same email. How documents are attached to an email is a one or two-step procedure with slight variations among email providers. Once an attached document has been downloaded, it can be edited, printed, saved, or deleted.

> ♦ The other feature that works well for me is the attachment. As I become more computer literate my uses for email increases.
>
> Participant 18

> ♦ Email is effective for students who may be sick long term as assignments and notes can be sent by attachment.
>
> Participant 52

Editing a message is possible due to a variety of editing tools. Hotmail offers a spell-check, a dictionary, a thesaurus, and a rich-text editor to change fonts and colours. Hyperlinks lead the user to other features to enhance the emailing experience. Composed emails can be saved as drafts prior to being sent allowing for later retrieval.

Received messages can be treated with an equally wide array of features: the saving of both the electronic address and message for future retrieval, replying to single or multiple recipients, forwarding to another party, or deletion.

> ♦ I do find email to be very useful to ask questions and give information to people. Documents can be attached, questions answered, appointments can be set up - and there is an automatic record of things, which is great.
>
> Participant 12

2.4 Prefacing Digital Communication

> *Rule # 1: Insist that communication flow through e-mail.*
> (Gates, 1999, p.74)

Communications was first known under the banner of *rhetoric* by the early Greeks and made reference to the art of public speaking. Aristotle (B.C. 384-322) saw Rhetoric as a branch of Logic – the ability to persuade an audience. By the 16th century, the verb *communicate* had entered the English language (Webster, 1993). In the last century, the public's perception of communication has undergone considerable mutations with the evolution of mass media.

Ruben (1988) stated that the communication process entails basic components: a source, a message, a medium, a receiver and a final effect. How messages are communicated is influenced by their directional flow. Watzlawick, Beavin, and Jackson (1967) indicated that multiple modes of communication are unique to human behaviour. Parallels can be seen between the multiplicity of the human brain and the World Wide Web – both are recursive, iterative, nonlinear, and associative (Biela, 1994; Bush, 1945; De Kerckhove, 1995). For the first time in history, information technology is allowing humans to process information outside the human brain (Groth, 1999).

2.5 Electronic Mail ↔ Global Connectivity

> *Email is creating a totally new, global social fabric.*
> (Negroponte, 1995, p. 183)

During my lifetime the world has come to a screeching halt on two occasions: November 22, 1963 when John F. Kennedy was assassinated, and September 11, 2001 when the World Trade Centre was decimated. In both instances, television was a vital means of communication, one-way communication. On September 11 and the days following, electronic mail became a vital two-way link. Lauren Manning was caught in the Twin Tower horror and spent three months recovering at the burn unit of a New York hospital. Her husband Greg, kept their network of friends informed of Lauren's progress through emails.

> *I am writing these e-mails, which represents,*
> *after caring for my family, the most valuable thing*
> *I have ever done. I have wanted it to build a network*
> *of love for Lauren so that when she needs it, the*
> *embrace that will take her in will encircle the globe.*
> (Manning, 2002, p. 4)

Electronic mail has the power to interconnect people the world over – " Global connectivity de-emphasizes the importance of locality for community " (Wellman & Gulia, 1999, p. 354). When we first saw the photographs of the earth taken from outer space, we saw no boundaries, no partitions, simply one very beautiful planet. Electronic mail, more than any other tool, is translating McLuhan's ' global village' into reality.

> ♦ It has allowed me to exchange ideas with a few teachers. Teachers from neighboring schools as well as overseas.
> Participant 6

2.6 Electronic Language: Redefining How We Communicate

> *[E]-mail adapts the technology of the keyboard ... to the requirements of talk.*
> (Lee, 1996, p. 291)

When we communicate we share information. For most people, communicating entails speech and writing. Speech is produced dynamically and consumed in the same manner; writing is far more reflective therefore slower than speech, and consumed at the speed of the reader (Yates, 1996). How we choose to communicate influences the form and content of our communications. McLuhan (1964) proclaimed early on in the technology revolution that *the medium is the message*; studies in orality and literacy have established that " language changes when communication media shift " (Lee, 1996, p. 276).

Barnes and Greller (1994) claimed that email encourages communication. It allows users to keep in contact with their professional and personal network.

- I really believe that e-mail has brought me closer to some of my family members ... when I decided to change my job last year, e-mail proved to be a vital means of communication. He [principal] kept me posted throughout the many stages of the hiring process.

  Participant 10

- I know that e-mail has greatly effected my communication pattern!! ... I definitely have better relationships with people.

  Participant 9

Electronic mail has shifted writing from a static, conventional exercise to " a whole new fractured language – definitely not as elegant or polished as English used to be, but in a way, much more vital " (Katz, cited in Hale & Scanlon, 1999, p. 3). Along

with Collot and Belmore (1996), Lee (1996) qualifies email as a *hybrid* medium, " a new and highly significant form of rhetoric " (p. 276).

What makes email a 'vital' and 'significant' hybrid medium? The intersection of orality and literacy conventions has given rise to a new set of rules. The strong oral component is revealed in the spontaneous, instantaneous, brief, direct, and playfulness of emails. Its written component is evident in the memorandum template and the letter writing conventions. Negroponte (1995) and Groth (1999) believed that email's oral influences are impacting on its written conventions. This hybridity has redefined how text is created and proven to be a liberating experience for many emailers. Freedom to stretch rules injects a real sense of no-holds-barred communications, translating what was initially perceived as an impersonal experience into a surprisingly personal one (Hale & Scanlon, 1999).

What happens when orality and literacy intersect as they do in email? What are the new rules? Hale and Scanlon (1999) as authors of *Principals of English Usage in the Digital Age* offer a good point of departure. Even though the rules are different, from spelling to punctuation to etiquette, accuracy and literacy tinged with irreverence bridge the old to the new. In oral and written communications, we gauge our language according to our audience. So with email. " Know your audience well enough to violate ... rules and ... toy with conventions " (Hale & Scanlon, 1999, p. 14). Even at the onset of the globalization of email systems, Hawisher and Moran (1993) believed that email was the primary form of organized communication. With billions of emails sent daily, the appeal of '*written talk*' has been firmly established (Baron, 2000; Cerf, 1999; Herring, 1996; Lee, 1996; Tornow, 1997).

♦ While it [email] may not be as personal as a telephone call, it allows me to 'talk' to them whenever I want.

Participant 45

♦ I can 'talk' to people whenever I want.

Participant 11

2.7 Electronic Discourse: Evolving Conventions

> *Because Electronic Language has unique situational features, it seems reasonable to assume that it embodies a distinctive set of linguistic features as well.*
>
> *(Collot & Belmore, 1996, p. 15)*

> *E-mail presses against the boundaries of grammar and rhetoric defined by the print culture.*
>
> (Lee, 1996, p. 292)

The speed with which messages are encoded, sent and received influence their form and content. Meyrowitz (1985) found that when the process was slow, both form and content were more formal. Electronic mail is known for its brevity and immediacy. The spontaneity and informality of email promotes informal messages where phonetic spellings, jargon and colloquial expressions are standard fare. Frequent misspellings and unconventional punctuation can create a stressful environment for newcomers to electronic discourse who see email as simply another print medium where established writing conventions need to be respected. Lee (1996) pointed out that deviations from syntax and grammar rules reflect efforts to visualize talk.

♦ I use email everyday. I write mail using it anytime I want and I need, and can act casually without bothering formalities.

Participant 12

♦ i have a real pet peeve about e-mail and that's that people never pay attention to spelling, grammar, and the

> fact that they may be writing run-on-sentences in their e-mail. i don't know who made these informal rules but i think it could change the nature of the English language eventually.
>
> Participant 5

In response to Participant 5, Hale and Scanlon (1999) state: " Write the way people talk. Don't insist on 'standard' English. Use the vernacular ... don't sanitize, and don't homogenize " (p. 12). Change in email writing conventions is inevitable. It is, after all, a new medium. Combining brevity with basic rules of syntax and grammar is the challenge of effective email writing.

For those seeking guidelines with this new medium, Danziger (2001) has listed six suggestions (pp. 222-223):

1. Re-read your message before sending it
2. Use the subject line to hook your reader
3. Pare your distribution list
4. When replying to an email where there are multiple addresses, reply to sender only
5. Avoid colloquialisms when writing to an international audience
6. Don't mark every message, 'Urgent'

Jargon-use among email habitués creates a sense of community, a sense of belonging (Lee, 1996). Compressed words mimic the oral environment as the following initialisms illustrate (Angell & Heslop, 1994):

- Be right back <BRB>
- Face to face <F2F>
- In my humble opinion <IMHO>
- Oh, by the way <OBTW>
- Thanks <TNX>

Orthographic conventions continue to evolve in electronic communications. The most widely known is the use of capitals to denote loudness. Multiple question and exclamation marks show emphasis, multiple vowels indicate a change in intonation, and

asterisk fillers such as s*** leave little to the imagination. This new genre of mock-oral prose (Lee, 1996) invites boldness within well-defined parameters.

A minority of online messages involve adversarial language that often include profanity. This is known as *flaming*. Katz (1999) believed that flamers " marginalize themselves by the narrowness and shallowness of their opinions " (p. 2). It is worth noting that flaming is absent among teams when they are working online (Hawisher and Moran, 1993).

Gregory (1997) studied gender differences in electronic discourse and identified apparent distinctions. Women are more likely to use polite language while men imitate the same language used in F2F encounters. Women use cooperative language while men prefer independent communication patterns. Women tend to include emoticons[11] in their messages. Emoticons provide support to the written word, as does body language in F2F exchanges. Rezabek and Cochenour (1995) found that certain factors influence the use of emoticons:

1. Level of communication formality
2. Cohesion of the communication group
3. Age
4. Gender
5. Difficulty of icon reproduction
6. Commonality of meaning
7. Personal preference and experience

The popularity of emoticons reflects the ever-present desire of emailers to mesh together the real with the virtual. Following are a few examples of more popular emoticons, also known as *smileys*:

:-)	happy	**;-)**	wink
:-(	sad	**:-@**	screaming
:-o	surprised	**:-|**	indifferent
>:-<	mad	**:-D**	laughing

[11] " **Emoticons** are visual cues formed from ordinary typographical symbols that when read sideways represent feelings or emotions " (Rezabek & Cochenour, 1995, p. 2).

♦ [A]nyway, those are my thoughts, let me know if you need more info. :-)

Participant 9 (female)

♦ Gender Issues? :)

Participant 50 (male)

2.8 Electronic Mail: Social Implications

> *[E]-mail is a fundamentally new medium with significantly new characteristics that cannot be treated with the old rules alone.*
> (Shapiro and Anderson, 1985, p. 10)

Do you have a suggestion for Carly Fiorina, Chairman and CEO of Hewlett Packard? Why not visit the company's website and send Fiorina an email. She invites you to do so. Invitations to directly contact people in authority have redefined organizations and the movement of information. Bill Gates (1999) read all emails sent to him by employees when he was CEO of Microsoft. Email democratizes organizations and flattens the hierarchy as well as enabling people at the periphery of organizations to become more visible and subsequently, more committed (Kollock & Smith, 1996; McComb, 1994; Romm and Pliskin, 1998). Sproull and Kiesler (1992) resumed the impact of email on organizational social patterns: " Change in social contact patterns means change in who people know and how they feel about them " (pp. 4-5). Wellman and Gulia (1999) claimed that people often opt for email rather than F2F because they can better control both their message and how they are perceived, and often do not want to deal with other people's responses.

Bill Gates used the email memo template to guide his paring down of messages (Seabrook, 1994): No salutations; no closings. It is worthwhile repeating that in the recipient's electronic mailbox, the sender's name and the subject of the message

accompany the email. Therefore, the sender and the recipient are identified even before the email is opened so salutations can appear redundant. Frequent users have adopted three conventions when concluding an email: sign off with one word or phrase, first name or initial, or simply stop writing. We are often reluctant to abandon old conventions and instead, try to force them on to new technologies.

Because the computer is a faceless medium, McComb (1994) and Bordia (1997) suggest that there is greater equality of participation with email. The absence of status and other identifiable markers create an environment where freer speech is possible. Bordia also noted a reduction of social-emotional interaction which tends to promote a higher level of idea generation. Whitley (1997) examined the benefits of computing technologies for shy and reserved people. In the absence of cues such as gender and ethnicity, people are more inclined to open up. Sproull and Kiesler (1992) found that electronic communication fostered more uninhibited and livelier exchanges than comparable F2F encounters. For many, active participation is a new reality.

> ♦ Maybe because I don't need to see people's facial expressions when I write an e-mail, so I am more confident to express my opinion.
>
> Participant 2

Hall (1996) believed that the absence of physicality favoured gender intensification. Many exaggerate their gender attributes to better convey their image. This negotiation of identity is obliging people to take a fresh look at where they fit in this redefined web of human relationships (Ziv, 1996). Herring (1996) found significant differences between genders in digital communication: men tend to be oppositional and critical; women, supportive and more oriented toward fostering interpersonal contacts.

♦ [Our] email group is a support group for each other.
Participant 53 (female)

Obtaining a member check (Lincoln & Guba, 1985) seemed necessary with this email comment. I recontacted Participant 53 to clarify the gender of her email group. Here was her response: " One of my email groups has men and women, but my main support group of teachers is all women. I think one of the reasons it is an all women group is that there are many discipline issues where it is important to discuss how we handle problems as women versus what a man would do, i.e. intimidation tactics by some male students ". This participant's elaboration confirms what researchers have found – women create online supportive networks that fulfill a real purpose.

Tannen (1994) found that women transfer their F2F social skills to digital communications. Sproull and Keisler (1992) observed that in F2F encounters, men talk more than women, but in electronic encounters, McGuire, Keisler and Siegel (1987) noted that women took the initiative as frequently as did the men. Despite gender differences, women and men can equally benefit from the emotional support and companionship provided by the computer's potential as a social tool (Wellman & Gulia, 1999). For many, email is the sole connection to the outside world (Rheingold, 2000).

Turkle (1996) and Whitley (1997) looked at 'virtual cross-dressing'. Taking on a different gender might seem simple enough yet maintaining an illusionary presence requires a thorough understanding of how each gender inflects speech and interprets experiences. Through email, we author not only text but also our persona. We can fool some of the people some of the time but ideally we are best as ourselves, even online.

Since the onset of email, digital etiquette or *netiquette* has held a place of importance, especially among frequent users. Without the rigidity of an Emily Post rulebook, the dos and don'ts of the cyberworld facilitate communication:

1. Be brief. " Brevity is the soul of e-mail " (Negroponte, 1995, p. 172)
2. Get to the point; avoid irrelevancies
3. Send messages only to those concerned
4. Sent messages are permanent documents
5. Don't respond when emotions have the upper hand
6. Don't return the full copy of a message with the reply, especially if there is an attachment
7. Include a reference to context when replying
8. Email is a person-to-person medium
9. Sending jokes can be overdone, especially the ones that take up huge amounts of 'bandwidth' – the information-carrying capacity of the wires and channels (Shea, 1994)
10. Respect people's time and bandwidth
11. Capitalized words 'scream' – avoid or use sparingly; all lowercase communications can be equally annoying
12. Adhere to basic rules of syntax and grammar
13. Formal letter writing conventions may be seen as antiquated by frequent users
14. In an organizational setting, realize that anyone may read your emails, and conversely, respect email privacy

How well we adhere to email etiquette can affect our online status. The following website offers a netiquette quiz to assess cyberspace courtesy:

[http://www.albion.com/netiquette/netiquiz.html]

2.9 Organizations and Digital Communication

> *The first time I saw the Web,*
> *I wanted to create communities there ...*
> *Virtual communities affect the minds of individuals,*
> *the interpersonal relationships between people,*
> *and the social institutions that emerge from human relationships.*
> (Rheingold, 2000, pp. 334 & 351)

Avison and Myers (1995) noted that information technology directly impacts organizational cultures and vice versa. Sproull and Kiesler (1992) looked at the effects of

electronic mail on organizations and identified two distinct levels of influence. They identified the technical, *first level* effects as those that impact task productivity and efficiency. They found that *second level* effects were reflected in the social structure of the organization. Manifestations of *second level* effects have been the flattening of hierarchy due to direct communication between employees at different organizational levels, communication between people who had never communicated before, and emerging networks. With time, the authors noted that the problem-solving techniques that accompany *first level* competencies give way to interpersonal-rich, *second level* social skills with the observation that when communication structures change, new communication patterns are created. Rice and Stanfield (1994) also found that new communication patterns evolve when electronic mail systems are implemented in organizations.

- I am waiting to get my email address from the school board to communicate it to parents who would like to contact me ... I will be able to speak to other teachers in the school board.

Participant 26 (author's translation; original in French)

For educators, the learning organization defines where the learning/teaching process comes alive. Senge (1990) defined it as " an organization that is continually expanding its capacity to create its future " (p. 14). In 1994, Senge et al. enlarged upon this definition to include " the development of not just new capacities, but of fundamental shifts of mind, individually and collectively " (p. 18). This shift has been advocated by Sergiovanni (1994) where he asserts that " it is time that the metaphor for the school was changed from formal organization to community " (p. 14). Learning communities are bound together by shared values, a common vision and a commitment to a meaningful mission. The atmosphere created by sincere collegiality creates a school culture that

" fuses individual identity with collective destiny " (Deal, 1993, p. 7). Etzioni and Etzioni (1999) claimed that communities that have a higher amount of access are more likely to form satisfying relationships. This increased access is made possible by the formation of hybrid teams, ones that combine offline, F2F exchanges, and online interactions. The authors found that hybrid teams heightened community members' sense of bonding. Hybridity was discussed earlier in this document where electronic mail was seen as a melding of oral and written conventions (see p. 31). The notion of interconnection is again being proposed, this time as an intensifier of community. Wellman and Gulia (1999) examined virtual communities and found that the popular definition of *community* is evolving from a concept of spatial networks, i.e. neighbourhoods, to social networks where shared interests rather than similar characteristics connect people.

> ♦ With those I do not know yet (haven't met yet), on the basis that the people have the same objectives (mutual ones), it is really an effective and efficient tool of communication.
>
> Participant 11

The formation of virtual communities is promoted by the MEQ. Its educational reform encourages offline to online teamwork within the cycle framework. The MEQ's commitment to ICT is contributing to change in school culture and how networks are perceived. *FirstClass* is a messaging and communications system being implanted in learning communities to " create powerful online electronic communities that enable individuals and groups of people to work more effectively " (Centrinity, 2002). This system reflects Sproull and Kiesler's (1992) belief that networked organizations are built on four principles (pp. 14-15):

1. People are viewed as people, not users
2. Open access to people and information
3. Provide diverse forums through which people can work together
4. Devise policies and incentives that encourage exchange

A case study conducted by Romm and Pliskin (1998) looked at group development through email. Multiple findings supported the notion that email contributes positively to social interactions and community building:

- Virtual teams have the benefits of small, F2F groups (data included 1 200 emails)
- Email creates the illusion of physical and emotional closeness
- Email enables people at the periphery of organizations to become more visible
- Email democratizes organizations and flattens the hierarchy

♦ [Email] expands the boundaries of the learning environment. We can continue to learn and study and share together outside of the classroom walls. Also, when we have group projects, how else could we function than with e-mail?

Participant 13

♦ What a treat to look at catalogues online and then email your questions directly to the company!

Participant 54

Stone and Thach (1999) also found that virtual teamwork had similarities with F2F teams. The authors proposed a six-step model to set up virtual teams:

1. Define team purpose
2. Set up connectivity systems
3. Define roles and competencies
4. Select technology and support
5. Implement and carry out day-to-day work
6. Effect project achievement and evaluation

For many, virtual realism continues to require a leap of faith. Developing a comfort zone with virtual reality is a prerequisite for effective hybrid teamwork. Heim (1998) believed that it took time to " install the technology into our lives and our lives into the technology " (p. 6). Zuboff (1988) argued that no sector was exempt from the changes brought about by technology nor its dilemmas.

♦ I am a reluctant e-mail user.

Participant 30

♦ I have used e-mail for quite a while now, since the early '90s ...[but] attaching a document was a new thing for me.

Participant 41

♦ What would I do without my email? I've 'come a long way, baby!'

Participant 35

My participation in hybrid teams as a graduate student confirmed the complementarity of offline and online communications with the result of maximizing team productivity. Each member's voice was heard and because of that full participation, task completion was seen from the perspective of a wide-angle lens. Jonassen and Kwon (2001) found significant that the problem-solving process within the context of a virtual team was more satisfying for participants due to the asynchronous environment that encourages task focusing. They also noticed that communication patterns within virtual teams more closely reflected the problem-solving nature of the task than that of F2F groups.

♦ Our virtual team is connected through various systems and one of those is e-mail. We would be lost without e-mail

Participant 23

♦ I have a group of teacher friends, who all communicate with each other via email to share teaching ideas and strategies

Participant 53

Less positive effects of electronic mail have been addressed by Hoof (1997). Information overload, irrelevant information, and social impoverishment due to the time devoted to reading and attending to emails are frequent complaints.

- I am more bothered by the total assault of phones, email ... I am swamped with info.

  Participant 55

- I found email to be very time consuming - especially with all the junk mail and endless jokes to be waded through

  Participant 30

- I seem to spend more time in front of the computer and therefore less with people

  Participant 31

2.10 Summary

How we communicate is altered when our mode of transferring information changes. As early as 1985, Cartwright contended that the impact of computers would be " greater in the area of communication than of computation " (p. 1). Electronic mail is a relatively new medium where oral and written protocols intersect to produce new writing conventions. Even though email technology has been available to the general public since the early 1990s, electronic messaging protocols continue to be debated and according to Baron (2000), the flux with which email style finds itself indicates that it is too soon to tell which conventions will finally win out. However, what has been agreed upon are email's multiple advantages, and its enormous popularity.

CHAPTER 3: METHODOLOGY

The credibility of one's work in large part depends on a thorough discussion of one's research methodology.
(Maykut & Morehouse, 1994, p. 154)

3.1 Introduction

A qualitative posture was adopted in this study to explore the phenomenon of email communication among educators. Qualitative inquiry is rooted in the here and now like digital circuitry, and seeks to understand participants' perspectives in their natural setting (Lincoln and Guba, 1985). Data analysis gives direction to how outcomes will emerge, and fundamental to qualitative research is the concern " with process rather than simply with outcomes " (Bogdan & Biklen, 1998, p. 6). It was this focus on process that remained the guiding light for designing this qualitative research.

3.2 Research Design

The qualitative researchers' goal is to better understand human behavior and experience.
(Bogdan & Biklen, 1998, p. 38)

Qualitative evidence is well established in the field of education and having worked in learning communities for over twenty-five years, a qualitative inquiry process was ideally suited to my investigative purposes (Anderson and Arsenault, 1998; Bogden and Biklen, 1992; Eisner, 1991).

Participant educators were asked to send me an email describing their use of email technology. Data collection was carried out in an unfamiliar setting – the Internet. From the onset, participants were informed that the Internet was not a secure

environment. Participant safety and confidentiality were my constant concern, and every effort was taken to make educators feel secure. Ten (10) schools and one (1) university were visited, and a presentation elaborating the digital data collection process was made. Follow up emails supported the onsite visits.

When emails arrived at my digital mailbox, they were triaged. That process was undertaken the same day the emails arrived. Emails were initially cut and pasted to a Word document. Appended to the emails were consent and biographical forms that were downloaded. Original emails were deleted from the Internet environment within minutes of the transfer process. Digital data were stored on floppy disks; hard copies filed in a separate location. No digital raw data were stored in the computer memory.

Qualitative inquiry is the methodology that best promotes the " presence of voice in the text " (Eisner, 1991, p. 36), and explores topics where there has been little research (Strauss and Corban, 1990; Thomas, 2000). Classroom educators are often isolated and overloaded by the ever-growing demands of their role as teachers with the result that their voice is rarely heard beyond the classroom and staff room (Fullan & Hargreaves, 1996). This study sought to give educators an open forum to share their insights into email technology. I wanted to discover not only meaning amid the data, but also gain insights into participants' level of ease with the mechanics of email technology

At the onset of the study, what would ultimately emerge through patterns and themes was an unknown quantity. As data were combined and intersected, multilayered findings were discovered making for a fascinating exercise. Rossman and Rallis' (1998) work facilitated the data analysis by providing the framework (p. 176): Organizing the data; familiarizing oneself with the data; generating categories, themes, and patterns;

coding the data; searching for alternative explanations of the data; writing the report. Implications were elaborated within short-term and long-term time frames with student success as the benchmark. Trustworthiness and *methodological appropriateness* (Patton, 1990) were built into the design of this study by including triangulation, member checks, participant quotes, audit trails, a descriptive narrative, and a " rigorous credible exploration " of my focus of inquiry (Maykut and Morehouse, 1994, p. 153). Together, these features merged together to promote transparency – an essential characteristic of reliable research. Having incorporated recognized standards throughout the study, it is my hope that educators will be able to make use of these findings for their own research (Mischler, 1990). The sections that follow further elaborate how the research design was implemented.

3.3 Sample

> *Qualitative researchers may collect data in such a way as to illuminate the textured experiences and analyses of participants.*
> (Weis & Fine, 2000, p. 93)

Educators were the targeted population in the data collection process. For the purposes of this study, an educator is defined as any person who provides administrative, instructional, or any other educational services to learners. I chose to center my sampling on Quebec educators to see how the MEQ's redirection toward technology was affecting educators in the province. My focus of inquiry was on electronic mail, a communications technology that has gained enormous popularity in the last ten years. My experience as an educator has been primarily in Quebec and my familiarity with both the public and private systems facilitated my contact with educators. I did not work at the school board

while collecting data, eliminating any bias. Even though a large number of educators in the School Board Group signed up to participate (84), a little more than half (45) chose to continue the process. If some felt public pressure to participate, the privacy of the email process freed many of those participants to follow up or not without any consequences. By asking educators to respond to my study exclusively through the Internet, I obtained first-hand knowledge of their level of ease with email technology like no interview or questionnaire could have revealed. The ease or unease with which they responded spoke volumes. I sought to obtain maximum variation sampling (Lincoln and Guba, 1985) by soliciting multi-disciplined educators at the elementary, secondary, and post-secondary levels. Sixty educators (47 women; 13 men) ranging in ages from 21 to 59 with one to thirty-two (32) years experience elected to participate in this study. Participant anonymity was guaranteed by assigning each subject a number from 1 to 60. The participants originated from three different groups:

- The University Group (13 participants): Educators taking a class in a university Master's program of which I was also a participating student
- The School Board Group (10 schools: 8 elementary, 2 secondary for 45 participants): Educators working at a school board where I had received authorization to undertake my research study
- The B.C. Group (2 participants): Educators from British Columbia referred to me by a School Board participant recently arrived from B.C.

3.3.1 Particularities

Three anomalies were encountered during data collection. The first concerned two participants who were unable to attach the necessary documents to their email. One belonged to the University Group, and the other to the School Board Group. The former requested that the forms be faxed.

> ♦ I filled out the form and thought I was successful the second time but I guess not. You can fax the form to me here at school and I'll reply ASAP.
>
> Participant 5

The latter had enormous difficulty appending the attachment to the email so I opted to bring the documents to the participant's school personally. I enclosed a self-addressed envelope for the return of the completed documents.

> ♦ I'm having trouble getting the forms. It would be easier if you sent then to the school. Sorry.
>
> Participant 48

The second anomaly concerned the return of incomplete data. Eight participants returned either the email or the consent/biographical forms, but not both thus rendering their data unusable. The breakdown of those participants is as follows:

- Men (♂*) 1 (email)
- Women (♀*) 7 (4 consent/biographical forms; 3 emails)

* These symbols can be found in Tables 1, 2, and 3 on pages 51-52.

The third and final anomaly concerned one participant from the School Board Group who returned the email and the consent form but not the biographical data. I was therefore able to use her email but unable to chart her variables. A note to that effect accompanies Table 3 on page 52.

3.3.2 The University Group (13 participants)

The group originated from a class of graduate students in an English-speaking university situated at Montreal, Quebec. The students were enrolled in the faculty of education. I was a student in the class. All students were educators directly involved in education at the time of data collection. The course topic was research methodology. The course was offered in 2002. A pilot project dealing with our thesis topic was the final assignment. There were twenty-five students in the class (21 women; 4 men), and nineteen students chose to participate in my pilot project on email use (15 women; 4 men). The instructor also participated for a total of twenty participants (16 women; 4 men), for a participation rate of 77%. It was not my original intent to use the emails from the pilot project for this study however, the School Board Group presented some initial concerns that incited me to integrate this University (pilot project) Group emails. I therefore reread the group's emails and found that fifteen (15) would contribute valuable insights to my study. I then recontacted the fifteen (15) participants and asked them if they would allow me to reuse their emails, this time for my thesis study. Thirteen participants (10 women; 3 men) responded positively, and were then sent a 3-page package: an introductory letter, a consent form and a biographical form (Appendix B). When I received the university participants' completed forms, their emails were then included with the research data.

3.3.3 The School Board Group (45 participants)

I approached the School Board in June 2002 and authorization was granted in early July to undertake the research. I was asked to meet certain conditions:

- To have school principals who accepted my research sign a consent form
- To write a report upon the completion of the data collection
- To write a second report upon the completion of the research

Ten schools were visited in the school board for a total of forty-five (45) participants (36 women; 9 men). The process began in early September and I received the last email November 6, 2002.

3.3.4 The B.C. Group (2 participants)

A newly arrived School Board participant from British Columbia suggested a list of six former colleagues as potential participants for my study. Two educators (1 woman; 1 man) agreed to participate.

3.3.5 Variables

Specific variables were listed on the biographical form. Those variables were:

1. Gender
2. Role as educator
3. Level
4. Years as an educator
5. Age

The following three tables illustrate the distribution of those variables among the sixty participants. Gender appropriation appears in all tables (♀ women; ♂ men):

Table 1 – Task Distribution Among the Three Groups (60 participants)

	University (13)	**School Board** (45)	**B.C.** (2)
Pre-school Teachers (1)	♀ 1		
Primary Student-Teachers (1)		♀ 1	
Primary Teachers (30)	♀ 4	♀ 21 ♂ 3	♀ 1 ♂ 1
Primary Administrators (7.5)		♀ 6.5 ♂ 1	
Secondary Teachers (15)	♀ 2 ♂ 2	♀ 7 ♂ 4	
Secondary Administrators (.5)		♀ .5	
Post-Secondary Educators (3)	♀ 2 ♂ 1		
Community Educators (1)	♀ 1		
Consultants (1)		♂ 1 (.5 prim./.5 sec.)	

TOTAL: Teachers 51 Administrators 9

Table 2 – Gender and Level Distribution (60 participants)

	Pre-School	**Primary**	**Secondary**	**Post-Secondary**	**Community**
♂ (13)		5.5	6.5	1	
♀ (47)	1	33.5	9.5	2	1

Table 3 – Participant Ages and Years Teaching (59 participants*)

Ages	Years Teaching					
	0-5	6-10	11-15	16-20	21-27	28+
21-30	♂4 ♀15	♀2				
31-36	♀1	♂2 ♀3	♀2			
37-42	♀1	♀1	♀1	♀3		
43-48	♀1			♀3	♀1	
49-54			♀2		♂2 ♀3	♂3 ♀5
55-60				♀1		♂1 ♀2

* One School Board participant did not offer this biographical information.

3.4 Data Collection Methods

The data collection process was adapted to suit the needs of each group. Data collection entailed a two-tiered operation – an initial personal, onsite presentation to potential participants followed by the collection of the data over the Internet. Personal presentations were done for the University Group and the School Board Group. The B.C. Group was met online and all exchanges were done electronically.

The following sub-headings detail how the onsite presentations were carried out for the University and School Board Groups.

3.4.1 The University Group

It was under the banner of a pilot project that data was initially collected. The decision to include the data with the research came about many months later. A five-minute presentation was done during class and the data collection instrument was a transparency with the following headings: Request, Objective, Purpose, Anonymity, Question, Response, Pay Off, and my email address (see Appendix C). Following class, I sent an email via the class Listserv (electronic mailing list) to remind my classmates of my request as well as reach students who had been absent. Willing participants sent me an email describing their use of email. No consent form was necessary as the context was strictly a class assignment.

Because several students were also conducting pilot projects, there was an openness to support a fellow classmate. For the next three weeks, participants emailed me their reflections on email communication.

During the last class, I presented a general overview of the outcomes to my colleagues and instructor. The participants were again thanked for their support, and some implications were discussed.

3.4.2 The School Board Group

Further to receiving permission to collect data in July, I began the process in September. I first contacted principals whom I had met through a volunteering activity done the previous year and which was ongoing in fall 2002 as well. Five principals invited me to visit their schools and make a 5-minute presentation. Transparencies of the 3-page package (Appendix B) accompanied my five-minute presentation where the digital process was explained. The presentation followed a set procedure:

- Introduction and purpose of my visit
- Explanation of the data collection process
- Explanation of the consent/biographical forms
- Repetition of the process
- Q & A period followed by the passing around of a sheet to collect participant names and emails (Appendix D)

As my school visits increased, I realized that the difficulty for many educators was how to attach a file to an email so I focused my attention on that problem in my presentations.

By the end of September the flow of email responses was worrisome. Participants were still busy getting their academic year underway and my research was not uppermost on their list of things to do. I began to realize that relying exclusively on participants from the school board as my data source might be unwise. Without having a fixed number of emails for the sampling, I wanted a substantive quantity to permit the discovery of patterns and themes. It was at this time that I decided to ask the University Group for their support.

By the second week in October, I had only received approximately a dozen emails from the School Board Group. I then met with a second group of principals whose contact was facilitated by an employee at the school board. Following my presentation, three principals offered to support my research. Thirty-one (31) educators initially signed up with eventually twelve (12) educators supporting my study.

In summary, through these two groups of elementary school administrators, I obtained the support of 33 educators.

I then requested and received referrals to two high schools with twelve (12) educators eventually agreeing to assist me in my study.

3.4.3 The B.C. Group

Participant 41 from the School Board Group kindly offered to send emails to former colleagues in British Columbia and solicit their support for my study. Because the exchanges were done over the Internet and the participants lived on the West Coast, no onsite presentations were possible. Following are two emails from participant 41:

First message:

- I actually will use e-mail to let a few of my Vancouver colleagues know about your study as some of them are very computer literate and use the internet and e-mail as a primary way of contacting both students and parents.

Second message:

- I e-mailed a few colleagues out west and received four replies so far. Their names and e-mail addresses follow. As my replies roll in, I'll send them your way. Yet another way to use e-mail for educational purposes!!

3.4.4. Process Following the Onsite Presentations – Digital Data Collection

The electronic collection of the data was relatively similar for all three groups with only slight variations. The University Group was the simplest. I already had their emails so my goal was to obtain their consent/biographical forms. I sent the selected fifteen classmates a letter explaining my request. The thirteen who eventually agreed were then sent the 3-page package (Appendix B) that they completed and returned to my electronic mailbox. Twelve participants returned the forms within a month. Only one participant encountered difficulties attaching the document to an email. We then agreed to use the fax machine for the mailing.

With the School Board Group, an email was sent to each educator who had signed up further to my school presentation. The emails were sent either in French or in English,

depending on the participant's language of preference (11 – French; 49 – English) (Appendices E-a and E-b). The email thanked the participants for their support and reviewed the data collection process. Attached to the email was the 3-page package (Appendix B). Replying to the email with their own insights of email use as an educator was straightforward and caused few problems. However, the steps involved in downloading and reattaching the electronic document proved problematic for over 80% of the participants. Very few respondents were able to complete the digital data collection steps without sustained assistance. The problem became evident early on necessitating that I modify my presentations to better explain the steps involved. I usually received either the forms or the email but very rarely both documents together. Following is the set procedure that was laid out for participants to follow:

1. Open the researcher's email and read the message
2. Download the attached document
3. Open the document and complete page 2, the consent form, and page 3, the biographical form. The forms are programmed for easy access. Page 2 requires an 'X' or a '√' in four boxes, and filling in your name and the date at the bottom of the page. Page 3 requires boxes to be completed in a similar fashion. Space has been allotted for supplementary comments.
4. Save the document
5. Close the document
6. Attach the document to an email
7. In the email where you attach the document, write a brief description of your use of email as an educator

The B.C. group was asked to follow the same procedure. Because the suggested participants were computer literate, no transferring problems were encountered.

Further to my sending a first email, if no response was received, I sent a second request two weeks later (Appendices F-a and F-b). If the participant did not respond after the second request, I assumed they had elected not to participate in the study and no further contact was made.

3.4.5 Process Following Reception of Participant Email

Upon reception of a participant's email, the email itself was transferred to a Word document. The attachment was then downloaded and verified for the exactness of its contents. If any information was missing, an email was sent to the participant requesting the missing information. Original participant emails were deleted from the Internet environment within minutes of the transfer process. I then opened an electronic file folder for that participant, identified the folder with the participant's name and placed both the email and the forms in it. I then transferred the file folder to one of twelve floppy disks depending on the provenance of the participant – University Group (1); School Board Group (10 – one per school); B.C. Group (1). Copies of the email and the forms were printed and stapled together, and properly identified by provenance. The printed copies were stored in a folder duly identified with the participant's group. Digital and hard copies were safely stored away; no digital raw data were stored in my computer. When both the email and the forms had been completed as requested, I sent an email to thank the participant.

Numbers were assigned to each participant only when all the data were collected. Assignation was based on chronology.

3.5 Data Analysis Procedures

Repeated readings preceded data analysis to gain a certain degree of familiarity with the email contents. When specific units of data were identified as having relevant information, they were unitized (Lincoln & Guba, 1985) and assembled under headings that had emerged as appropriate. All data were treated in a similar fashion – a process known as Constant Comparative Method (Maykut & Morehouse, 1994). Recurring themes were identified; patterns were recognized. The entire process was based on emergence as the data was analysed. Gradually, ideas gained prominence and allowed me to discover the direction the study's outcomes would take.

3.6 Summary

A slow and methodical approach to data collection is fundamental to good research. Gathering data through the Internet is new to research methodology and the obligation to be patient and thorough are even more necessary in this new environment. I asked educators to reflect on a communication technology and then asked them to use that very same technology to communicate their reflections. Intersecting opinions and perceptions with the practical, the subjective with the objective, offered me a unique perspective as a researcher. Difficulties encountered by the participants throughout the data collection process gave me valuable insights that would eventually lend support to the findings laid bare in the data.

CHAPTER 4: OUTCOMES

4.1 Introduction

[E]verything said in an interview [email] is a story.
(Siedman, 1991, p. 64)

The effective communication of a story is one of Howard Gardner's (1995) central themes. Stories connect people and promote " the binding together of a community " (Gardner, p. 42). The participants in this study formed a community. My implication in the data collection and analysis processes made me an active member of this community because the notion of community is evolving from a concept of spatial networks to social networks where shared interests connect people (Wellman & Gulia, 1999). I immersed myself in understanding who made up this community and the stories that shaped their lives. One participant shared her very detailed story that went back more than fifteen years. My experiences as an educator and my journey with email technology intersected with the participants' accounts at regular intervals; 'ah yes' moments occurred frequently. Who the participants were and their insights form the basis of the next two chapters and to better understand their stories, some time needs to be devoted to identifying these storytellers.

4.2 Participant Storytellers (see Tables, pp. 51-52)

Of the sixty respondents, seventy-eight percent (78%) were women and twenty-two percent (22%) were men. Throughout the three groups, 67% of the participants originated from the elementary level, a fact that contributed to the larger female sample.

Participating educators spanned pre-school to university levels with 51 teachers and 9 administrators. There was a greater concentration of younger teachers under 30 years of age with five or fewer years of experience than any other segment of the educator population at 19 respondents. This finding indicates that the teaching profession is renewing itself as the older teachers begin to take their retirement. The next largest population segment was the 49-54 year-old grouping with twenty-eight or more years of experience at 8 respondents. These educators are on the cusp of their retirement; their example is providing a valuable role for younger educators.

Despite the sample tipping toward the younger group (21-42 with 15 years or less experience – 32 respondents vs. 43-60 with 16-28+ years experience – 24 respondents), I did not find greater ease with email technology with the younger group. Fewer than 20% of the respondents were able to complete the digital data collection process on their first try. The University and B.C. Groups displayed more ease; most members of the School Board Group encountered difficulties throughout the process. Despite clear explanations during each onsite presentation and more detailed explanations during later presentations as the problems became evident, many respondents seemed unfamiliar with the process of attaching an electronic document to an email. The documents were essential to the study so several emails were exchanged till as many participants as possible sent both the email and the forms. Eight participants did not return both documents thus rendering their data unusable in the study. Before reading the contents of the emails, I understood that difficulties using email technology, particularly the attachment function, was prevalent among educators. I undertook experimenting with other Email Service Providers to see if attaching documents was more complicated than with my Hotmail

provider. I found that the 3 or 4 providers I explored were very similar to Hotmail and involved a 2 or 3-step process. As one respondent aptly put it:

♦ I learned about e-mail by using it.

Participant 14

The participants were generous with their stories and openly divulged their position on email technology. Many acknowledged that their ease with email was lacking and hoped to improve the situation. The school board where I gathered 75% of the data was in the process of installing an email communication system to be made available to educators, students and parents. Workshops and practical applications will eventually allow reluctant email users to gain a surer footing with email technology, and communicate with a wider network because communication patterns evolve when email systems are implemented (Rice & Stanfield, 1994). What this outcome indicated is that many educators did not experiment with email at home and will only gain a certain degree of ease if the workplace makes it the preferred mode of communication.

4.3 Initial Observations from the Data

> *[F]ocus your efforts on the main part of the research report: the outcomes.*
> (Maykut & Morehouse, 1994, p. 156)

The emails sent to me by participating educators were rich with tales, and supported Baron's (2000) belief that " email encourages higher self-disclosure than either speech or writing " (p. 259). I believe participants divulged information that might have been awkward to reveal through other channels. Participant 43 offered such an example detailing her positive past experiences and her limited present situation with email. The following excerpt is a combination of quotes from her 2-page email:

> ♦I have no computer in my classroom. The computer available in the staff room is not functioning properly. The computer room is only available after school hours if the computer teacher is kind enough to leave the door unlocked. My colleagues have not expressed their interests in or intention to communicate through e-mail. Whenever I have computer work to do I have to do it at home on my personal equipment. No wonder so many teachers remain computer illiterate! Maybe if I stay long enough in the same school I may inherit an old discarded computer from the computer room!!!
>
> Participant 43

The frustration is palpable. Two more excerpts further support Baron's (2000) claim that email incites disclosure.

The following participant revealed that she had been using email for about ten years but had never sent an attachment before participating in this study. I found it intriguing that one could use email for such a long period of time and never want/need to attach a document. The attachment feature is one of email's real selling points, one that won me over soon after I began using email in 1998.

> ♦Attaching a document was a new thing for me. I have used e-mail for quite a while now, since the early 90's when it was first becoming common.
>
> Participant 41

The final excerpt is without pretension. Considering the investment undertaken by schools and school boards to assist educators with technology in the last few years, and the general thrust toward educator computer literacy, this comment was very revealing.

> ♦I am not too 'swift' with the computer. Unfortunately, I do not use e-mail very much as an educator.
>
> Participant 25

This small sample demonstrates the diversity of the sixty stories, each story contributing to a web of storylines that allowed me to uncover patterns and themes.

Despite email's more relaxed writing environment, the process of participating in a data collection process undertaken over the Internet reaffirmed the fragility of the human condition as purports to change: " [N]o individual appears to adjust well to change that is too rapid ... change must ... proceed moderately " (Cartwright, 1985, p. 2). Email technology is still a double-edged sword for many educators – they recognize the advantages of email but do not have all the tools to comfortably manipulate both the hardware and software. An example of that duality occurred during data collection. One participant was enthusiastic about participating in the research, but because she could not download the attachment, she chose to do both parts of the data collection process (email and forms) with pen and paper.

Initial analysis of the data placed most participants in a positive or negative camp.

- I rely on email and the internet to stay connected to the outside world.

  Participant 4

- In summary, email will be great for me later (maybe when i retire) but as of yet I can't seem to make good use of it.

  Participant 47

Subsequent readings further divided the two initial groups into four groupings. Four respondents felt that email was neither positive nor negative but an amalgam of both features.

- It has facilitated communication ... though also created occasional doubling up of info coming from everywhere and that can be time consuming and unnecessary.

  Participant 31

A few participants were reluctant users despite their support of the technology.

- I hope this works - I use email for simple things, but am not too familiar with attachments, or anything terribly complicated. I guess that tells you about my use.

Participant 32

The table below indicates the perception of email by the 60 participants.

Table 4 – Perceptions of Email

Positive	48 → 80%
Negative	4 → 7%
Positive/Negative	4 → 7%
Reluctant	4 → 7%

The numbers revealed an overwhelming support for email technology, yet the numbers only partially exposed the human dimension of adapting to a relatively new technology. Throughout the sixty electronic mailings, participants lucidly expressed their level of comfort with the technology so that distributed throughout these four groupings emerged three distinct types of emailers:

1. Enthusiastic emailer

   - I LOVE E-MAIL! It has made my life so much simpler.

   Participant 13

2. Frustrated emailer

   - I am a reluctant e-mail user. I found e-mail very time consuming - especially with all the junk mail and endless jokes. I also feel it is elitist to expect every family or student to own a computer with e-mail. Only in North America!!!

   Participant 30

3. Bewildered emailer

- Sorry to be so long getting back to you re. your survey, but we had trouble with the internet the first time we tried to write to you and lost everything. So here goes again. I am not sure how useful my info. will be to you as I am far from an expert at e-mail. In fact in order to send this email to you, I will need my son's assistance badly.

Participant 42

Fourteen percent (14%) of the respondents continued to be either uncomfortable or resistant to email technology. Age, gender and experience did not appear to have any bearing on these findings. There was a balanced mix of all three variables among participants in this segment. Eighty percent (80%) of educators appreciated using email and valued its multiple advantages. It is worth noting that groupings at either end of the email technology continuum were adamant about their stance – the enthusiastic emailer was a flag-waving supporter of the marvels of email while the irritated emailer was equally staunch about the unnecessary hullabaloo.

4.4 Results from Unitizing the Data

> *[Q]ualitative researchers study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of meanings people bring to them.*
> (Denzin & Lincoln, 1994, p. 2)

Having taken an aerial shot of where participants situated themselves on email technology, zooming in to get a closer look at the data by unitizing its contents opened the door to understanding the participants' perspectives. Twenty-six (26) categories emerged under the positive rubric, and thirteen (13) under the negative heading.

Table 5 – Categories Generated from Data

# OF COMMENTS + %	POSITIVE	# OF COMMENTS + %	NEGATIVE
40 - 67%	Contact friends/family	12 - 20%	Limited or no use as educ.
25 - 42%	Peer support	8 - 13%	Less time for telephone
11 - 18%	Heightens communication	8 - 13%	Fewer F2F exchanges
10 - 17%	Advantages of email	4 - 7%	Swamped with info.
6 - 10%	More confident to 'speak up'	3 - 5%	Junk mail
4 - 7%	Community building	2 - 3%	Invasion of privacy
4 - 7%	Leaves a paper trail	2 - 3%	Diminished letter writing
4 - 7%	More effective employee	1 - 2%	Emails from Listservs
4 - 7%	Contact parents	1 - 2%	Jokes
3 - 5%	Time management	1 - 2%	Less attention to grammar
3 - 5%	Improved writing skills	1 - 2%	Email tag
3 - 5%	Travel aid	1 - 2%	Distracted by new emails
2 - 3%	Paperless environment	1 - 2%	Unease with email tech.
2 - 3%	Global connectivity		
2 - 3%	Help students – homework		
2 - 3%	Introduction Service		
2 - 3%	Online greeting cards		
2 - 3%	Listserv member		
2 - 3%	Facilitates hiring process		
2 - 3%	Intensified relationship with husband		
1 - 2%	Expands learning boundaries		
1 - 2%	Access to pedag. materials		
1 - 2%	Genealogy		
1 - 2%	Assistance to students – ill		
1 - 2%	Online shopping/promotions		
1 - 2%	First contact with business		

4.5 Observations from the Unitized Data

> *[I]t is not the features of the technology alone,*
> *but rather the ways in which those features are*
> *used in human environments that shape its impact.*
> (Sheingold, 1991, p.18)

What stands out at first glance is the popular use of email as a 'social tool' (Ziv, 1996) among the 60 participants ***to contact family and friends***. At sixty-seven percent (67%), email can be qualified a popular communication tool when used to contact auntie May in South Africa or cousin Sue in Vancouver. The real losers in this email whirlwind are the long distance providers. With so many respondents appreciating the ability to connect with friends and family around the world, the reduced cost and in some cases, the cost-free connections, make this communications network a real winner.

While still examining the categories under the Positive rubric, the ***peer support*** category combined with ***heightened communication***, and ***community building*** make for an interesting trio at 67%, and again reflects the use of email as a social tool. I was delighted to discover that educators were relying on each other for support. That finding reinforced Etzioni & Etzioni's (1999) assertion that communities that have higher access are more likely to form satisfying relationships, and that offline teams that extend their teamwork to an online environment have a heightened sense of bonding. It further indicated that educators were integrating the MEQ's new reform where team building is paramount.

If email as a social tool was the big winner, email as a functional tool was also very appreciated. Under the Positive rubric, I selected 10 categories that indicated functions carried out through email (in the order found on Table 5, p. 66):

1. Contacting parents (4)
2. Assisting in travel plan (3)
3. Helping students with homework (2)
4. Sending online greeting cards (2)
5. Facilitating the hiring process (2)
6. Accessing pedagogical materials (1)
7. Researching genealogy (1)
8. Assisting absent students due to prolonged illness (1)
9. Shopping online – promotions (1)
10. Making initial business contacts (1)

Eighteen (18) participants selected these 10 categories. Clearly educators appreciated the functional aspects of email and exhibited a diversification in their choices. From sending online greeting cards to planning a trip, email had entered the lives of educators.

In the Negative column, 20% of educators ***rarely if ever used email in an educator capacity***. Closer study of these respondents' emails revealed valuable information. One quarter of the participants did not use email as a social tool, but three quarters did. In other words, 75% of these participants comfortably used email to send a friendly message yet did not use the same technology to facilitate their role as an educator. I paused when this outcome emerged. If lack of ease with the technology was not the impediment, what was? What prevented competent email users from applying their technology skills to the workplace? Implications from this outcome directly impact the successful implementation of the MEQ's new educational reform and are elaborated in the next chapter.

Still analyzing the Positive results, only 5% of educators used email to assist students – one educator (2%) supported students when ***absent due to illness***, and two educators (3%) were available to ***help students with homework queries***. Supporting students with homework implies that an educator has a computer at home, is connected to

the Internet and is prepared to be a supportive educator outside of school hours. Four educators (7%) indicated that they contacted parents through the Internet.

In the Negative column, the categories ***less time for telephone exchanges*** and ***fewer F2F exchanges*** are significant. The same three male respondents selected both categories, and because there were only 13 male participants in the study, the percentage of male dissatisfaction jumps to 23% compared with the female level of 11%. Proportionately, the men's opinion is worth noting because males are not usually identified as the gender concerned with fluctuations in communication patterns. Their comments were strongly worded indicating their solid position. Like telephone and F2F exchanges, letter writing is considered by many a more personal channel for communication. I therefore did the exercise of combining these two categories with the ***diminished letter writing*** category to arrive at a combined total of 29% thus making it, potentially, the highest level of dissatisfaction among the 60 respondents.

Further to this outcome, I went back to the ***peer support*** category and verified the gender of each respondent. Would men value online peer support as much as women? Would men find email an unacceptable medium to foster personal relationships and use it solely as a functional tool? The findings revealed a pattern. Proportionately, men used email for peer support networks more than women. It is important to remember that there were 13 men and 47 women in the study. Six men noted that they appreciated peer support networks for 46% and 19 women for 40%. The pattern which began emerging was of men missing the contact found in F2F, telephone, and handwritten communications, and seeking to recreate that feeling of fellowship through online peer support groups. Much of the research on email gender use paints a different picture:

women foster online support groups while men create a more adversarial climate (Herring, 1996; Tannen, 1994). This study indicates a different orientation. This outcome seems to be in support of Wellman and Gulia (1999) who believe that despite gender differences, men and women can equally benefit from the emotional support and companionship provided by the computer's potential as a social tool.

The outcome ***more confident to speak up*** under the Positive banner with 6 respondents is an important disclosure. Educators who rarely speak up, who are all too often left on the periphery of organizations are deriving enormous benefit from email technology. In the absence of gender and ethnicity cues, shy people are more inclined to open up (Whitley, 1997). Research has shown that email enables timid people to become more visible and through their heightened visibility, they contribute to the democratization of organizations (Romm & Pliskin, 1998).

Three respondents made reference to ***improved writing skills*** under the Positive heading. With email being the most popular form of written communication today, it is understandable that its many users have improved their writing skills. Educators tend to have an ease with productive skills which may explain why so few made reference to this benefit. However, as I read the emails, style, syntax and grammar gained prominence. The participants offered email messages without realizing that the form of those messages was as revealing as their contents. Three emails merit analysis. The first is reproduced in its entirety to help the reader get a sense of my observations. Both the content and the form of this email are under analysis.

♦dear louise,

usinbg the internet has always been of great interest to me, moreso than email. first off, i don't type that well so writing letters etc. is a challenge. at home, my system is slow so i don't use many hours. opening letters does take too much time.
i still haven't found enough places and/or people that I need to communicate with. i'm still trying to deal with my own workload.
i taught integrated science and had an email account there. needless to say i piled up a substantial backlog of mail I never could attend to.
in summary, email will be great for me later (maybe when I retire) but as of yet, i can't seem to make good use of it.

sincerely yours,
(first name)

Participant 47

What initially caught my attention was the juxtaposing of the formal letter style alongside the obvious violation of spelling and certain writing rules – formality in a tug-a-war with informality. Capitals are absent, but punctuation is used correctly. Baron (2000) stated that the email language form is presently in a flux. Lee (1996) claimed that deviations from grammar rules reflect efforts to visualize talk, and Lee also discussed the hybrid nature of email – 'written talk' as so many researchers have referred to electronic discourse. This participant attempted to use appropriate email style by 'letting go' of established writing conventions. The participant's confusion is obvious yet denotes awareness of writing in a new medium. How to go about it still appears to be a mystery for this participant.

The second example follows with the next respondent's opening sentence:

♦I do not know what I would do if I did not have email.

Participant 29

This participant is trying to apply formal letter writing rules to a medium that advocates imitation of the spoken language – brief, contracted, punchy. The lack of contractions

contributes to making the language somewhat stilted. Here again, this email supports what research has shown – emailers are reluctant to abandon established writing conventions (Hale & Scanlon, 1999).

The third and final example looks at a participant who used capitalization to emphasize different cultural involvements.

> ♦ I am TEAM-COORDINATOR of the … I am now using e-mail extensively with THE ADMINISTRATION TEAM, MUSIC STAFF, and all CHORUS MEMBERS.
>
> Participant 57

Repeated capital use in emails is reserved for acronyms, initialisms, or to denote loudness. Capitals 'scream' when used in this manner. Electronic discourse has its own set of rules, and for those who remain unsure as to the parameters of this writing style, I suggest Hale and Scanlon's *Principles of English Usage in the Digital Age*. A more complete listing can be found in the Reference section of this document.

Baron (2000) looked at four aspects of electronic discourse to try and understand why writing conventions were in such a flux. Her analysis demonstrates the hybridity of email messages (pp. 250-251):

1. Social Dynamics ⇒ **writing**: physical distance between emailers

2. Format ▶ ***hybrid*** ⇒ **writing**: email is durable
   ⇒ **speech**: typically unedited

3. Grammar – Lexicon ⇒ **speech**: heavy use of 1st and 2nd person pronouns
   – Syntax ▶ ***hybrid*** ⇒ **writing**: high adverbial frequency
   ⇒ **speech**: present tense; contractions

4. Style ⇒ **speech**: low formality; expression of emotions (e.g. flaming)

The importance of having ***a paper trail*** was listed alongside having ***a paperless environment*** under the Positive heading. Both are benefits of email technology. Interestingly, all four participants who appreciated the possibility of leaving a paper trail were administrators, three in the School Board Group and one in the University Group. Teachers were the participants enthusiastic about a paperless environment

- I used to work at a school where the elementary coordinator would email the staff teacher newsletters, puzzles … I liked that better than having to sift through numerous messages every day.

  Participant 28

- I email my students their assignments, that saves paper and photocopy time for me.

  Participant 56

This last participant was also one of two respondents who supported students with their homework queries. This email is important because it illustrates two educator uses of electronic mail: emailing assignments (entails a two-way understanding of how to download and attach electronic documents) and helping students with homework questions. Implications from these email uses are discussed in the next chapter.

Under the Positive rubric, participants mentioned ***global connectivity*** twice. Considering mass media's focus on globalization, McLuhan's omnipresent 'global village', and the MEQ's thrust on a 'networked community', I was perplexed by that limited reference. Most probably educators felt part of the global connection with their international use of email to contact family and friends and did not see the need to make a separate entry.

Under the Negative rubric, the categories were fewer but those who contributed to them were very adamant about their frustrations. Of the four participants whose overall perception of email was negative (see Table 4, p. 64), two were men and two were

women. Weighted results indicate a higher level of dissatisfaction among the male participants (15%) than the female respondents (4%).

4.6 Summary

Educators expressed their appreciation for email technology: time and cost efficiency, immediacy, asynchronicity, accessibility, attachments, networking – personal and professional, and the ability to extend F2F teamwork to the online environment.

Participants also discussed the drawbacks that accompany email technology. Overall, educators found that the benefits of email outweighed the disadvantages.

Elucidating the outcomes is a prerequisite for understanding the implications of email technology in the learning community. The focus of this inquiry process was to discover how email technology was affecting educators in the province of Quebec. Interconnecting the outcomes can now be woven into meaningful implications.

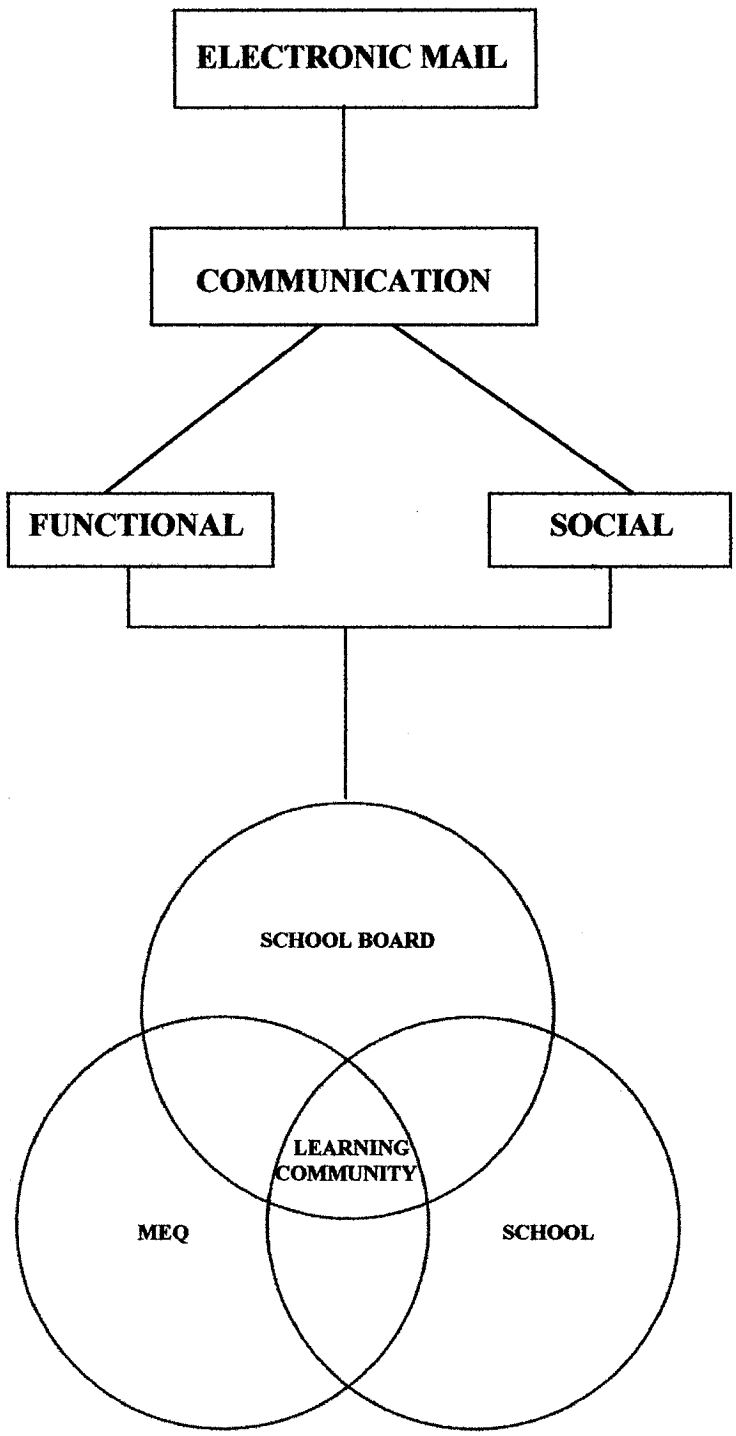
CHAPTER 5: IMPLICATIONS

5.1 Introduction

> *Groups, not individuals, are the fundamental unit of work in modern organizations.*
> (Finholt and Sproull, 1993, p. 431)

Education is community-based. Spatial networks once delineated the learning community, but those markers have been moved since the onset of digital circuitry. The Internet and electronic mail have created new and different communities, communities formed by social networks where shared interests bring people together. This change is redefining how the socialization process evolves. Marshall McLuhan foresaw the enormity of that paradigm shift in 1974: " Unlike previous environmental changes, the electric media constitute a total and near instantaneous transformation of culture, values and attitudes " (McLuhan cited in Benedetti & Hart, 1996, p. 22). The very notion of such profound change taking place within a compressed time frame implies multiple societal hurdles. This study has shown that adapting to electronic mail technology has presented some challenges for many educators. To better situate the reader with the multilevel implications of this research, a framework has been designed. The many constituents involved in the learning/teaching process and the different levels that constitute educator communication patterns make up the framework found on the following page.

Figure 2 – Implications Framework



5.2 A Framework to Guide the Reflective Process

Reflection may be the pivotal way we learn.
(Bennis, 1989, p. 115)

The MEQ's timetable for the new reform makes 2003 an ideal time to step back and reflect on how well the reform has been received by learning communities (Appendix A). The calendar indicates that Cycle Three (grades 5 and 6) at the Elementary level is nearing completion of the new reform's application phase, while Cycle I at the Secondary level has been slowly integrating the changes. The technology component of the Quebec Education Program is the subject area under consideration in this research and implications will be limited to that area of study.

My inquiry process revealed that the MEQ has not designed a program of study for students to acquire technology skills. From the MEQ perspective, technology is meant to be used as a tool to facilitate cross-curricular competencies. That belief assumes that learners have already acquired sufficient technology skills to be able to apply them. Where would they learn those skills if not at school? Far too many schools do not have a teacher assigned to teach technology, and this study has shown that most teachers have inadequate skills to teach computer literacy to learners. Without a program of study to teach basic skills to the student population, the implication of networked learning communities throughout Quebec as laid out by the MEQ does not appear realistic and will ultimately marginalize learners. I propose that the MEQ investigate programs of study outlined by other provinces or states. I would propose analysis of the state of Texas' Essential Knowledge and Skills (TEKS). The following website gives a comprehensive overview:

[http://www.tea.state.tx.is/teks/]

The reflective process continues with the intersection of educators, the school environment and the MEQ reform. Educator teamwork underpins the successful implementation of the reform. Two-year cycles (exception: Cycle 2 at the Secondary level – 3-yr. cycle) where competencies begun in one year are consolidated in the second year define the new learning/teaching experience. Educators now need to extend themselves beyond the walls of their classroom and the one-year time frame. Teamwork is an ongoing reality between level and cycle teachers, and the outcomes from the study indicate that educators are not using email to extend offline teamwork to online virtual teamwork. The notion that virtual work supports problem solving by eliciting more focused and purposive communication explains the MEQ's belief in ICT applications in cross-curricular settings (Jonassen and Kwon, 2001). However, twenty percent (20%) of educators expressed limited or no use of email in their professional capacity. The following excerpts reflect the breadth of the problem:

- I have not used email to plan or communicate with other teachers in the school. Many teachers are still not "on-line" or computer literate enough to make decent use of email, internet or other resources.

  Participant 52

- Through my e-mail account I simply keep in contact with family and friends. If by chance these friends of mine are educators, we don't really discuss our professions through our messages.

  Participant 16

- For the last three years I have been asking/waiting to be connected in my classroom; through a series of unfortunate timings and decisions, I am still waiting, but my principal has submitted the request and I am optimistically, thinking it should happen soon. When I am connected, I fully expect to use the e-mail to communicate with other teachers in the school rather than leave them notes in their boxes.

  Participant 24

- I would like to use email to communicate with parents rather than by phone, but unfortunately, many of our parents don't have access or do not want to communicate via email.

Participant 28

- I will rarely communicate with teachers from other schools with email, but I certainly should since it's quite difficult to reach a teacher during the day.

Participant 33

- We used to have an email address at school where we could communicate with colleagues, but I am not even sure they still are in use.

Participant 51

Analysis of these six excerpts indicates that the problems are not unidirectional. Some educators appear unable to use email because of inadequate training and/or equipment, unwilling partners and in several cases, a school culture that has not prioritized networking communities through technology. School leadership has the authority to facilitate the process of transition toward a culture where technology-directed communication patterns are the modus operandi. The data revealed that administrators are daily users of email and that their communication patterns have been modified with the advent of email technology. Without a concerted effort by school leadership to promote educator computer literacy, the implications are that the new reform will take far longer to be implemented, and the calibre of the implementation process might be jeopardized. The expertise required by educators to support the technology component of the new reform is essential and cannot be overstated.

On a personal note, my support of educator accessibility to technology in schools is a priority. Research indicates that virtual teams contribute positively to social interactions and community building. Communities that have a higher amount of access

are more likely to form satisfying relationships. This increased access is made possible by the formation of hybrid teams, ones that combine offline F2F exchanges and online interactions. Hybrid teams heighten community members' sense of bonding. As a recently appointed school administrator, I now have the opportunity to be a leader in action and facilitate educator computer literacy.

Having looked at learner, educator, and administrator constituents in the learning community, the school board implication in the facilitation of a technology-friendly culture is vital. Without a firm commitment by school boards to promote networked communities, the efficacy of implementation within schools remains doubtful. The school board where I conducted my study had recently installed an email communication system and many educators were hopeful that new communication patterns would evolve with this new thrust toward networking.

> ♦My communication patterns as of late (since the first class e-mail system has been recently put into action within the … school board) have improved somewhat and I think will improve that much more if all teachers on our staff use it on a regular basis. If there are even a few people on a staff as small as ours who will not use it, there is a deficiency in the process and to me the purpose is lost.
>
> Participant 21

> ♦ [The School Board] has now established a new e-mail account system for all employees. On which computer will I access my new e-mail account? With whom will I communicate? Maybe if I stay long enough in the same school I may inherit an old discarded computer from the computer room!!!
>
> Participant 43

The general tone from participants was reflected in these two emails – hope and reticence. Negative past experiences created a mood of doubt among many educators. The data indicated that many educators were reluctant email users, however, many were

eager to join networked communities despite being held back by limited resources. School boards that install email communication systems are sending a clear message to educators: we believe that email technology will facilitate the networking of communities. Research supports email communication systems in organizations and has found that new communication patterns evolve when they are implemented. They foster greater equality of participation and a redefinition of community. Participation in community is heightened and commitment to the organization is enhanced. The process of implanting email systems in schools will require collaboration at all levels of the learning community.

Earlier in chapter 4, the outcomes indicated that educators appreciated social uses of email and that functional uses also facilitated their lives. Sproull and Kiesler (1992) studied the effects of organizational email systems and identified two levels: the technical *first level* effects where productivity and efficiency are highlighted, and the *second level* effects where the social structure of the organization is impacted. For participants who were frequent users of email, functional uses within the organization had the upper hand:

- Being able to use email both to receive and transmit [documents] makes me a more effective and efficient administrator. I have even found myself depending on email for functioning. When my system is down, so am I.

  Participant 18

- The main way that I use email as an educator is that I am in several educational mailing lists which I find are quite useful.

  Participant 19

- I use email for work once in a while to communicate with different organizations. I will rarely communicate with teachers ...

  Participant 33

Manifestations of *second level* effects were rarely seen in the data and that is to be expected. Had my research been done with the School Board Group in the fall of 2003, one year after the implementation of the email communication system, I believe very different outcomes would have been found. Research has shown that *second level* effects will eventually be seen within the school board: flattening of the hierarchy due to direct communication between employees at different organizational levels, communication between people who have never communicated before, and emerging networks. With time, the problem-solving techniques that accompany *first level* competencies will give way to interpersonal-rich, *second level* social skills. The implication is that when communication structures change, new communication patterns are created.

5.3 First Among Equals – Impacting Communication Patterns

> *Email is creating a totally new, global social fabric.*
> (Negroponte, 1995, p. 183)

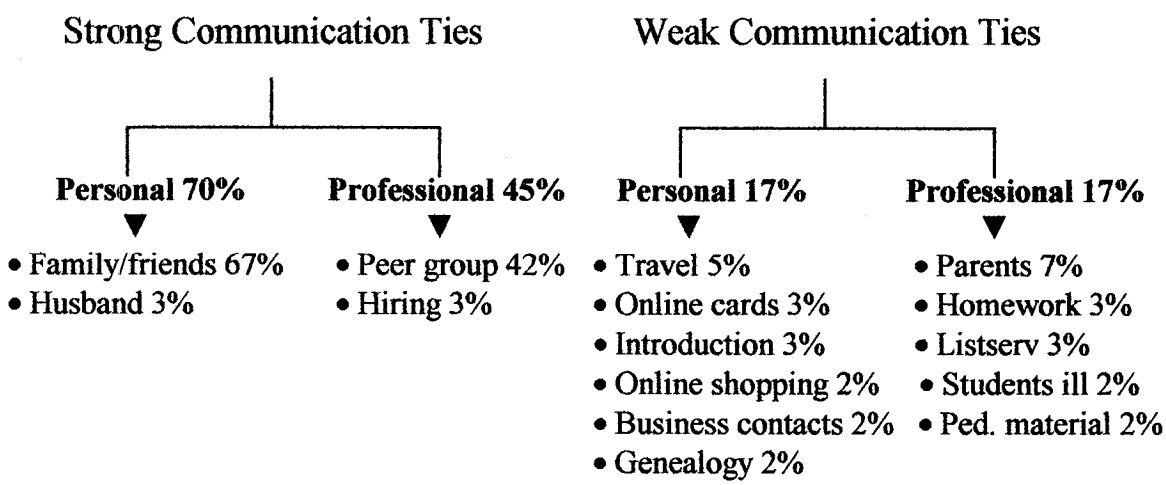
Many participants expressed regret with the time spent triaging and responding to emails. Eighteen (18) educators lamented the time email took away from the telephone, F2F contacts and letter writing. For many, email continued to be a communication tool that was viewed from a reductive perspective.

It is Granovetter (1973) who explored weak ties in communication. The notion of strong and weak ties is useful in discussing communication patterns. Wellman and Gulia (1999) found that people in North America have approximately one thousand interpersonal ties. Fewer than a dozen are intimate and less than fifty are qualified as *strong ties*. That leaves approximately 950 connections as *weak ties* – infrequent communication contacts. The authors believed that weak ties, " are important sources of

information, support, companionship, and a sense of belonging " (p. 350). Rheingold (2000) seconded Wellman and Gulia's (1999) viewpoint on the importance of weak ties in the virtual community: " Weaker ties multiply people's social capital, useful knowledge, ability to get things done " (p. 361). Wellman and Gulia went on to say that, " the ties people develop and maintain in cyberspace are much like most of their 'real-life' community ties: intermittent, specialized, and varying in length ... Thus while *online* ties may be specialized, the aggregate sets of ties in *virtual communities* are apt to provide a wide range of support " (p. 353).

Email extends communication by offering new ways of nurturing intimate and strong ties, and creating and maintaining weak-tie networks. The study indicated that educators used email to nurture strong ties both personally (friends and family – 67%), and professionally (peer support – 42%). What was far less developed by educators were the network-rich weak ties.

Figure 3 – Participant Communication Patterns (See Table 5, p. 66)



Results clearly indicated that educators have not explored the extensive networks found within weak ties. Research has shown that weak ties not only sustain networks, but also dominate the ensemble of communication patterns for North Americans at 95% (Wellman and Gulia, 1999). For Quebec educators, neglecting weak-tie networks could lead to consequential short-term implications:

- Failing to successfully apply the MEQ's new reform
- Failing to effectively serve two key constituents of the learning community – students and parents

Email was designed to intensify connectivity, and if numbers are to be considered, 14.9 billion emails sent daily in 2002, and a projected 35 billion in 2005 qualify email as first among equally important communication tools (Channel One, 2002). Because teachers are central to the learning/teaching process, their need to avail themselves to email's extensive networking potential will ultimately define their efficacy as professionals in a technology-oriented culture. That redefined professionalism will need to converge with other constituents in the learning community to attain one goal – the successful integration of students into the workforce. The long-term implication of failing to attain that goal successfully will be a compromised competitive edge in a world defined by globalization.

5.4 Summary

Rule # 1: Insist that communication flow through e-mail.
(Gates, 1999, p.74)

Reflecting on the outcomes and implications revealed in this study is of vital importance at this juncture in the MEQ's integration and application phases of the new reform. Elementary cycles are nearing the end of their application phase and Secondary cycles are embarking on the process (Appendix A). Decisive, proactive leadership in action to address the gaps in technology discussed in this study will ultimately impact on the calibre of Quebec's high school graduates.

CHAPTER 6: CONCLUSIONS

6.1 Introduction

It takes time to install the technology into
our lives and our lives into the technology.
(Heim, 1998, p. 6)

Vinton G. Cerf, co-creator of the Internet did not initially grasp the magnitude the Internet would have on global connectivity (Cerf, 1999). The Internet and email have redefined communication patterns among its users and created networks that have enlarged upon the notion of community. Since 1998, the Internet and email have become an intrinsic part of my life and have redefined my communication patterns. This study has shown the extent of email's penetration globally juxtaposed against the notion that change is a gradual process even though technological change requires a more rapid adaptation. Herein lies the dilemma educators have revealed in this study.

6.2 Purpose of the Study Restated

Technology makes the world a new place.
(Zuboff, 1988, p. 388)

Revisiting the study's focus of inquiry and the questions generated from that inquiry process seem appropriate at this time. I was initially curious to discover if educators used electronic mail, the frequency of use and to what ends. These are valid queries in a technology-oriented, team-based education program. The study allowed me to discover how email had altered communication patterns among educators. Questions generated from my focus of inquiry – *The influence of electronic mail on communication patterns among educators* – can now be answered.

1. **How extensive is email use among educators?**

   Figure 3 on page 83 demonstrates that educators have explored strong ties, but neglected weak ties. A further breakdown revealed that administrators maintained a greater balance between strong and weak ties than did teachers. School leadership needs to modify how messages are communicated intraschool – from paper to digital – for these outcomes to change.

2. **To what ends are educators using email?**

   Educators are using email for social and functional purposes. Due to unaccented weak-tie networks, changes in communication patterns are less visible among teachers than administrators. Socially, they are using email to contact friends and family as well as maintain peer support networks. Community building is appreciated by 7% of the educators even though only one respondent praised the advantages of virtual teams.

   ♦ Our virtual team is connected through various systems and one of these is e-mail. We would be lost without e-mail. It has changed my life for the better.
   Participant 23

   Eighteen (18) respondents described functional uses. Half of those uses were unrelated to their role as educators such as researching genealogy and sending online greeting cards. Very few participants mentioned uses that were related to their educator role. Email has not yet become integral to the lives of teachers so that functional uses such as contacting parents, helping learners with homework, and sending work home because of illness were isolated examples in this study.

3. **Is email facilitating the learning/teaching process?**

Very simply, for those using email as a facilitating tool, the answer is *yes*. The problem, of course, is that too few are using email in this capacity.

> ♦ I use it for teaching in the following ways: communicating with colleagues at my school regarding scheduling, upcoming events, committee discussions and student evaluations; communicating occasionally with my administrator; receiving e-mail from students and students' parents; receiving (occasional) assignments by e-mail from students ...
>
> Participant 59

> ♦ I teach 4 days a week (job-sharing) and my teaching partner and I use e-mail once or twice a week to communicate what is happening in our classrooms.
>
> Participant 60

The extent and diversity of email use by these two respondents was broader than other participants in the study. It is interesting to note that these participants made up the B.C. Group.

4. **Are schools facilitating Internet applications such as email?**

Participants had varying opinions on this question. Consensus pointed to school leadership and the belief that leaders need to be vocal advocates of technology. The process of facilitating networked connectivity is very real among administrators; translating that vision appears to be a long-term reality. School boards that install email communication systems are supportive of research in ICT, and the MEQ's focus on networked communities.

5. **Are educators extending their offline teamwork to online virtual teams?**

   The answer is a dismal *no* for the majority of educators in the study. Far too many educators have not yet made email their tool of predilection to facilitate teamwork.

6. **Is the notion of 'virtual community' real for educators?**

   I believe most educators are comfortable with the idea of 'virtual community'. Peer support groups were very much appreciated by 42% of the sixty respondents and many educators were on educational mailing lists.

6.3 Limitations of the Study

> *Because you construct the study and because you ask the questions, becoming aware of your perspective (your assumptions) with its built-in interests, biases, opinions, and prejudices is an ongoing task.*
> (Rossman & Rallis, 1998, p. 27)

Even though this study was rooted in phenomenology with ethnographic overtones where the researcher-as-instrument was the ideal tool to gather primary data, limitations due to the author's novice status are probable (Anderson & Arsenault, 1998; Lincoln & Guba, 1985; Maykut & Morehouse, 1994). Maintaining a balance between subjective and objective perspectives continues to be an inherent challenge to qualitative researchers. Digital data collection is a relatively new methodology in qualitative research and this research design may not have anticipated various limitations. Some participants may have shied away from participating due to their unease with digital communication although studies have shown that email encourages self-disclosure more

than traditional writing or speech (Baron, 2000). The computer itself may have discouraged potential participants thus causing the sample to be skewed.

- [Y]ou should take into account the fact that non experts such as myself have probably not responded.
  Participant 42

In addition, this inquiry was of an open nature because very little research has been done on the subject of electronic mail and educator use. Navigating in uncharted waters might have incurred missteps.

After approximately forty emails, redundancy in the data began appearing (Lincoln & Guba, 1985). Capping the sample size at sixty participants seemed appropriate however, that decision may have influenced the outcomes. On a final note, my personal bias toward electronic mail may have influenced the outcome of the research. I am a daily user of email and find it a wonderful complement to other communication technologies.

Supplementary research dealing with online teamwork might prove beneficial to educators in Quebec. Collaborative work is woven into the new reform and discovering if educators are transferring email technology to a teamwork setting could facilitate the implementation of the new reform. Further research might also revolve around network building and the impact gender could have on such networks. It would be interesting to delve into online networks built by women compared to those built by men.

Email is a powerful person-to-person tool. Discovering how it might enlarge and redefine the notion of community could only enrich the learning environment.

6.4 Concluding Remarks

Technology is the campfire of the global village.
(Rossetto,1996, p. 184)

Technology at the heart of the global village conjures up several images: a world that can be circumvented in seconds; a world energized by digital circuitry; a world built on the notion of community. Technology was present at every step of this inquiry process. Electronic mail technology was not only the focus of the inquiry but also the medium used to collect the data. The many authors and researchers who guided my journey, the participants, and I sat around the campfire and listened to each other's stories. That discovery process was deeply gratifying. It allowed me to gain a measure of clarity to better meet educator needs, and it is my firm wish that emergent outcomes and implications will shed some light on an area still new to many and that this knowledge will be of value to researchers and practitioners alike.

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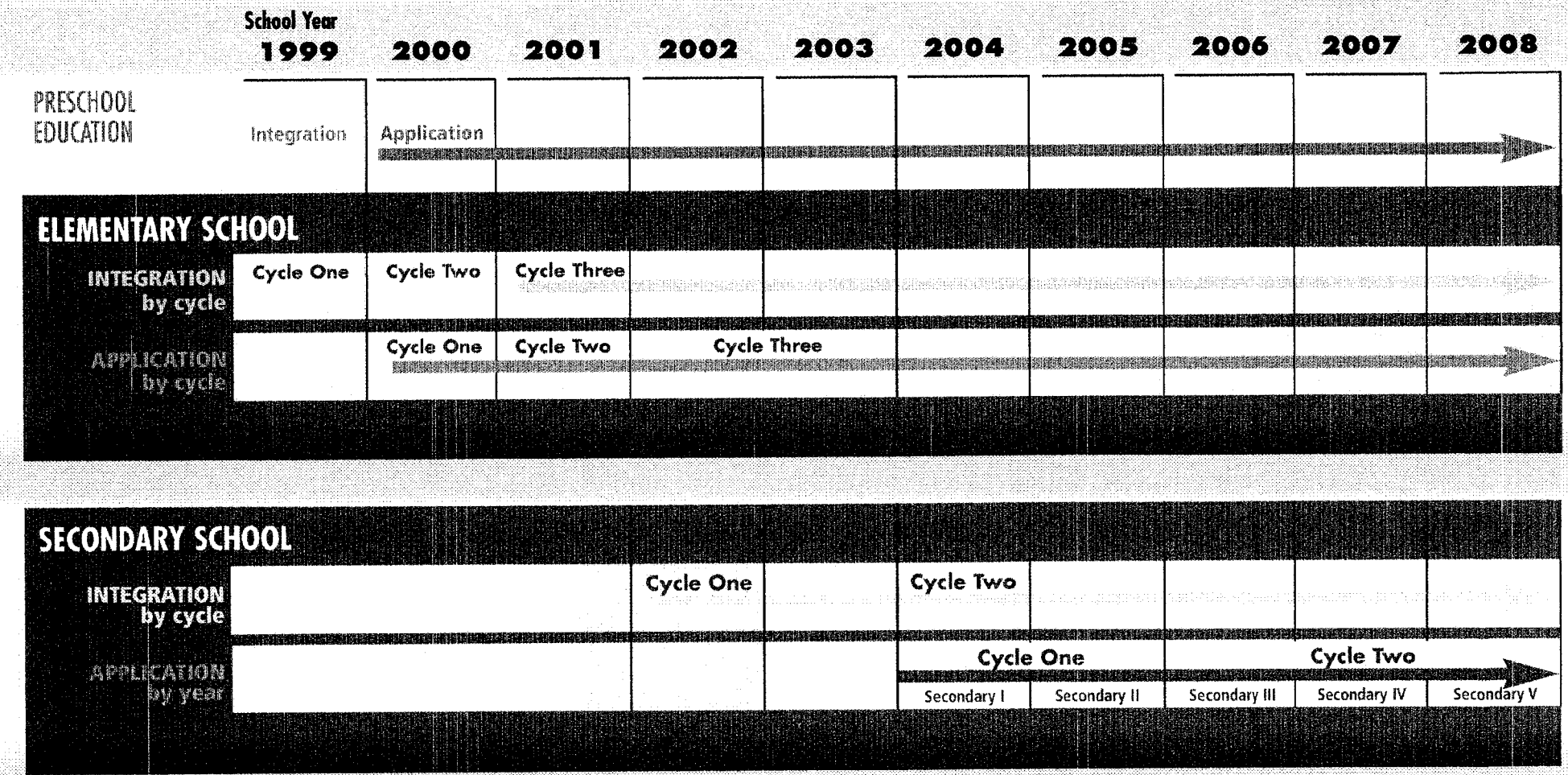
APPENDICES

APPENDIX A – MEQ CALENDAR

CALENDAR FOR THE IMPLEMENTATION OF THE QUÉBEC EDUCATION PROGRAM

Preschool, Elementary and Secondary School



13-0004-03A

MEQ 2002-09

Éducation Québec

Detailed Calendar for the Implementation of the Québec Education Program

Preschool, Elementary and Secondary School

PRESCHOOL EDUCATION → (Integration: 1999) **Application: 2000**

ELEMENTARY → ❄ Year of Integration ❄ Year of Application

SECONDARY →

QUÉBEC EDUCATION PROGRAM (Elementary and Secondary School) Cross-Curricular Competencies and Broad Areas of Learning	Elementary: Cycle One (Elem. 1 and Elem. 2)		Elementary: Cycle Two (Elem. 3 and Elem. 4)		Elementary: Cycle Three (Elem. 5 and Elem. 6)		Secondary: Beginning of Integration: 2002 — Cycle One (Sec. I) Year of Application	Secondary: Beginning of Integration: 2002 — Cycle One (Sec. II) Year of Application	Secondary: Beginning of Integration: 2004 — Cycle Two (Sec. III) Year of Application	Secondary: Beginning of Integration: 2004 — Cycle Two (Sec. IV) Year of Application	Secondary: Beginning of Integration: 2004 — Cycle Two (Sec. V) Year of Application
	1999	2000	2000	2001	2001	2002 and 2003	2004	2005	2006	2007	2008
LANGUAGES											
Français, langue d'enseignement	1999	2000	2000	2001	2001	2002 and 2003	2004	2005	2006	2007	2008
English Language Arts	1999	2000	2000	2001	2001	2002 and 2003	2004	2005	2006	2007	2008
Français, langue seconde	1999	2000	2000	2001	2001	2002 and 2003	2004	2005	2006	2007	2008
English as a Second Language	—		2000	2001	2001	2002 and 2003	2004	2005	2006	2007	2008
Third Language (option)	—		—		—		—	—	2006	2007	2008
MATHEMATICS, SCIENCE AND TECHNOLOGY											
Mathematics	1999	2000	2000	2001	2001	2002 and 2003	2004	2005	2006	2007	2008
Science and Technology	—		2000	2001	2001	2002 and 2003	2004	2005	2006	2007	—
ARTS EDUCATION											
Music	1999	2000	2000	2001	2001	2002 and 2003	2004	2005	2006	—	—
Visual Arts	1999	2000	2000	2001	2001	2002 and 2003	2004	2005	2006	—	—
Drama	1999	2000	2000	2001	2001	2002 and 2003	2004	2005	2006	—	—
Dance	1999	2000	2000	2001	2001	2002 and 2003	2004	2005	2006	—	—
SOCIAL SCIENCES											
Geography, History and Citizenship Education	—		2000	2001	2001	2002 and 2003	—	—	—	—	—
History and Citizenship Education	—		—		—		2004	2005	2006	2007	—
Geography	—		—		—		2004	2005	—	—	—
Understanding the Modern World	—		—		—		—	—	—	—	2008
PERSONAL DEVELOPMENT											
Moral Education	1999	2000	2000	2001	2001	2002 and 2003	2004	2005	—	—	—
Physical Education and Health	1999	2000	2000	2001	2001	2002 and 2003	2004	2005	2006	2007	2008
Moral and Religious Education (Catholic and Protestant)	1999	2000	2000	2001	2001	2002 and 2003	2004	2005	—	—	—
Ethics and Religious Culture* (Secondary IV)	—		—		—		—	—	—	2002*	—

* Starting in September 2002, all Secondary IV students will take a moral education course until it is replaced by the approved version of the Ethics and Religious Culture program.

Éducation Québec

03-0004-02A

APPENDIX B – PARTICIPANT 3-PAGE PACKAGE

- Introductory Letter
- Consent Form
- Biographical Form

Page 1 - Introductory Letter

Date
Dear Educator:

Identification ♦ My name is Louise McLaughlin. I am a student at McGill University in the Master's program, Educational Leadership, under the supervision of Dr. Christopher Milligan. I am also an educator with over twenty-five years multilevel teaching experience in both the public and private education systems in Quebec.

Purpose ♦ I am conducting research on educator use of electronic mail (email). I am soliciting your participation to discover **how electronic mail is affecting your communication patterns as an educator**. Some questions you may want to consider are:

- How has email facilitated your life as an educator?
- With what frequency do you use email?
- How wide is your email network?
- How do you combine offline and online teamwork?

The length of your response is your call. This research has received approval from the McGill Ethical Review Committee and the LBPSB.

Protection of Privacy ♦ Even though the data collection process will be done through the unsecured environment of the Internet, upon reception of the data, confidentiality can be assured. Your information will be copied to a disk and stored in a safe location before being deleted from my electronic address. Responses will be coded with numbers and only my thesis supervisor and I will have access to the data. You will be free to disclose what you deem appropriate and withdraw both yourself and the data from the research at any time without penalty.

Findings ♦ Looking at email and educator use is cutting-edge research. My findings should offer some worthwhile insights and I will communicate my research findings to you. I appreciate your willingness to participate and help out a fellow educator.

Contact ♦ If you have any questions concerning this research, please feel free to contact me at my email address: <mclou30@hotmail.com>

Thank you for your support.
Sincerely,

Louise A. McLaughlin

Page 2 - Participant Consent

To give your consent, please complete the following digitally and return to my email address at your earliest convenience:

<mclou30@hotmail.com>

The boxes are ready for your replies. Simply place your cursor inside the box – click and type.

- Check (√) the following statements
- Fill in your name and the date below

♦ I give my consent to participate in the above research. ☐

♦ I understand that my participation is voluntary. ☐

♦ I understand that I may withdraw my participation at any time without penalty. I may also exercise the option of removing my data from the research without penalty. ☐

♦ I understand that there are no personal risks involved with this research. ☐

NAME: ☐

DATE: ☐

Page 3 - Biographical Information

To better situate the data, I would appreciate your completing the following questions.

The boxes are ready for your replies. Simply place your cursor inside the box – click and type.

- Gender (**F** or **M**) ☐
- Your present role(s) as an educator ☐
- Level (√) Primary ☐ Secondary ☐
- Number of years as an educator ☐
- Age ☐

APPENDIX C - UNIVERSITY GROUP

- Data Collection Instrument

RESEARCH PROJECT

REQUEST: Need your collaboration

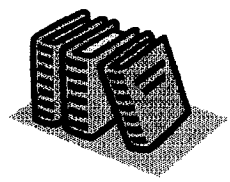
OBJECTIVE: Collect emails from class

PURPOSE: Analyse email contents

ANONYMITY:

QUESTION: **How has email use affected your communication patterns?**

RESPONSE: One sentence to ...

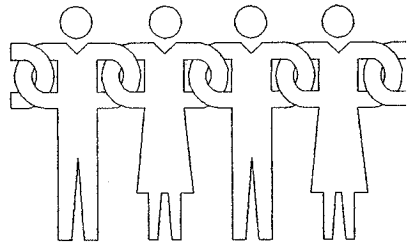


PAY OFF?: Results reflect only **our** group

mcthesis@hotmail.com

APPENDIX D – COLLECTION SHEET

- Participant Names and Email Addresses



NAME

EMAIL

APPENDIX E a) FRENCH EMAIL SENT TO PARTICIPANTS

Bonjour,
Merci de participer à ma collecte de données sur les courriels. Voici un retour sur la procédure :

- Voir document dans l'attachement et compléter pages 2 et 3
- Réattacher ce document au courriel où vous me donnez vos impressions sur l'utilisation du courriel.

Merci de votre appui dans cette démarche – couldn't do it without you!
Louise McLaughlin

APPENDIX E b) ENGLISH EMAIL SENT TO PARTICIPANTS

Hello,
Thank you for participating in my data collection on emails. Here is a quick review of the process:

- Download attachment and complete pages 2 & 3 (consent form & bio.)
- Save additions and close file
- Reattach downloaded attachment to the email you're going to send me where you describe your impressions of email use to me

Thank you for your support – your participation is greatly appreciated!
Regards,
Louise McLaughlin

APPENDIX F a) SECOND FRENCH EMAIL SENT TO PARTICIPANTS

Bonjour,
Un petit rappel pour vous dire que votre appui dans ma collecte de données sur les courriels est vital pour ma thèse. Le début d'année est toujours très occupé mais quand le temps vous le permettra, je serais ravie d'avoir de vos nouvelles!
Merci de votre appui.
Louise McLaughlin

APPENDIX F b) SECOND ENGLISH EMAIL SENT TO PARTICIPANTS

Hello,
Just a reminder that I would really appreciate your support in my email collection project. My thesis is built on educator participation.
The early school year is hectic and I hope that when things quiet down, you will think of me!
Thanks for your help
Louise McLaughlin