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Folio

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# THE SCHOOL LIBRARY AND SHIFTING PARADIGMS
Folio

By

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**Abstract**

Educational restructuring is changing curriculum, instructional design, and classroom practices. In today's learning environment, students are actively engaged in their learning, enabled by access to a vast array of multi-sensory resources. One of the driving forces behind this change is technology, and educators must begin to use the tools provided by it or the future may overcome them.

A radical change, in philosophy and conception, brought about by technology, is also altering the environment of the school library resource centre, its programs, and the role of teacher-librarians to more accurately reflect the environment in which they function. The increase in electronic and interactive media has transformed the school library resource centre from a repository of books to an information technology centre. A new *information literacy* has evolved to access, analyze, apply, create, and communicate that information. The teacher-librarian no longer manages a collection, but rather integrates technology into the curriculum through cooperatively planned and taught units of study.

School library resource centres and their programs, as well as teacher-librarians who have not kept pace with these changes or constructed a vision for the future, may not be empowering students to be independent, life-long learners.

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*Chapter One*

# *Introduction to the Folio*

## Rationale, Purpose, and Scope

## *Chapter I*

### Rationale

> *"Change, rapid and pervasive, may be the single most important characteristic of the twentieth century."* (Information Power, ALA, p.1)

The truth of this statement is reinforced through our witnessing of such world events as the dissolution of the Soviet Union and the waging of the Persian Gulf War. We have seen, on the one hand, the unification of Germany, and yet on the other hand, the breakup of Yugoslavia. On a national level, we have experienced the demise of our national railway system in preference to the automobile and the air plane. We have observed the privatization of government industries and witnessed the emergence of new political parties. Technologically, we have encountered the death of the long playing record album and witnessed the birth of the World Wide Web. Locally, we have observed the decline of our cod fishery, been presented with documentation for a new and restructured educational system, and have experienced a provincial referendum on the future of the our denominational education system. Such change is:

> ubiquitous and relentless, forcing itself on us at every turn. At the same time, the secret of growth and development is learning how to contend with the forces of change -- turning positive forces to our advantage, while blunting negative ones. (Fullan, 1993, p. vii)

Throughout the past decade, we have learned much about change and how to handle it. As we head for the twenty-first century, we will still continue to experience change. As effective educators, we must deal with that change, learn from it, and help our students learn from it, as it will be critical to their future society.

Since ideas and thinking about education and information are changing, consequently, educators today are shifting their paradigms. Instruction is moving away from the traditional teacher-centred classroom to a student-centred environment in which students' individual learning styles, knowledge, and background are incorporated into meaningful learning experiences. In conjunction with this, is the shift in the role of the school library resource centre from a storehouse of resources and equipment to a dynamic, student oriented resource-based learning centre where students will play an active role in their own learning. In this new environment, they will require differing methods, strategies, skills, and examples to achieve educational success.

More particularly, as we move more and more toward these changes in education, as a teacher-librarian, I feel this shift will have numerous implications for the role of the school library resource centre. It is imperative that we rethink and restructure the school library resource centre within this framework in order to provide students with the strategies and skills that they will need as members of a

future society. We need to articulate its role and examine how it needs to change in view of how education and information are changing because, I believe, it has a significant contribution to make in educating our children through this sea of change.

It's time for teacher-librarians and the school library resource centre to shift their paradigms to this future learning environment and our students' changing needs. Changing facilities, changing collections, changing technologies, changing roles, and changing skills must all be considered and redefined to meet the needs of the students of the twenty-first century. To be effective at understanding these changes, mastery is essential. My aim is to examine current trends in school library resource centre research and learn as much as possible about my role as a teacher-librarian in this changing paradigm.

**Purpose**

The purpose of this folio is to explore these changes by examining the role of the school library resource centre and the teacher-librarian in this era of shifting paradigms and changing technologies. The purposes served by this Folio are:

- to examine the school library resource centre in the context of a changing technological and information-rich environment,
- to examine the role of the school library resource centre in an era of changing paradigms: collections, organization, services,

- to examine the role of the teacher-librarian within an information-age environment,
- to explore the general principles of information literacy models with a view to applying them to a primary-elementary-intermediate level school,
- to discuss the process of learning from information as a key component of a school library resource centre program in an information-age school, and
- to investigate the process and extent of one school's journey through this transformation to an information-age school.

**Scope**

Past and current literature on school library resource centres, teacher-librarians, and information literacy have to be used to envision the future direction of school libraries.

This Folio consists of four chapters. Chapter One, an introduction to the paper folio provides the rationale, the purpose, and scope of the folio. Chapter Two, *paper one of the folio investigates* through a literature search, what factors have contributed to how and why the school library resource centre has changed or might change to meet the needs of students through the case study of *The Academy* (a

fictitious name), a Grade K to 9 school located in Newfoundland. Chapter Three, paper two of the folio examines the role of the teacher-librarian and how it needs to change in view of how education and information have changed. Chapter Four, paper three of the folio examines models for teaching information literacy skills and the need to put strategies in place to address those skills. The reference list is an integrated one covering all three papers.

**Paper One**

School libraries are experiencing a time of transition. The enormous increase in electronic media, interactive media, and the World Wide Web is transforming the school library resource centre. Morill (1995) states that "the school library is no longer just a warehouse of materials or convenient scheduling slots to give teachers planning periods" (p. 32). It is becoming a place brimming with a myriad of resources, materials, and technological equipment to the point that it will become the information command centre of a school. To become such a centre, teacher-librarians must avail of new technologies to increase their access to information and acquire new information formats -- software, videodiscs, CD's -- and the equipment to use them -- computer work stations, laser printers, CD-ROM towers, and modems. According to Blake (1994), "with the virtual library concept ... a vision of the library of the later twenty-first century has been proposed" (p. 10). Teacher-librarians need

to understand the role technology will play in the future school library resource centre. They must have the foresight of seeing how school library resource centres will fit into an information-based world so that they become the best resource a school can have. Teacher-librarians need to entertain a number of questions in developing their vision. What do they want their school library resource centres to be and how do they get there? Will school library resource centres become expensive non-essentials? Will they become the focus of children's learning and link to the outside world? Or, as the traditional information provider, will they become dispensable?

Paper one investigates, through a literature search, how school library resource centres have shifted, or might shift their paradigms, to meet the information needs of students embarking into the twenty-first century. The information is synthesized and guidelines are created to meet the needs of *The Academy*, a Kindergarten to Grade Nine school, located in Newfoundland.

**Paper Two**

As teacher-librarians, we are, first and foremost, teachers. We are teachers in practice, certified as teachers, and employed as teachers despite the fact that we have assumed various names over the years. In this technological and information-rich age, Rux (1995) states that "there must be a concomitant shift in understanding what teacher-librarians do" and they need to "shed the paradigm as keepers of

books," according to Farmer (1994), towards one of facilitator and information specialist. As well, teacher-librarians need to become the instructional leaders, the effective change agents, and the models for the rest of the school. Their role will be pivotal and multi-faceted: communicator, leader, consultant, information specialist, resource evaluator, manager, instructor, collaborative planner, and teacher. However, in these times of fiscal restraints, what role will they play? Will teacher-librarians become dispensable or indispensable? Will there be a role for teacher-librarians? If so, what will it be? Will they become information specialists trained in the acquisition, dissemination, and use of information? Will they be considered valued colleagues with a vast knowledge of resources useful to the work of teachers and students? What roles will teacher-librarians play in ensuring that students will become information literate?

Paper Two examines how teacher-librarians are changing as they become information specialists. I examine the role of the teacher-librarian in the context of a paradigm shift to an instructional leader, change agent, and information specialist in working with teachers, administrators, and students in the school. I examine the role and how it needs to change in view of how education and information have changed. The paper provides both synthesis and guidelines for practising teacher-librarians.

## Paper Three

In the past, for the most part, students have relied on the knowledge of teachers, the textbook, and the information skills of the teacher-librarian. However, information is expanding at an exponential rate. According to Ross and Bailey (1994) "experts tell us it is doubling every 3 years or faster. These rates are far surpassing the ability to read and write, to code and decode, or the human mind to discover, sort, and absorb" (p. 31).

Craver (1995) contends that "information literacy will be an essential survival skill" (p. 17) to functioning effectively in the twenty-first century. Hashim (1986) says students "will need to know how to identify needed information, locate and organize it, and present it in a clear and persuasive manner" (p.17). The huge quantities of information that are currently available through new technologies -- the CD-ROM, Internet, videodisc, on-line data bases, and the automated card catalogue and the ability to use the information to effectively solve problems and make decisions, will be essential components for academic success. These skills are central to the task of a school library resource centre in an information age. I believe the teacher-librarian and the school library resource centre can teach, model, articulate, and advocate these new literacy skills in helping students navigate through the information era and into the twenty-first century.

In doing so, however, it has to shed a set of paradigms that no longer fit the realities of this technologically changed world. If students are to participate in the education of the twenty-first century, then education needs to move into the twenty-first century. *I believe a school library resource centre can best meet this challenge.*

Paper Three shifts focus to students, and their needs, as they enter the information society. I examine the research literature for models of teaching information literacy skills as developed by others in the teacher-librarianship field, in an effort to understand the processes and the need for putting strategies in place to address these information literacy skills.

I consider these paradigm shifts and discuss guidelines for the transformation of school library resource centres, in general, in their quest to lead their students into the twenty-first century.

*Chapter Two*

# Paper One

## Information Technology and School Library Resource Centre Change

## *Chapter 2*

Paper One: Information Technology and School Library Resource Centre[1] Change

### Introduction

"The times, they are a-changin" and nowhere is this more certain than in the field of education. The whole process by which children learn about their world is drastically changing. The move is away from the content-based, textbook-oriented approach to a process-oriented, learner-focussed one where students are nurtured and provided with the tools of learning to become all they can be.

The changes in education over the past several decades have been rapid and decisive, especially as schools have attempted to meet the demands of an ever-changing workplace and society. The proliferation of technology alone is having a significant impact on how education is being delivered. It is such a driving force that it is changing the very nature of learning and instruction as we once knew it. From meagre beginnings, with various types of image projectors and ink-based duplicating machines to today's computers, CD-ROMs, and photocopiers, the march of education has been synchronous with the growing acceptance of technology as a part of life in

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[1] Various terms are used to denote the centre in the school normally referred to as a library: library, school library, school library resource centre, learning resources centre, resource centre. In this paper, all terms are used synonymously; however, the term " school library resource centre(s)" will be used.

the nineties and the twenty-first century.

School library resource centres are presently undergoing their own radical changes, in both their philosophy and conception, as they struggle to keep pace, especially in these times of financial restraint and downsizing. The enormous increase in electronic and interactive media, the World Wide Web, and new and emerging technologies are transforming, perhaps revolutionizing, our school library resource centres in many ways -- some subtle, some extraordinary.

The school library resource centre as a repository of books designed primarily to supplement the school's reading programs is evolving into a newer and more improved school library resource centre. Morill (1995) states that:

> The school library is the focus of change. The enormous increase in electronic and interactive media has transformed the library from a warehouse of books, equipment, and media into a communications command post. The media specialist no longer manages a media collection, but rather integrates technology into the curriculum. (p. 32)

A school library resource centre is becoming a place brimming with a myriad of resources, materials, and technological equipment to the point that it will be the "information laboratory" (Ross, 1992) of every elementary, intermediate, and high school.

New and emerging technologies are enabling school library resource centres to increase their access to information and their new formats -- software, videodiscs,

CD's -- and the equipment to use them -- computer workstations, laser printers, CD-ROM towers, and modems. Furthermore, Blake (1994) suggests that "with the virtual library concept ... a vision of the library of the latter twenty-first century has been proposed" (p.10). No doubt, it will play a pivotal role in the future school library resource centre.

As educators, teacher-librarians need to have a vision of how the school library resource centre will fit into an information-based world to ensure that it becomes the best resource a school can have. As well, they need to entertain a number of questions in developing that vision. What do they want their school library resource centres to be and how do they get there? Will school library resource centres become expensive non-essentials? Will the school library resource centre become the focus of the school's learning and link to the outside world? As the traditional information provider, will the school library resource centre become dispensable?

As technology is changing the role of the school library resource centre, it is also changing the role of the teacher-librarian. Gone are the passive teacher-librarians who have conventionally worked at selecting, organizing, and circulating books, working in isolation from others. They have since been replaced with teacher-librarians who work collaboratively with teachers to plan, develop, implement, and

evaluate curriculum using all available technologies.

In this chapter, I will investigate what factors have contributed to how and why the school library resource centre has changed, or might shift its paradigms, to meet the information needs of students who are embarking into the twenty-first century. That information will be synthesized and a plan developed to meet the needs of *The Academy*, a Kindergarten to Grade Nine school operated by the Interdenominational Board (fictitious name) located in Newfoundland.

## Nature of Educational Change

Restructuring, reform, accountability, and technology are the current educational mantras, and each shares a common theme -- change. Bringing about that change is very complex and often situation-specific. Therefore, I have chosen to focus on the school library resource centre as the centre of planned educational change.

To place things in perspective, Rozack (as cited in Ross, 1992) suggests "every historical period has its god word. There was an Age of Faith, an Age of Reason, an Age of Discovery. Our term has been nominated to be the Age of Information" (p. 140). There is no question that an "information revolution," accompanied by emerging technologies, has crashed upon society and our education system is changing to the point that, at times, it appears to be out of control. For

instance, many school library resource centres are currently automating and electronically cataloguing their collections. Yet, on the other hand, a host of Information Age technologies are transforming books as we know them.

According to Todd (1992):

> Education for the twenty-first century must be an education for an information society. The current scope and pace of change demands that we develop the flexibility to respond rapidly and creatively to new parameters imposed on us by the information society. (p. 19)

Kuhlthau (1995) states that "one of the major challenges of education for the twenty-first century is to educate children for living and learning in an information-rich environment. Failing to prepare students for that challenge is failing to meet the challenges of education today" (p. 1). That is to say, if students are expected to be educated for the twenty-first century, then education must move into the twenty-first century, not trail it.

These are but a few of the many examples suggested by educators which indicate that profound changes are necessary in our education system if students are to be prepared to work in an Information Age. However, in planning any educational reforms (in this case, as it relates to the school library resource centre), Fullan and Miles (1991) suggest that "knowledge of the change process is crucial" (p. 745) in education. In examining what works and does not work in educational reform, they suggest seven basic reasons why reform fails, and stress that they must be understood

in combination with each other.

1. The Fault Lies in Our Maps of Change -- suggesting that those who are involved in school reform have personal views of how change proceeds and they act on those views. Often they come into conflict with themselves or the maps of others.
2. Problems are Complex -- suggesting that solutions to problems are not clear cut, precise, or easily solved since education and its reforms are very complex.
3. Symbols Over Substance -- suggesting that reform fails because quite often it is as much political as educational.
4. Impatient and Superficial Solutions -- suggesting that reforms fail because solutions are often cosmetic. Such "superficial solutions introduced quickly under a crisis mentality normally make matters worse" according to Sieber, (as cited in Fullan, 1992, p. 747).
5. Mislabeling or Misunderstanding Resistance -- suggesting that labelling actions or attitudes as "resistance" is unproductive and because this is misunderstood, reform fails.

6. The Attrition of Pockets of Success -- suggesting that such pockets or examples have required tremendous effort on the part of individuals to make them work. Often this effort is not sustainable over time.
7. Misuse of Knowledge of Change Process -- suggesting that knowing about the change process is often cited as the source for taking certain actions. Statements such as 'ownership is the key to reform' ... 'vision and leadership is critical' are partial and half-truths.

To succeed at the change process, Fullan and Miles (1991) propose seven themes which "form a set, and are to be contemplated and realized in relation to each other" (p. 749).

These themes are summarized as follows:

1. Change is Learning / Loaded with Uncertainty -- it is important to understand that "all change involves learning, and that all learning involves coming to understand and to be good at something new."
2. Change is a Journey, Not a Blueprint -- often multiple innovations and policies are implemented simultaneously; therefore you "plan, then do, but do, then plan ... and do, and then plan some more."

3. Problems are Our Friends -- problems need to be taken seriously and dealt with head-on, not "ignored, denied, or treated as an occasion for blame and defence." It is imperative that problems not be attributed to resistance, ignorance, or the wrong-headedness of others.
4. Change is Resource Hungry -- attention must be given to resourcing not just resources. Face the dollar issue, be inventive, and rework the resources.
5. Change Requires the Power to Manage It -- programs do not operate themselves. Everyone has to take the initiative, and the power to manage the change must come from within the school.
6. Change is Systematic -- Fullan and Miles state that there is a "duality" to reform: system components and system culture. Both must be attended to at the provincial, district, and school level.
7. All Large Scale Change is Ultimately Local Implementation -- The six previous propositions embrace the notion that "local implementation by everyday teachers, principals, parents, and students is the only thing that ultimately counts."

Fullan, in The Meaning of Educational Change (1991), shows that change is a process, not an event, consisting of three stages:

1. Initiation
2. Implementation
3. Integration / Continuation

The *initiation* stage refers to the process leading up to and the decision to make the change. It starts with the notion that things could be better and could be improved and the success of that change depends upon how it is implemented.

The *implementation* stage is the period during which the change, innovation, or reform is actually put into practice. Fullan contends that this stage is probably the most difficult of the three stages, since it is here that one meets reality.

The third stage is the *integration or continuation* stage which refers to the institutionalization or acceptance of the change as a sustained part of the practice. Thus, this final phase happens when change is assimilated into a working practice. The process takes time, depending on the nature of the project and the attitude to change itself.

Having briefly discussed the nature of change as seen by Michael Fullan, the following discussion will focus on the situation of school library resource centres, in general, and the changes that have transpired at *The Academy* School Library Resource Centre, in particular.

## Current Influences on School Library Resource Centres

From a reading of the literature on school library resource centres, it appears that changes in school library resource centres have come from a number of directions or influencers. One major influence has been the American Association of School Librarians (AASL) and the Association of Educational Communications and Technology (AECT) document Information Power: Guidelines for School Library Media Programs (1988). Inspired by the developing educational environment and expanding technology, this document provided the vision and guidance for school library media specialists, in both the United States and Canada, to cope with the many significant changes within education as well as with the proliferation of information resources. It called on library media specialists to provide the leadership and expertise in the integration of educational and informational technology into instructional programs.

The guidelines draw on the best thinking of professional leaders. The authors drew from all the available research to provide a sort of manifesto, especially for American schools. It presented a unique and powerful statement of how schools can integrate all elements of educational and informational technology into the curriculum. Since the guidelines were written a decade ago, many changes have taken place in school library resource centres and their programs since that time. A more recent

document presently in draft by the AASL / AECT. Information Literacy Standards for Student Learning (1996), outlines new guidelines for school library resource centre programs and professionals. Its opening statement contends that:

> Today's student lives and learns in a world that has been radically altered by the ready availability of vast stores of information in a variety of formats. The learning process and the information search process mirror each other: students actively seek to construct meaning from the sources they encounter and to create products that shape and communicate that meaning effectively. (p. 1)

This document recognizes a future characterized by change as well.

Other documents have emanated from various other educational institutions and governments, and depict similar initiatives, including Newfoundland's own Learning to Learn (1991) which focus on the learner and the development of the skills needed for independent, lifelong learning through the resource-based learning concept. Its opening statement "Today's society is experiencing the tremendous impact of the information age. There are significant implications for our education system" (Foreword) signals a change for school library resource centres. Furthermore, the document states that "The learning resource centre in a school should serve as the information base for both teachers and students" (p. 29). The Ontario Ministry of Education and Training document, Information Literacy and Equitable Access: A Framework for Change (1995), "seeks to define the role of school libraries in context of an electronic age" (Warren, 1997, p. 1). It speaks of a

need for an overhaul of existing facilities and suggests that funding should be put in place to support technology in school libraries. The Association for Teacher-Librarianship in Canada (ATLC) and the Canadian School Library Association (CSLA) has recently issued a draft entitled Competencies for Teacher-Librarians (May, 1996) which seeks to identify competencies for teacher-librarians in an "era of more and more sources of information, both print and electronic" (p. 2).

Educational research and reporting have also provided a stimulus for change. Craver (1995) notes that "employment evidence suggests that the availability of a technologically advanced library media centre is probably the best resource a school can have" (p. 13). The American Association of School Librarians (as cited in Brown and Sheppard, 1997) states that:

> Research on the restructuring of schools calls for the teacher's role to change from a textbook lecturer to that of coach. Students become active learners who create their own knowledge after interacting with information from a variety of sources ... often referred to as resource-based learning. (p. 200)

Again, to support this concept, school library resource centres play an essential and pivotal role and must change to meet the demands of resource-based learning since it is "appropriate and preferred in today's schools" (p. 206) according to Brown and Sheppard (1997).

Sometimes the stimulus for change will come from a conference or magazine.

Often such conferences, workshops, and articles provide the right ideas to initiate the change. In July, 1997, the International Association of School Librarianship, in conjunction with the Association for Teacher-Librarianship in Canada, held an international conference in Vancouver entitled Information Rich but Knowledge Poor? Emerging Issues for Schools and Libraries Worldwide during which time researchers, educators, and teacher-librarians gathered to present professional papers and discuss the most recent research in the field.

Global patterns / globalization has also been a major influence. The media often reports that major Canadian companies are being taken over or controlled from abroad or vice versa, that most of the new jobs in Canada are created as a result of foreign trade, or that the workplace of the twenty-first century is becoming *international in scope. Craver (1995) suggests school library* resource centres will:

> need to develop high-tech environments to provide the types of learning experiences that employers will require of their employees. Electronic access to local and remote on-line networks, in house use of CD-ROM databases, and interactive media are necessary for all library media centres. (p. 16-17)

*To be successful, people will have to work with many different* cultures and "will require skill in locating, analyzing, and applying global information to solving problems and creating new opportunities" (Mancall, 1992, p. 67). Barron and Bergen (1992) observe that society is "drowning in a flood of information," and

conclude "our economy rests on our ability not only to manage this information but also use it creatively. To maintain even a minimum quality of life, graduates must be able to survive in the world of information" (p. 524).

It is logical to conclude that, if students are expected to live in a globally based economy, the education system must reflect such global patterns: that to succeed, students will require strategies and skills in locating, analyzing, and applying global information to solving problems and creating new opportunities.

Over the past decade much attention has been given to what has made an individual a critical and creative thinker. School library resource centre programs have always incorporated strategy and skill development in such areas as distinguishing fact from opinion, identifying bias, and determining what is accurate and credible. During the past number of years, according to Jackson (1993), "library skills have been evolving from primarily information locating skills to information processing skills" (p. 22). Thus, the information literacy movement, advocated by professional educators as an essential component of today's students' competency as lifelong learners and users of information, is directly related to the ability to think critically. Such skills are a large part of the foundation on which the school library resource centre is built. The school library resource centre can strengthen these skills and has accepted the responsibility by installing information technology -- hardware

and software.

Furthermore, the change in the storage and delivery of information made possible through technology and the emerging technologies has impacted the information landscape to the point that "information literacy will be an essential survival skill in the twenty-first century" (Craver, 1995, p.17). Data is becoming much more accessible. The two engines driving this change are the CD-ROM and the Internet, especially the World Wide Web. With the proliferation of on-line databases, multimedia encyclopedias, the Internet, and other interactive media, students have huge quantities of information, in a variety of formats, readily available. This has resulted in an "information revolution." Moreover, there are now whole libraries on-line, including the United States Library of Congress, as well as commercial libraries to join over the Internet for a small fee.

This greater quantity of information, and the relative ease at which it can be accessed, has placed teachers, teacher-librarians, schools, school districts, and governments under pressure to reform their school library resource centres. Theorists predict that if they do not change, quickly and radically, they will cease to be used, just as the print encyclopedia no longer sells the way it used to. For example, Williams and Smith (1994) state:

> Is it any wonder that a lecture on World War II fails to hold the attention of students who can tune into a live war to watch Patriot

> missiles blast at incoming Scuds? Can abstract discussions of To Kill a Mockingbird compare with the images of the beating of Rodney King, or the trials of the police officers who effected his arrest, or the resultant riots in the streets of Los Angeles? Those technological advances that somehow seem to alienate pupils from the educational environment must also be used in that environment to create dynamic linkages between the school and the world, the past and the present, and the teacher and the student. Educators must begin to use tools of the modern technological world or the future will overcome them. (p. 43)

If schools and districts do not provide students access to, or even mastery of, the information technologies, there is a very real danger that they will fail to meet their primary objective of preparing students for life.

### Impact on *The Academy* School Library Resource Centre

In view of the need for students to prepare for the new information technologies, it was imperative that *The Academy* school library resource centre meet the new challenges and initiate plans to implement new programs. *The Academy* is a Kindergarten to Grade Nine school presently operating under the auspices of the Interdenominational School Board. The school's learning resource centre serves a student population of approximately 220 and a staff of 15. It is centrally located in the school and has a collection of approximately 5000 items. It enjoys the services of a teacher-librarian for approximately 25% of the time. It has already begun to meet the challenges presented by societal changes and technology. The story of how they have proceeded in the past five years is analyzed below, drawing on the change theory

reviewed earlier.

**Initiation Stage**

The first step in the *initiative* was taken by the School Board in 1992 when it set up a Technology Committee whose mandate was to develop a policy for the implementation of new technologies in education within the district. Members of that committee consisted of administrators, teachers, and various program specialists. The teacher-librarian at *The Academy* was the representative for the school library resource centre teachers on the committee. Over the course of a year, a plan evolved which represented the collaborative efforts of all. The School Board formally adopted the Technology Policy early in 1993 and quickly moved to substantiate its adoption with an infusion of money and the appointment of a full-time Educational Technologist to coordinate the acquisition, distribution, and usage of educational technology products.

More significantly, the role of school library resource centres within the School Board was recognized in the Policy:

> With the implementation of the concept of resource-based learning, the resource person is spending a great deal of time working with teachers to implement this strategy into the classroom. A resource person is an educator and should spend most of his / her time involved in the education of students and not doing routine clerical work. (Interdenominational School Board Technology Policy, 1993)

This particular recognition and change initiative by the School Board

generated a great deal of enthusiasm among the School Board's teacher-librarians, as it now formally recognized that teacher-librarians and school library resource centres have a pivotal role to play in educating children to make use of information in their formal education, and throughout life in general.

This recognition gave *The Academy*, and its teacher-librarian, the mandate, initiative, and incentive to affect changes in the school library resource centre to embark on the journey towards becoming the school's "information centre" for the twenty-first century. It provided the school library resource centre with a unique opportunity for transformation into a new and improved information centre -- one that would be well on its way to becoming the "technological and information hub" of the school.

**Implementation Stage**

To progress to the second stage, that of *implementation*, it is necessary to take into account what Fullan (1991) refers to as "the subjective realities" and to ask, how does this fit into the list of priorities? It is at this stage that people adapt it to meet their own agendas. This stage is characterized by risk, insecurity, and fear as difficulties will arise and problems will abound. As well, Fullan contends that "change, by definition, demands extra resources beyond those of the status quo -- for training, substitutes, new materials, new space, and above all, time. It is resource-

hungry" (p. 750). *The Academy* met the challenges head-on.

The first major step, which signalled the beginning of a new era for the school library resource centre, was the purchase and installation of a computer workstation, printer, and appropriate school library resource centre management software. In preparation for this installation, fund raising efforts had enabled the school library resource centre collection to be retroactively converted to MARC (machine readable format) records almost immediately since an up-to-date shelf list was in place. Within weeks, library circulation was computer controlled, and books and curriculum resources were bar-coded so that student and teacher identification cards could be scanned across an optical reader. Moreover, using key words, students and teachers could perform searches until they arrived at a focused bibliography on a selected topic which could be printed. Additionally, the status of the materials was indicated on the computer screen.

At first, there were concerns and apprehensions, especially on the part of teachers, that the maintenance costs would negatively affect their budgetary requests for curriculum support materials. To counter these concerns, the teachers were assured it would have very little effect and would positively affect their teaching and aid student learning. Teachers were introduced to the system through in-service sessions and students were taught to use the system over a four week period. There

was a change in attitude as teachers found savings in time and discovered how simple it was to prepare focused bibliographies. There was also a noticeable change in students' research patterns, as they entered the school library resource centre, conducted their research, printed the results, and proceeded to the shelves to retrieve the materials.

With the enthusiasm and positiveness generated by this technology, it was decided, in consultation with the School Board, to submit a proposal to the Human Resources Development Agreement Fund to establish a pilot project within the school. It would involve the Intermediate level classes (Grades 7 - 9) and the school library resource centre, and focus on the implementation of computers into the curriculum. The school was successful in obtaining the funding, and proceeded immediately, in the spring of 1994, to effect the changes in readiness for school opening in September, 1994, since the proposal required several phases.

Phase One required physical changes to the classrooms and the school library resource centre to accommodate computer workstations as well as wiring for the installation of a Local Area Network (LAN). Five computer workstations were installed in each of the three Intermediate level classrooms and the resource centre, and connected via the LAN. This provided on-line access to the school library resource centre's collection from the three classrooms and the school library resource

centre. At least one workstation in each classroom was equipped with a laser printer to allow for printing of documents on site, a hand scanner to be used to import images and convert them to files for projects, and a modem connected to an outside telephone line for direct access to on-line data bases and the Internet through accounts set up with SUSIE in conjunction with STEM-Net. Various software, including desktop publishing tools, atlases, and encyclopedias was installed on the network server.

Phase Two of this project involved a four month familiarization period for both teachers and students to this "new" learning environment. During this period, students and teachers had the opportunity to explore the new technology and software applications. Activities, incorporating curriculum objectives, were assigned for completion using the new tools.

Phase Three, scheduled for January, 1995, involved the start of major projects where students were required to use the technology to conduct searches, develop various projects, and present them.

This new technology helped deliver the curriculum to students in a number of ways. The automated card catalogue facilitated resource-based learning across the curriculum by improving student access to and use of the materials in the school library resource centre. Information technologies, such as databases and the Internet,

supported the library's collection and the resource-based learning process by providing access to remote traditional and electronic materials.

Information literacy was also part of the curriculum. The use of these new technologies was an essential component for students' competency as lifelong learners. It required the students to develop more information skills, and over time, they became more selective in their choice of resources and their use of information.

Overall, it motivated the Intermediate level students to do more research, since it now eliminated the drudgery of manual searching and could be presented via the computer. As well, there was something about a computer that made a student want to use it, and that had been instrumental. Gonzalez (1996) states that "research on the effectiveness of technology in schools concludes that technology positively affects students' attitudes toward learning and achievement, as well as promotes student-centered and cooperative learning" (p.16). Overall, the whole focus of the project had been primarily educational -- student work improved; more resources and better research were conducted; and more time was spent on reading, note taking, and writing. Additionally, the five computer workstations that were set up in the school library resource centre, as a result of this project, permitted access to the its on-line collection to all students and allowed for simultaneous access to a minimum of twenty students. In addition, the STEM-Net terminal was placed in the school library

resource centre to allow teachers to access outside materials for their use and search for information for students as well.

The implementation of these initiatives changed the school library resource centre's landscape dramatically. The once self-contained storehouse of books and resources was on its way to becoming an "information supermarket" that was being used more now than ever before.

The next step in the plan was to establish computer workstations in all classrooms, including Special Needs, all networked and allowing access to the school library resource centre's collection. Then, the acquisition, installation, and networking of a six-bay CD-ROM tower in the school library resource centre permitted students to search multimedia encyclopaedias, such as Grolier, Encarta, and Compton's, and various databases of articles, visuals, and numerical data directly from their classrooms, without ever visiting the school library resource centre. This initiative was accomplished with assistance from the School Board, the business community, the Parent Teacher Association, and school funds before the end of the 1994 - 1995 school year.

The following year, 1995 - 1996, saw the installation of a fully networked computer lab in partnership with Eastern Community College, as well as the purchase of an ink-jet printer, flatbed scanner, and TV encoder. Whole classes were now able

to do research directly from the computer lab using the resources of the school library resource centre. Thus, technology was fast becoming an integral component of the school's overall curriculum. However, it is important to note that technology was not installed for technology's sake, being touted as an end in itself. Teachers now asked themselves -- what do we want it to accomplish? How could we use it effectively and efficiently to reach our goals?

Despite the emergence of technology within the school and the move towards a restructured school library resource centre, reading and books were not abandoned. The school library resource centre's book and periodical budget remained intact. As a matter of fact, technology and reading were combined by having students track their recreational reading progress on computers through the Accelerated Reader Program -- a commercial reading management and comprehension test bank. Furthermore, a quantity of interactive books on CD-ROM were purchased.

During 1996 - 1997, another major initiative of the school library resource centre was realized. Although it could operate with its strong basic collection of books and other resources, the new technology, and the limited Internet access through the teacher STEM-Net computer, the staff strongly felt that all students in the school, other than the classes involved in the pilot project through SUSIE accounts, should be linked to information agencies outside the school. The teachers felt this

was imperative if the school was to provide an education for the future of all students. Vail (as cited in Brown and Sheppard, 1997) argues "in such learning environments, teams need to look beyond their school for information, and that one critical source, still not available to many teachers (and students) due to limited technical expertise (and finances), is the World Wide Web" (p. 201). Gonzalez (1996) states that "connections to databases and resources outside school to public and university librarians and to the Internet are essential in today's society" (p.18). While technology is making access to information which has been scanned, imaged, and digitized for storage on computers faster and easier, the challenge will be to ensure equitable access for all students to both the technology and programs which will help them develop their information literacy skills. As well, The Ontario Ministry of Education and Training document Information Literacy and Equitable Access: A Framework for Change (1995) states that "today, no resource centre, school, or school system can contain all the information students need. They need electronic access to remote databases, bulletin boards, networks, and distance education" (p.10). Thus, the teacher-librarian, in collaboration with the school principal, was successful in the submission of a projects proposal to STEM-Net for STELLAR school funding. This allowed for the installation of a dedicated server and the appropriate software for total Internet access directly to the school. Furthermore, the potential of satellite

technology was investigated and a satellite dish was purchased by the school to enable high speed downloading of data from the Internet. This technology provided a vital *bridge to world databases and information sources for all students and teachers.* The glimpse provided to the school by the current use of the Internet suggested that students in the future will be able to access information and resources through the multiple media of text, audio, and video.

This new technology has significantly impacted the school's library resource centre -- its resources, programs, and operation -- all making a direct contribution to the school's overall instructional program. It has brought together the Internet, multimedia, and the traditional library into a new force for educational excellence. Who would have believed that databases thousands of miles away could be searched and the text delivered to a student's computer monitor for a report? Who would have foreseen that the primary and elementary children would confidently use a multimedia encyclopedia to find information for their first research report? Who would have imagined interacting with a real author in a discussion on characterization in his books? For the adults, it was hard to comprehend. Yet, for students, this is today's reality. They are learning, thinking, and processing information from many different formats in a fast paced technologically-driven environment. For most of the students, the school library resource centre is, and probably will be, their only source of that

information technology.

**Continuation Stage**

Having proceeded through the implementation stage fairly successfully over the past four to five years, the school library resource centre is now stepping into Fullan's (1991) third stage - *integration or continuation*. Through the efforts of the School Board, teachers, students, and the community, initiatives in the acquisition of technology have been very fruitful. However, having the infrastructure in place was only a part of the needs requirement for a new and improved school library resource centre. It was the first big step. In order to realize the full potential of information technology, students and teachers must now become efficient and effective users of it.

Over the past three years, teachers and students have worked with the technology. All teachers, for example, availed of and have received training through a ten week (three hour per session) program offered by the School Board's technology coordinator after school hours. In addition, most Intermediate level teachers received training through an advanced course offered in a similar method. These programs, plus in-service training in STEM-Net, have provided a level of comfort and competence in allowing teachers to integrate specific programs into the curriculum. Essential to some of the success has been the teacher-librarian who has

brought the information resourcing strategies, skills, and knowledge of the information process into the various teaching and learning programs.

Over the past few years, the school library resource centre has strived to keep pace with the new technology and the information needs of students. During this whole process, a phenomenal amount of time and effort has been spent. Whether it can be sustained is difficult to answer.

The challenge now is to maintain the enthusiasm and use information technology effectively across additional areas of the curriculum so that students will become productive citizens for the 21st century. In doing so, the school's staff must keep in mind that the needs of the students and the curriculum must be paramount over the "glitz and glitter"of the technology.

## Conclusion

Change is probably the most important characteristic of life in the latter part of this century. For the most part, it is rapid and fast moving. Occasionally, many people yearn for the slower pace of another time but evidence suggests that this slower pace is not about to return. Most of the changes have been the result of rapid advancements in technology, and being the powerful force that it is in society, even more change is eminent. Nowhere is this truer than in the field of education. Thornburg (in Pappas, 1997) states that "technology has opened Pandora's box and

education will never be the same" (p. 32). Teaching and learning are changing, and the school library resource centre is changing as well. In today's information-rich environment, students can be actively engaged, enabled by worldwide access, to a vast array of multi-sensory resources at their fingertips in the school library resource centre.

*The Academy* school library resource centre has strived to change in response to the new technologies. It is becoming the technological information centre of the school, where books, as well as access to on-line catalogues, a variety of CD-ROM databases, instructional software, and the Internet are centred. These resources have enriched the collection and improved information services. As a result, teachers and students can now locate a much larger variety of resources and have been provided with a new means of information retrieval, in a transformed school library resource centre that is indispensable to teachers and students. It has made considerable progress in its efforts to empower students to become independent learners, both today and for the rest of their lives.

*Chapter Three*

# Paper Two

# From Teacher-Librarian to Information Specialist: A Changing Role for an Information-Rich World

## *Chapter 3*

Paper Two: From Teacher-Librarian to Information Specialist:
A Changing Role for an Information-Rich World

### Introduction

Teacher-librarians are trained as teachers and as librarians. However, they are, first and foremost, teachers -- in practice, certification, and employment -- of both students and teachers. For half a century, they have assumed various names and their role has been revised and expanded to suit educational trends and incorporate changing technologies. Haycock (as cited in Crowley, 1995) asks, "Is there a role for the teacher-librarian in a restructured educational system? If so, what should it be?" (p. 9)

A goal of education is to have students think rationally and logically. With ever increasing sources of information, in print and electronic format, and the difficulty of making certain that students derive meaning from that information, the role of the teacher-librarian is crucial for achieving this goal. This paper will argue that teacher-librarians who are skilled in accessing and evaluating information, regardless of the way it is delivered, are needed to provide leadership in the use of the newer information technologies.

Rux (1995) maintains that in this technological and information-rich age, "there must be a concomitant shift in understanding of what teacher-librarians do,"

(p.16), and Farmer (1994) agrees, stating that it is imperative they shed the old paradigm as "keepers of books," and move towards one of facilitator and information specialist. Literature reviewed for this paper supports the view that teacher-librarians become instructional leaders, effective change agents, and models for the rest of the school and the educational community. Their role has to become pivotal and multi-faceted: communicator, leader, consultant, information specialist, resource evaluator, manager, instructor, collaborative planner, facilitator, and teacher.

However, the latter half of the 1990's has been a period of downsizing and fiscal restraint. Even though the literature on teacher-librarianship supports the essential role of a teacher-librarian, the number of such positions across Canada is being reduced. What role, if any, will teacher-librarians play? Will they become information specialists trained in the acquisition, dissemination, and use of information? Will they be considered valued colleagues with a vast knowledge of resources useful to the work of teachers and students? What role will they play in ensuring that students become information literate? According to Brown (1993), teacher-librarians:

> have been at the forefront in restructuring, in changing [their] profession in order to meet the challenges of an Information Age. Yet, in the major efforts at educational reform and restructuring, the school's learning resource centre and the role of the teacher-librarian appear to be overlooked. The problem, I believe, relates to leadership. (p. 10)

In this chapter, I will examine the role of the teacher-librarian in the context of a paradigm shift. By investigating the notion of the teacher-librarian as an instructional leader, change agent, and information specialist in working with teachers and students in the school, I will articulate the present role of teacher-librarians, and examine how it needs to change in view of how education and information has changed. The paper will provide synthesis and guidelines for practising teacher-librarians.

**Leadership and Teacher-Librarianship: Standards and Guidelines**

Burdenuk (1992) suggests that the leadership role of the school principal is one of the most significant elements in the success of a school. Is it equally true, then, that the leadership role of the teacher-librarian is one of the most important elements in the success of the school library resource centre and its program? Davis (1992) notes that leadership is perceived often as pertaining only to formal leaders:

> The traditional view of a leader has been one who plans, controls, organizes, and manages an organization, usually from an appointed or elected position, and frequently from a position of power: The Principal, The Board Director, The President, The Premier, The Boss. (p. 20)

Recently, however, much attention has been given to the role of school library resource centres, and shared decision-making, team leadership, and teacher leadership. It is within this context that the teacher-librarian is seen as an educational

leader and change agent.

Over the past several decades, the educational system has attempted to adapt to the ever-changing needs of society. Haycock, cited in the policy document from the Newfoundland Department of Education, Learning to Learn (1991), states "what has emerged is an institution which focuses on the development of individuals who are prepared to think rationally and logically for themselves and to assume responsibilities" (p. 49). For schools, this has meant a greater emphasis on learner-oriented methods such as inquiry and discovery learning. The Learning to Learn document sees the role of a teacher-librarian "as a highly skilled teacher, able to function on the school team as a professional with competencies from teacher education and classroom experience as well as competencies of school librarianship and media services" (p. 49). In other words, the teacher-librarian must be a leader.

The Calgary Board of Education Teacher-Librarian Resource Manual (1993) describes the teacher-librarian as a change agent and leader:

> Teacher-librarians have a great capacity to affect change. For change to occur within the school program and for information technologies to be successfully integrated into learning programs, the teacher-librarian must assume a leadership role, one that assures that the change process is positive and continuous. Changes include new ways of thinking about learning and teaching, as well as, alternative ways of accessing, evaluating, interpreting, and utilizing information and ideas. (p. 20)

The Toronto Board of Education Teacher-Librarians (as cited in Brown and

Sheppard, 1997) provides a further description of the teacher-librarian as an educational leader. They view themselves as providing educational leadership that will "encourage and support all students in becoming life-long learners and agents of change" (p. 201). Brown and Sheppard note that:

> This educational leadership will take the form of collaboration with teachers: sharing professional expertise in curriculum design, learning and teaching strategies, and resource materials; serving on various committees; seeking opportunities for professional growth; extending the professional growth of administrators, teachers, and support staff, especially in technology, and facilitating the sharing of information with other agencies. (p. 201)

The Ontario Ministry of Education and Training document Information Literacy and Equitable Access: A Framework for Change (1995) contends that as the education system adapts to meet the information needs of students, there is a need to re-examine the role of the teacher-librarian. It suggests "the emerging role of the teacher-librarian has three key areas of responsibility: educational leader, information manager, and access agent" (p. 11), and that "teacher-librarians have leadership roles to play in providing professional development and in planning integrated information literacy programs" (p. 6).

According to the Association for Teacher Librarianship in Canada (ATLC, 1996) a professional teacher-librarian provides leadership in: the use of newer technologies and resource-based learning, implementation of new curriculum with

colleagues, initiation of cooperatively planned and taught programs to support existing curricula, the development of collaborative relationships, and the implementation of change. Information Power: Guidelines for School Media Programs (1988), published by the American Association for School Librarians (AASL), calls on library media specialists (teacher-librarians) to provide leadership and expertise in the integration of educational and informational technology into instructional programs. In many of the documents quoted above, more detailed descriptions of the role of the teacher-librarian have been included. For instance, in Learning to Learn (1991), the major areas of competency of a teacher-librarian are outlined and include: administration of the learning resources centre program; selection of learning resources; acquisition, organization and circulation of learning resources; design and production of learning resources; information and reference services; reading, listening, and viewing guidance; promotion of the effective use of learning resources and services; and cooperative program planning and teaching.

According to Haycock (as cited in Learning to Learn, 1991) one major competency is that of professionalism and leadership, or "the ability to develop and promote the use of human and material resources of the school resource centre and its facilities through cooperative professional activities" (p. 56). This competency was further defined and included the following responsibilities:

- develop a strong team approach with other teachers
- lead in-service education programs on the effective use of the resource centre
- develop criteria for the selection of materials
- design resource-based units of study
- promote and demonstrate the use of audio-visual equipment
- encourage voluntary reading
- develop and implement media, research and study skill development programs, cooperative teaching, and community resources
- share techniques and strategies for using learning resources
- involve students and staff in establishing learning resources policy and service guidelines
- plan strategies for developing, presenting, and securing support for learning resource services
- serve on local and district curriculum committees
- participate in the school's educational program by serving on advisory groups and committees and working with the student extra-curricular program.

Many of these competencies have been updated. In Competencies for

Teacher-Librarians, Preliminary Draft (1996), the ATLC and the CSLA articulate that there is a growing body of research demonstrating that schools having a library and a qualified teacher-librarian have a positive impact on school culture and student achievement. This document also has sections on: the education of teacher-librarians', areas of competence for teacher-librarians, collaboration and leadership, individual student and teacher consultation, selection of resources and access to information, management of programs, and Students' Bill of Information Rights. In doing so, it states that "a professional teacher-librarian provides leadership: in implementing new curriculum with colleagues and in initiating cooperatively planned and taught programs to support existing curricular" (ATLC, On-line, 1996).

One sees, emerging from the literature, the consensus of a leadership role for teacher-librarians. This consensus is easily identified and verifiable in provincial, national, and international publications. To quote one source, "Leadership is the crucial factor in creating a quality library media program that is an integral part of the school curriculum" (AASL & AECT, 1988, p. 2).

As we approach the next millennium, a window of opportunity has opened for both school library resource centres and teacher-librarians to become forces for educational excellence. The many recent educational reform movements, initiated as a result of comprehensive reviews on both national and provincial levels, have resulted

in new statements of purpose, mission, vision, goals, objectives, and curriculum revision. They have brought a new commitment to excellence and a renewed enthusiasm for school improvement and effectiveness programs.

Of significance to teacher-librarians and school library resource centres in Newfoundland and Labrador is the document Learning to Learn (1991), in which the Department of Education commits itself to the development of resource-based learning in all schools. Its focus is on the learner and the development of strategies and skills for independent, lifelong learning. It stresses the importance of research and study strategies and skills, activity based learning, and focuses on the process rather than the product. This commitment to placing students at the centre, through the provision of learning experiences which actively involve them in the learning process, has done much to promote the paradigm shift towards leadership sought after by teacher-librarians.

## Educational Leadership

Taylor (1994), writing for teacher-librarians, presents a comprehensive overview of the literature on educational leadership. She begins by identifying the problem with defining this concept:

> It is quite apparent in the literature that there does not exist one simple definition, list of descriptors, or theoretical model ... of either the theory or practice of leadership in education. However, it is apparent that many connections exist among the various definitions,

descriptors, and theories. (p. 9)

She then describes nine major "definitions, descriptors and theories" (p. 9). A summary of her findings are shown in Table 1.

Taylor's review of educational leadership makes it clear that some aspects of the older theories form part of the newer theories, many of the theories seem to coexist throughout their development, and any new theory would appear to have aspects from previous theories. In considering the implications of these research findings, teacher-librarians might strengthen their leadership skills by drawing on the theories' commonly held views. For instance, the teacher-librarian can be influential, states Burdenuk (1992), through "expert power" (p. 21) by demonstrating skills related to curriculum and instruction: cooperative program planning; information technologies; consultation; and management and administration of the learning resources in the school. In these ways, the teacher-librarian is an instructional leader.

## The Changing Role of the Teacher-Librarian

While major efforts are ongoing to reform and restructure the educational system, and at the same time, new theories about educational leadership are evolving, the role of teacher-librarians has been overlooked.

Table 1

Summary of Taylor's Overview of Literature on Educational Leadership

| Theory | Main Characteristics and Findings |
|---|---|
| Trait | • Attributes particular characteristics to leaders; traced to Aristotle<br>• Traits relate to personality<br>• Specific traits cannot be used for predictive purposes |
| Behavioural | • Focuses on what leaders do; based on inputs, feedback loops<br>• Popular in the 1950's; scientific emphasis<br>• Criticized because of lack of attention to the context |
| Situational | • Takes 'situation' into account<br>• Uses 'people' leadership style or 'task' leadership style<br>• 'Situationally sensitive' in approach to decision making |
| Instructional | • Atmosphere conducive to influence school's instructional program; committed to lifelong learning; instruction and learning emphasized<br>• School environment focuses on and facilitates learning<br>• Principal is coordinator of teachers as instructional leaders |
| Transformational | • Current view of leadership; mix of old and new ideas<br>• Leadership is collective, dissentual, causative, and purposeful<br>• Emphasizes collegial and collaborative nature of work<br>• Type of leadership required for change; sees the big picture |
| Value-Added | • Emphasizes restoration of spirit and heart<br>• Strong commitment – never give up until job is done well<br>• Characteristics include: provision of symbols; enabling teachers; accountability; motivation; and collegiality |
| Community of Leaders | • Leadership role determined by organizational rank<br>• Students, parents, teachers, principals all a leader in some way<br>• School culture is collaborative |
| Women as Leaders | • Female leaders practice a more democratic style than males<br>• Committed to collegiality and participation in decision making<br>• Adheres to feminine principles of leadership: caring, making intuitive decisions, not getting hung up on hierarchy, sensitive |
| Organizational Leadership | • Concerned with anything other than individual first<br>• Leadership traced through organization; authority extended to bottom<br>• Five dimensions – systems thinking, personal mastery, mental models, shared vision, team learning |

According to Brown (1993):

> In the major efforts at educational reform and restructuring, the school's learning resource centre and the role of teacher-librarians appear to be overlooked. The problem, I believe, relates to leadership with leaders in teacher-librarianship and leaders in curriculum areas not making the links or connections with each other that we require if we are to meet the needs of today's students. (p. 10)

Brown argues that teacher-librarians need to understand the concepts of *educational reform and restructuring, including* "leadership for change," if they are to function as change agents, especially at the school level. They need to be aware of misconceptions of their role and other barriers preventing them from becoming leaders.

**Misconceptions and Barriers**

The role of the teacher-librarian has been described as one of information specialist, teacher, and instructional consultant (AASL, 1988). However, the role as *a leader or instructional consultant has not been readily accepted or recognized* within the administrative hierarchy. A number of reasons have been postulated for this.

One reason, suggests Brown (1988), is that the position of teacher-librarian "has neither the authority or prestige" (p. 14); nor has the position been seen as essential. Hughes (1997) states that: "the role of the teacher-librarian is not necessarily recognized as important" (p. 7). Traditionally, Farmer (1994) suggests "others have viewed teacher-librarians as keepers of the books" (p. 20), and generally,

they find themselves vastly outnumbered within the educational community. Since they are a small minority in the community of professional educators, their existence is insecure especially during these difficult economic times. As a result, administrators and board directors are often forced to cut in the areas of least resistance in order to make do with less. Others may view the position as expendable because they do not recognize the actual impact the teacher-librarian and the school library resource centre has on student learning outcomes, despite the fact that "there is a growing body of research demonstrating that a qualified teacher-librarian has a positive impact on school culture and student achievement" (ALTC, On-line, 1996). Studies have established that teachers collaborate in schools with teacher-librarians and that students read more, write better, access and use information more effectively, and excel in the content areas.

Another misconception is that of image. Barron and Bergen (1992) state that one of the barriers that must be overcome by teacher-librarians "is the traditional negative stereotype of the librarian" (p.524) or as Farmer (1994) puts it "matron" and "keeper of the books" (p.20). That this stereotype exists comes as little surprise; it is also a difficult one to shed, even if it has been inaccurate for years. Furthermore, to some teachers and administrators, the teacher-librarian may not be accepted as a teacher in the educational community, but rather viewed as a "non-teacher." For

instance, Brown (1988) states that teacher-librarians " will be judged by the tasks they perform. Teachers who only see the teacher-librarian performing clerical or technical duties will perceive the role as only clerical or technical" (p. 14). Even many teacher-librarians themselves have misconceptions and misunderstandings about their position and role.

In an attempt to arrive at an understanding of why teacher-librarians find themselves in this situation, Brown (1993) suggests the need to examine what is known as the *social architecture* and *the culture of schools*. According to Bennis, (as cited in Burdenuk, 1992) social architecture "governs the way people act within an organization. It includes the values and norms that people have, and the binding and bonding that takes place" (p. 111), or simply put, the way things are done in a school. The acceptance of the role of the teacher-librarian as an educational leader will require a significant shift in the social architecture of a school. For example, as Brown (1990) noted:

> An educational innovation such as cooperative program planning and teaching is a complex process which will require teachers to learn how to do their work differently. To implement it will require some classroom teachers to learn how to use a wide range of resources effectively, to plan and team teach with a teacher-librarian, to allow students more control over learning than perhaps they had before. (p. 22)

In many instances, teaching practices have not changed yet changes in

expectations for that practice have. Many teachers still rely on textbooks, worksheets and workbooks, whole class lectures, and passive classroom activities, despite new curriculum guidelines and research advocating learning and instruction which is *individualized to meet the learning needs and styles of individual students.* Students, using a variety of resources, need to be actively engaged in the learning process, if they are to cope with an information-based society, and be equipped with the strategies and skills to become an independent life-long learner (Howe, 1997). Yet, *many teachers and schools are not meeting these expectations. This being the case,* there is no need for a school library resource centre and / or a teacher-librarian. However, Craver (1995), contends "educational and technological changes, are combining to close the chapter of the single teacher, textbook, classroom approach to learning" (p. 17). *Nevertheless, such a system, in which the emphasis is placed on* the textbook, is not adequately preparing students for the twenty-first century. Yet Thornburg (as cited in Pappas, 1997) states "as long as we perceive the mind as a vessel to be filled rather than as a fire to be kindled, this structure serves us well" (p. 32).

Studies conducted over the past several decades on the social architecture of schools have identified the existence of *isolation* in many schools. According to Lieberman and Miller, (as cited in Burdenuk, 1992) "it is perhaps the greatest irony --

and the greatest tragedy of teaching -- that so much is carried out in self-imposed and professionally sanctioned isolation" (p. 17). Such isolation makes it very difficult for teachers to exchange ideas among themselves and with administrators, and as such, impedes professional growth and change. Rosenholtz (as cited in Burdenuk, 1992) regards it as "perhaps the greatest impediment to learning to teach or to improve existing skills, because it forces teachers to learn by trial and error" (p. 17). This form of teacher isolation may be one contributor towards static teachers. In turn, it may be a major factor preventing the integration of the school library resource centre and the teacher-librarian into the curriculum of a school.

Another perspective on *teacher isolation* is that during a typical school day teachers only see each other on their way to and from class, at lunch and recess break, or on their way out of school at the end of the day. Yet, while they are teaching together many teachers are invisible to each other. By contrast, in many other professions, success depends upon teamwork, professionals working together. Such isolation may contribute towards the tendency of teachers to resist change and may be an important factor in the prevention of the integration of the school library resource centre and the teacher-librarian into the school's curriculum.

However, when schools and teachers begin meeting the expectations required of them, and genuinely make the effort to implement current practices as outlined by

the research literature and government and school board's curriculum outcomes, then the school library resource centre and the teacher-librarian will have the potential to be viewed as essential components in a school where students are provided with the strategies and skills required to become independent life-long learners.

**Need for Self-Assessment**

According to Ontario's Information Literacy and Equitable Access (1995), teacher-librarians should "take advantage of opportunities for educational leadership, re-evaluate their skills, and if required to, retrain to meet the information literacy needs of students and teachers" (p. 11). It further states that "they must learn to broaden their focus from teaching students to helping teachers integrate information skills training into their classroom curriculum" (p. 11). The point is that teacher-librarians have strengths that need to be capitalized on; for example, they are the schools' information specialists who know how to organize information and how to retrieve it. The Ontario document makes the case that they must become more visible, assume a role that includes more interaction with their educational counterparts, and be viewed as valuable so that the position does not become expendable. They need new paradigms, new frames of analysis, and new ways of seeing themselves and what they do. According to this view, to continue to adhere to tradition and refusal to shift from old paradigms would be a recipe for disaster.

**Transformational Leadership**

Brown (1993) made the argument that teacher-librarians must engage in transformational leadership. According to Brown, transformational leadership is multidimensional in nature, and has six key practices. They include:

- Identifying and articulating a vision -- practices on the part of leaders aimed at identifying new opportunities for the school, and enveloping, articulating, and inspiring others with a vision of the future.

- Providing an appropriate model -- practices on the part of leaders that set an example for others to follow that is consistent with the values that the leaders espouse.

- Fostering an acceptance of group goals -- practices on the part of leaders aimed at promoting cooperation among teachers and assisting them to work together toward a common goal.

- High performance expectations -- practices that demonstrate the leaders' expectations for excellence, quality, and / or high performance on the part of others.

- Providing individualized support -- practices on the part of leaders that indicate that they respect others and are concerned about their personal feelings and needs.

- Intellectual stimulation -- practices on the part of leaders that challenge others to re-examine some of their assumptions about their work and rethink how it can be performed. (p. 12)

Using these six practices as a framework, she maintains that teacher-librarians can bring about the needed changes within the school and those around them.

**Need for Vision**

The literature on educational leadership is replete with references to the importance of *vision*, not in a mystical or religious sense but in the notion of outcomes, goals, dreams, a set of intentions and directions. Bennis (as cited in Burdenuk, 1992), an influential author on leadership, sees the creation and implementation of vision as the first strategy for effective leadership. He states:

> The absence or effectiveness of leadership implies the absence of vision, a dreamless society, and this will result, at best, in the maintenance of the status quo or, at worst, in the disintegration of our society because of lack of purpose and cohesion. (p. 23)

Influential and contemporary writers such as Barth (1990), Kouzes (1990), Fullan (1991), and Sergiovanni (1992) (as cited in Burdenuk, 1993) all emphasize the significance of vision. Fullan (1993), for example, states "I cannot stress enough that personal purpose and vision are the starting agenda" (p. 13) and "visions are necessary for success" (p. 28). Thus, by inference, it would seem that there is a strong and consistent relationship between the presence of a teacher-librarian's vision and the effectiveness of a school's library resource centre's program. The creation and implementation of that vision are crucial to the role of the teacher-librarian as leader.

There exists many definitions of vision. Sheive (as cited in Burdenuk, 1992) defines it as "a blueprint of a desired state ... an image of a preferred condition that we work to achieve in the future" (p. 23). For teacher-librarians it is their dream, or

desired state, which allows them to see the school library resource centre and its programs, not as they are, but as they might become. According to Peters, (as cited in Burdenuk, 1992) vision should:

- be inspiring
- be clear and challenging and about excellence
- make sense and stand the test of time
- be beacons and controls
- be empowering
- prepare for the future but honour the past
- be lived in details not broad strokes (p. 23)

As Burdenuk (1993) states, "there exists some outstanding statement of vision for school library programs in the literature (CSLA, 1988; AASL, 1988,) that can be rented, stolen, copied, or even imported" (p. 23). Teacher-librarians can also create an original vision by reflecting on statements such as:

- I want the school library resource centre to become ...
- The kind of school library resource centre I would like to work in ...
- When I leave this school library resource centre I would like to be remembered for....

Answers to such statements or questions provide a beginning to the creation of one's personal vision, or that of the school library resource centre. When the vision has been formulated, reflected upon, refined, and reworked, it must be promoted and communicated to others for support and implementation in order to make it a reality.

The extent to which how successful the teacher-librarian and the school library resource centre will become is dependent upon how effective the teacher-librarian will be in adhering to the vision. Burdenuk (1992) states that "creating, communicating, and implementing the vision and mission of the school library program are central to the role of the teacher-librarian as leader" (p. 23). As well, it is imperative that teacher-librarians enthusiastically accept the vision, and, as Bennis ( 1987) states "model it to make that vision clear to others" (p. 198) so it will become a reality. They need to be committed to incorporating the vision through personal demonstration, thereby fostering it, so that "decision makers will adopt it and integrate it"(Hughes, 1996, p. 10). Teacher-librarians work with all levels of their schools' staff to ensure successful development and implementation of the vision. They cannot effect the change alone. They have to develop support structures, maintain awareness, recognize needs, plan accordingly, and monitor outcomes for student and teacher success. Burdenuk (1993) states that "teacher-librarians with clear vision who take deliberate steps to move towards their vision create excellence in school library resource centre programs" (p. 24). In this way, they are "practising what they are preaching" and setting an example so that others may follow.

**Change in the Culture**

The acceptance of the teacher-librarian as an educational leader will also

require a significant shift in the *social architecture* of the school. If teacher-librarians are to become effective change agents, then they need to change the conditions under which they work. Clearly, a change in staff attitudes will be required. This may be difficult but needs to be understood if staffs react defensively. Teacher-librarians should assume a more significant professional role in the determination and attainment of curriculum outcomes. As an effective leader, the teacher-librarian builds a collaborative, collegial atmosphere where staffs discuss, plan, and implement curriculum outcomes, share teaching strategies and responsibility for the achievement of goals, and enhance and support each others efforts through cooperative professional activities.

Teacher-librarians, according to Brown and Sheppard (1997) , who "work with the teacher to plan, design, deliver, and evaluate instruction ... is [are] viewed as the essential link to connecting students, teachers, and others" (p. 200). Furthermore, they state that they [teacher-librarians] "are an integral part of the total educational team" (p. 201). Fullan (1993) states that: "teachers must work in highly interactive and collaborative ways, avoiding the pitfalls of wasted collegiality, while working productively with other teachers" (p. 81). However, the notion of cooperative program planning and "teaching partner" will require a shift in mind, from the concept of the teacher working in isolation to one in which teachers and teacher-librarians

work together as professional colleagues. Teacher-librarians need to work more closely with their educational counterparts to accommodate such a change. Haycock (1997) states that "students learn more and produce better research products following planned, integrated information skills instruction by the teacher and teacher-librarian together" (p. 29). Hargreaves (1995) says that "working together is not just a way of building relationships and collective resolve. It is also a source of learning. Such collaborative cultures turn individual learning into shared learning" (p. 17). This being the case, teacher-librarians should provide information to satisfy the needs of staff members; engage in frequent discussion about current teaching practices; and cooperatively plan, design, research, evaluate, and prepare teaching materials with classroom teachers so it becomes the norm. According to Schmuck and Schmuck, (as cited in Burdenuk, 1992) "teachers who are comfortable cooperating with one another tend to feel comfortable asking their students to cooperate in the classroom. They view the school as a community of humans engaged in cooperative learning and cooperative development" (p.19). This collaborative model has been long advocated by teacher-librarians, and hence, provides a unique opportunity for teacher-librarians to become school leaders.

With the present thrust towards school improvement and school effectiveness programs, one positive aspect is the emphasis on building a collegial or collaborative

structure within the school. Teacher-librarians should develop, with colleagues, a shared vision for learning which incorporates a plan for the integration of the school library resource centre into various units of study. According to Fullan (1993), "a shared vision is a vision that many people are truly committed to, because it reflects their personal vision" (p. 28).

Haycock, as cited in Learning to Learn (1991), says teacher-librarians should possess a competency in cooperative program planning and teaching which includes "the ability to participate as a teaching partner in the accomplishment of identified learning objectives through a knowledge of recommended resources and appropriate learning strategies" (p. 55). In particular, the document states that teacher-librarians must be able to:

- Develop cooperatively with teachers a sequential list of media, research, and study skills for cross-grade and cross-subject implementation.
- Plan and develop units of work with teachers from the setting of objectives to evaluation.
- Pre-plan with teachers and teach skills integrated with classroom instruction to large and small groups and individuals.
- Provide leadership to develop programs which integrate the promotion of reading with the total school program and with individual teacher programs. (p. 55-56)

**Need for Professionalism**

It is clear and obvious from the research reviewed, that to be effective,

teacher-librarians should take charge of their profession by assuming a leadership role. The Ontario Ministry of Education and Training document, Information Literacy and Equitable Access (1995), states that teacher-librarians have to "assume leadership responsibilities, and with their cross-disciplinary roles, they can facilitate integrated program planning" (p. 11-12). Hughes (1997) supports that view, in that, teacher-librarians should "start self promoting their leadership" (p. 10). Brown and Sheppard (1997) state that "teacher-librarians need to be leaders in this new environment ... by placing a priority on staff development" (p. 201). Thus, one way teacher-librarians may initiate leadership is by promoting cooperation and collaboration among their staff.

The ALTC and CSLA(1998) state that teacher-librarians are "committed to program excellence" (p. 4). They seek feedback and use it for improvement in striving for excellence and quality. Therefore, they should commit themselves to service and quality, in order to be the best they can be. This, according to Brown and Sheppard (1997), "requires a commitment to lifelong learning, to constantly upgrading one's skills, to keep current" (p. 208). Burdenuk (1992), suggests they "learn more" (p. 22) in their attempt to become an educational leader.

Teacher-librarians are expected to demonstrate practices that enhance personal development, express enthusiasm for the school library resource centre program, and

use and incorporate practices into cooperatively planned experiences. Within this context, according to the Calgary Board of Education (1993), teacher-librarians will need to "enhance their knowledge of new developments and their application to the learning process" (p. 20). It is necessary, they be knowledgeable about future trends and development. Brown and Sheppard (1997) contend that "teacher-librarians need to be knowledgeable about recent research and developments in teacher-librarianship" (p. 206). The ATLC and CSLA (1996) state that the teacher-librarian "keeps abreast of current developments in educational change, for example, curriculum, instructional strategies, new technologies, and innovative developments" (p. 4).

Teacher-librarians should be positive, exploratory, and open to new approaches to learning, and share their expertise. Davis (1992) states that the teacher-librarian "models the way and sets the example" (p. 21) to influence others, and implement changes. Teacher-librarians set goals and tasks that can be reached with a reasonable effort because "failure may impede future efforts" (Davis, 1992, p. 21). Teacher-librarians should understand and model their roles since they will be judged by their actions. Wehemeyer (1987) believes "the library media specialist [teacher-librarian] models cooperative curriculum development" (p. 202). The lessons and units teacher-librarians develop may just be the spark to ignite others. Wehemeyer (1987) suggests that "just one teacher pleased with the result of

collaborative planning becomes a living advertisement" (p. 202) for the others on staff. Teacher-librarians should model the same willingness. They may have to go to great lengths to prove to others that their new approaches can and will work.

The ATLC and CSLA (1996) state that the teacher-librarian "needs to be a *highly skilled teacher as well as a librarian*" (p. 2). *Research in school librarianship*, reviewed by Haycock (1995), also supports this view. Teacher-librarians should "display the traits of exemplary teachers as well. They plan with teachers, design flexible policies, use flexible and innovative approaches, teach well, and develop collections in support of the curriculum" (p. 228). Barron and Bergen (1992) say that the teacher-librarian "should be a master teacher, able to work with classroom teachers" (p. 523). Brown (1988) contends that "the teacher-librarian's role is a dynamic one, requiring a master teacher who can assume a key role in curriculum implementation in the school, as well as someone who will be at the forefront" (p. 35). Anderson (1993) suggests that if "teacher-librarians aren't in the forefront, more aggressive classroom teachers may reduce their status" (p. 25). Therefore, teacher-librarians need to have the sheer personal initiative, motivation, commitment, and determination.

**Action Research**

All teachers, including teacher-librarians, may model their professionalism by

engaging in "action research." According to Todd (1997), this "research methodology combines research outcomes with forward action in dynamic and flexible ways" (p. 31). Rehlinger (1988) states that "it is a cyclical rather than a linear process and is characterized by a heavy emphasis on data gathering and diagnosis before the planning and implementation of any actions" (p. 9).

The literature on action research generally identifies five basic stages: (1) identification of a problem, (2) a plan for collection and organization of the data, (3) implementation of actions, (4) observation of the results, and (5) reflection of the results. Todd (1997) says that, first, an issue or problem is identified where there is agreement to want to improve what is happening; second, a team develops a plan to investigate the concern; third, the team implements actions to improve the situation; fourth, the team observes the effects of the actions; and fifth, the team reflects on the actions for further improvement and action. According to Todd (1997), "considering the rapidly changing nature of the information environment and its relentless impact on redesigning schooling and information services, action research is an essential component for teacher-librarians in planning and creating their preferred future" (p. 31).

Todd (1997) further states:

> It is one way of enhancing the profile of the teacher-librarian in the school and has the potential to open doors to new opportunities and

> unexpected outcomes. It has enabled the teacher-librarian in the school to be an effective and ongoing change agent. (p. 39-40)

Considering the perceived role of the teacher-librarian as a keeper of the books to that of a learning centre curriculum / information expert, this method of research is a significant educational change agent for teacher-librarians.

**Teacher-Librarians as Mirror-Images Plus**

Galbraith and Lawler (as cited in Brown and Sheppard, 1997) provide an image of role structures for professional environments. Referred to as the "mirror-image" and "mirror-image plus" structure, they suggest "employees will be mirror-images of each other but also able to add expertise as part of their work when required -- in other words, act as mirror-image plus when needed" (p. 200). Brown and Sheppard (1997) contend that teacher-librarians can be effective team players and leaders in schools that are learning organizations by following this model. They advocate that teacher-librarians "must function both as members of teams engaged in organizational learning and as leaders of leaders ... and therefore must be a mirror-image of other teacher leaders, while also bringing added value as a leader in teacher-librarianship" (p. 200). However, to meet the demand, teacher-librarians will need a unique blend of characteristics in four categories: (1) knowledge base, (2) technical skills, (3) personal, interpersonal, and team skills, and (4) a particular system of values and beliefs. Some characteristics within each category will be shared by teachers and

teacher-librarians, which means they will be mirror-images of each other. On the other hand, teacher-librarians will also be expected to possess added qualities -- the plus of the "mirror-image" plus. For instance, teacher-librarians must be mirror -- images of the teachers they work with. They must be credible as teachers committed to the resource-based learning concept, and able to implement this particular learning strategy.

Furthermore, they must be "knowledgeable about recent research and developments in teacher-librarianship, have advanced skills in instructional development and informational technology, and in accessing information and learning resources" (Brown and Sheppard, 1997, p. 205-206). This is the "plus" side.

As Brown and Sheppard (1997) found in their research, teachers are expected to relate well to students, be collaborative and flexible, have pleasing personalities, be facilitators rather than lecturers, be strong communicators, and exhibit leadership. Teacher-librarians are expected to have this mirror-image. However, as mirror-images plus, they must take risks and display a high tolerance for change and innovation.

Another example from Brown and Sheppard (1997): Teachers value lifelong learning and believe in providing equal opportunity for all students -- this is the mirror-image held by teachers and teacher-librarians -- however, the "plus" is the

values and beliefs essential to the role of teacher-librarians: creation of a collaborative learning environment, commitment to independent lifelong learning, and commitment to access of information.

This particular concept is consistent with positions articulated by the International Association of School Librarianship, the Association for Teacher-Librarianship in Canada, and the American Association of School Librarians, in that school librarians be professionally qualified, both as a teacher and as a librarian, and function within a resource-based learning environment.

Teacher-librarians should provide individualized and ongoing support to staff members, not only with appropriate information, resources and instruction, but also with collegial understanding as those teachers struggle with new ideas and approaches. They have to lend a helping hand at critical moments in order to lay a foundation for other shared undertakings. Teacher-librarians ask, inform, suggest, and support teachers even during brief encounters with staff members in the faculty lounge or in the hallways. Conversations in the corridor, memos, demonstrations, and discussions all have a positive and cumulative effect as teachers shift toward a vision such as cooperative program planning and resource based learning. As soon as this initiative is put in place, personal encouragement and support are in order. It is imperative, according to Hord and Huling-Austin, (as cited in Brown, 1990) that

teacher-librarians provide "personalized information for specific teacher's needs and facilitating each teacher's use of the new program by clarifying meaning and solving individual problems" (p. 27).

In presenting its personal competencies for teacher-librarians, the ATLC and CSLA (1998) state that the competent teacher-librarian:

- is committed to program excellence
- seeks out challenges and sees new opportunities both inside and outside the library
- sees the big picture
- works well with others in a team
- looks for partnerships and alliances
- plans, prioritizes and focuses on what is critical
- is committed to lifelong learning
- is flexible and positive in a time of change (p. 4-5)

The teacher-librarian is a skilled teacher trained with a combination of teacher education, classroom experience, and courses in teacher-librarianship and information studies. However, it should be noted that successful completion of formal course work does not guarantee success as a teacher-librarian.

In the final analysis, the research indicates that teacher-librarians need to re-

examine some assumptions about their work and how it can be performed. This will require all personnel to become thinkers and lifelong learners. Teacher-librarians will have to continuously monitor how things are proceeding and devise criteria to evaluate the result of the change and improvements. They constantly reevaluate their methods and seek new ways of meeting challenges. Both teachers and teacher-librarians have to be united in wanting to improve and see the need to become lifelong learners. Along the way, it has to be made clear that there are no failures, only mistakes that will give them feedback and point them in another direction, or what to do next.

## Conclusion

Teacher-librarians are highly skilled teachers, with competencies provided by teacher education programs, classroom experience, and courses in teacher-librarianship. As they approach the new millennium, a challenge awaits them. They need to take the school library resource centre to the forefront of curriculum and staff development. They are in a unique position to provide the leadership and to become the catalysts for that change. They need to begin by assuming a leadership role based on commitment, modelling, collaboration, empowerment, innovation, vision, goal setting, and planning.

To profit from this change, the research indicates that they will need new

paradigms, new frames of reference, new ways of seeing themselves and what they do. They will have to view the present as a time of renewal and an opportunity for change; a time to enhance their status and reaffirm their importance within the educational arena: a window of opportunity. However, they will also have to realize that it will require additional energies, work time, and more support than ever before. Teacher-librarians, if they are to succeed, will have to embrace their changing roles and take charge of their profession by enhancing the position and reaffirming its significance in preparation for the new century. The importance of information, its utilization and access, and the emerging informational technologies will provide them with that opportunity. At this critical time for teacher-librarians, the climate is ripe for change.

*Chapter Four*

# Paper Three

## Preparing Students for an Information Society

## *Chapter 4*

Paper Three: Preparing Students for an Information Society

### Introduction

In the past, many students relied solely on the knowledge of teachers, the textbook, and the information skills of the teacher-librarian. At that time, it was reasonable and acceptable that one could learn a wealth of information through memorization and recall of this knowledge. However, today, information is doubling every three years or faster, "far surpassing the ability to read and write, to code and decode, or the human mind to discover, sort, and absorb" (Ross and Baily, 1995, p. 31). Many educators realizing that this is an age where knowledge and information are expanding at such an exponential rate, see a distinct need for a shift from mere passive absorption of knowledge and information. They realize that students have to become more active learners and create their own knowledge through interaction with a variety of informational sources. It is for this reason that a new literacy has emerged in the educational literature -- information literacy.

Hashim (1986) states that "a basic objective of education is for each student to learn how to identify needed information, locate and organize it, and present it in a clear and persuasive manner" (p.17). Craver (1995) states that "information literacy will be an essential survival skill" (p. 17) to function effectively in the twenty-first

century. There are now huge quantities of information available through new technologies -- the CD-ROM, Internet, videodisc, on-line databases, and automated card catalogues. Students also require the ability to use that information to effectively solve problems and make decisions. These are essential components for academic success. The skills required to deal effectively and competently with information are central to the mission of a school library resource centre. The role of the teacher-librarian is to teach, model, articulate, and advocate these new literacy skills in helping students navigate through the information era and into the new millennium. In doing so, however, it is necessary to change some practices that no longer fit the realities of this technologically changed world.

This paper examines the research literature for an understanding of information literacy and models for teaching information literacy strategies and skills, as developed by others in the teacher-librarianship field, in order to develop a set of guidelines. These guidelines can be used by schools who wish to change their programs in information literacy to better meet current and future needs.

## The Information Explosion

"In just one short generation, the primary work of the world has moved from the use of muscle to the use of machines, machines that move information rather than goods" (Todd, Lamb, McNicholas, 1992, p. 19). During this period of time,

technology has undergone a tremendous change and has had a significant impact. No longer is it viewed as only a means to increase productivity, but now a method empowering people to store, access, and manipulate information to the point that it has transformed the economy from one based on an industrial model to one based on information. As a result, there has been a shift from an industrial to an "information society" -- one where the production of information and its accompanying technology are dominant. According to Todd, Lamb, and McNicholas (1992), "the speed at which this happened is quite extraordinary" (p. 19). For instance, they state that "ninety percent of all scientific knowledge to date has been generated in the last thirty years and the existing volume of knowledge is expected to double in the next ten to fifteen years" (p. 19). They also state that it took approximately 230 years between the invention of the Newcomen engine in the seventeenth century to the emergence of the jet plane in 1937, whereas it took only 36 years to develop computers that can now virtually mirror the ability of the human brain. The information revolution has occurred almost seven times faster than this, and there are no signs of it slowing down. This speed is creating anxiety for some. John Naisbett, (as cited in Breivik, 1996), is famous for his quotation "we are drowning in information, but starved for knowledge" (p. 65).

Today, the information base continues to grow and escalate at an exponential

rate. New book titles, periodicals, government documents, scientific writings, and newspapers, available in on-line databases, CD-ROM's, and through the Internet as well as in print form, have added to this avalanche of information. This steadily growing body of information is referred to by the term "information explosion" or "information revolution." For the most part, it is driven by rapid and dramatic developments in computer technology and advancements in telecommunications. It can be an extremely valuable resource that is readily available for those who know how and where to find it.

Predictions for the future suggest a paperless society based on multimedia and technology characterized by an electronic exchange of information across boundaries and between cultures. The technology is available to do this now. For instance, Project Gutenberg, (at Internet location -- ftp://ftp.prairienet.org/pub/providers /gutenberg/etext96), is cited as one of the best sources from which to download free electronic texts which can be read directly from a computer monitor, complete with illustrations. Its database has over 640 books, many of which are well-known classics. Such rapid transformations prompt many people to question the future and the role of education.

The current scope and pace of change demand that educators respond to the parameters which have been placed on them by the information revolution because its

impact is presently being felt at the school level. Many schools now have access to a multitude of information sources as a result of the new technologies -- online databases, the Internet, CD-ROM's, and videodiscs, to name a few. Curriculum planners require that students be provided with the knowledge and skills to participate in an "information society." As Kuhlthau (1995) states:

> The major challenge for the information age school is to educate children for living and learning in an information-rich environment. An understanding of the process of learning is one of the most important abilities to acquire in order to function in that information-rich environment. (p. 1)

As educators in an information age, teacher-librarians are in a unique position to be prime movers and catalysts for change. In their dual roles as teachers and librarians, they can provide the link between learning and information, and be the key facilitators in unifying education and the access to information. The shift in education from a teacher-textbook-centred learning environment to a student-process-learning one offered through the resource-based learning approach, and the shift in the role of the school library resource centre from a storehouse of books to a resource-based learning centre, has redefined the role of teacher-librarians. It has allowed them to perform a much more pivotal role in a school's instructional program by providing information services and teaching information literacy skills enabling students to function competently and confidently in a world of information. Teacher-librarians

are trained to organize information and retrieve it, to examine the reliability of sources of information.

**Information Literacy**

For students to survive in a world of abundant information they have to make many decisions about information. They need to answer questions such as: What is junk? What is biassed? What is authoritative? In other words, it is essential that they be information-literate. Todd (1995) claims: "For information professionals and educators, it represents one of the greatest challenges now and into the twenty-first century" (p. 21).

Information literacy has been seen by some as a buzzword for the information era. In an attempt to clarify exactly what is meant by the concept, various organizations and educators have defined it. In Information Literacy and Equitable Access: A Framework for Change (1995), information literacy is defined as:

> The ability to acquire, critically evaluate, select, use, create and communicate information in ways that lead to knowledge and wisdom. It encompasses all other forms of literacy -- *traditional literacy* (the ability to read and write) and *media literacy* (the ability to critically evaluate and create media, such as television, advertising, news stories and movies) and *numerical literacy* (the ability to understand and solve problems with data and numbers). (p. 54)

Todd (1995) defines information literacy as "the ability to use information purposefully and effectively" (p. 54).

Kirk, Poston-Anderson, and Yerbury (as cited in Todd, 1995) see it as:

> A holistic, interactive, learning process encompassing skills of utilizing information from sources, being able to consider it in light of current knowledge, adding to it existing knowledge, and applying this knowledge capably and confidently to solve information needs. In particular, the skills involved in this process are: defining the tasks for which information is needed; locating appropriate sources of information; selecting and recording relevant information; understanding and appreciating this information and being able to combine and organize it for best application; presenting the information learned in an appropriate way; and evaluating the outcomes in terms of task requirements and increases in knowledge. (p. 54)

In 1992, Doyle offered the following definition: " information literacy is the ability to access, evaluate, and use information from a variety of sources" (p. 30). She suggested that an information-literate person is one who:

- *recognizes that accurate and complete information is the basis for intelligent decision making,*
- recognizes the need for information,
- formulates questions based on information needs,
- identifies potential sources of information,
- develops successful search strategies,
- accesses sources of information including computer-based and other technologies,
- *evaluates information,*
- organizes information for practical application,
- integrates new information into an existing body of knowledge,
- uses information in critical thinking and problem solving. (p. 30)

The American Association of School Librarians in their Position Statement on

Information Literacy: A Position Paper on Information Problem Solving (1996) state that:

> To be prepared for a future characterized by change, students must learn to think rationally and creatively, solve problems, manage and retrieve information, and communicate effectively. By mastering information problem-solving skills students will be ready for an information-based society and a technological workplace. Information literacy is the term being applied to the skills of information problem solving. (p. 1)

Patricia Breivek, a primary leader in information literacy, and author of Information Literacy: Educating Students for the 21st Century (1996), states that information literacy gives:

> Individuals the ability to acquire and make use of reliable data relevant to a personal or professional problem. Information literacy implies knowing:
> 1. when information is needed
> 2. what kind of information is needed
> 3. how to get the needed information
> 4. how to evaluate the quality / suitability of acquired information (particularly important in an age when people tend to believe anything the computer tells them).
> 5. how to use acquired information for problem solving or decision making. (p. 65)

The Ontario School Librarians Association's (OSLA) Policy on the School Library Information Centre and Role of the Teacher-Librarian (1996) postulates the following definition for information literacy:

> The ability to complete successfully a complex problem-solving process that requires students to defining a search strategy, locating

> the needed resources, accessing and understanding the information that is found, interpreting the information, communicating the information, and evaluating conclusions in view of the original problem. (OSLA, Teaching Librarian, 1996, p. 23)

Obviously, there exists many definitions of information literacy and what makes an individual information-literate. In essence, most authors agree that it requires an individual to locate, evaluate, and use information resources to competently solve problems and make decisions. These resources may be from books, newspapers, videos, the Internet, CD-ROM's, or any other format, and the individual may be a student doing a research project, a consumer buying a product, or an employee on a work assignment.

**Early Evolution of Information Literacy**

The concept of information literacy is not entirely new, despite recent definitions and developments. According to Loertscher and Woolls (1997) within the information literacy movement three historical reviews could be found: "Kuhlthau's was first published in 1987, followed by Doyle in 1994, and most recently by Bruce in 1996" (p. 348) and the earliest use of the term "information literacy" could be traced back to 1974. Since that time, developments in technology and the rapid increase in information has done much to promote it as a learning concept.

Hashim (1986) reported that "a basic objective of education is for each student to learn how to identify needed information, locate and organize it, and present it in

a clear and persuasive manner" (p. 17). In the same year, Mancall, Aaron, and Walker (1986) published Educating Students to Think: The Role of the School Library Media Program in which they articulated the role of the school library resource centre in meeting this objective. In their view, the role of school library media programs was "(a) to help students develop thinking skills, (b) take into account current research on how children and adolescents process information and ideas, and (c) assist with the development of an information skills program in all areas of the curriculum" (p. 18).

This concept of information literacy was further advanced by Kuhlthau (1987) when she published Information Skills for an Information Society: A Review of Research. In the article, she included library skills and computer literacy into the definition of information literacy and suggested integration of the concept into the curriculum.

The following year, the American Association of School Librarians (AASL) published Information Power (1988) which presented national guidelines for school library media programs. Their mission statement was "to ensure that students and staff are effective users of ideas and information" (p. 1) and this would be accomplished:

- by providing intellectual and physical access to materials in all formats
- by providing instruction to foster competence and stimulate interest in reading, viewing, and using information and ideas

- by working with other educators to design learning strategies to meet the needs of individual students. (p. 1)

Craver (1989) summarized empirical research studies concerning thinking and their implications for library information research. She concluded that:

> Society will require individuals with the ability to think, to reason, to solve problems, to analyze, to make comparisons, to generalize, to digest existing information, and to create new information. Researchers will need to know how to improve the ability of students to find, to synthesize, and to apply information correctly to everyday situations. (p. 18)

Kuhlthau (1989) published a summary of her cognitive research in the same issue of the School Library Media Quarterly. In that issue, she described her model of the Information Search Process (ISP) and how it developed.

Information literacy was further advanced when the American Library Association published a comprehensive report entitled Final Report (1989). It served "as the basis of much discussion about information literacy in both school and academic libraries around the world" (as cited in Loertscher and Woolls, 1997, p.350). The concept was even further advanced when, in 1989, the United States National Forum on Information Literacy (NFIL) was formed. This broad based group of over 60 advocacy, business, government, educational, and school and library organizations was founded to promote the concepts of educational literacy and resource-based learning.

Since that initiative, many other educators and organizations have recognized the significance of information literacy. For instance, the Association of Supervision and Curriculum Development (ASCD), in 1991, adopted the following statement:

> Information literacy ... equips individuals to take advantage of the opportunities inherent in the global information society. Information literacy should be a part of every student's educational experience. ASCD urges schools, colleges, and universities to integrate information literacy programs into learning programs for all students. (in AASL Position Statement, Teaching Librarian, p. 20)

Evidence of this was also found in numerous Department / Ministry of Education policy documents. For example, in Newfoundland's Learning to Learn: Policies and Guidelines for the Implementation of Resource-Based Learning in Newfoundland and Labrador Schools (1991) it was stated that:

> It is no longer adequate for students to acquire a select body of knowledge and expect it to meet their needs as citizens of the next century. The need for lifelong learning is shifting the emphasis from a dependence on the 'what' of learning to the 'how' of learning -- today's students must 'learn how to learn.' (p. 1)

The Ontario Ministry of Education in Information Literacy and Equitable Access: A Framework for Change (1995) recognized that:

> To thrive in a world of constant change and to succeed in an economy increasingly based on information, students must be information literate; that is, they must be able to find, critically examine and use information to solve problems as they continue their studies, as they work and change careers, and as they strive to achieve satisfaction in their personal lives... information literacy is the key to helping students become lifelong learners. (p. 3)

The challenge for an understanding of information literacy continued through the nineties as evidenced by the development of information literacy models, increased research, Department / Ministry of Education policy documents, and the development or refinement of national or provincial standards by various groups and professional organizations. All these documents attempted to address the nature of learning for an information-rich society and to chart the course for information literacy into the next century.

## Traditional Library Skills

According to Kuhlthau (1995), in the sixties, the foundational concepts of school library resource centres were established. They incorporated a specialized facility, staff, and collection in support of the school's curriculum. In the seventies, the media concept emerged and was integrated into the curriculum. At the same time, the concept of a library program developed which incorporated reading and library search skills with a strong emphasis on teaching locational skills, or what could be retrieved from which resources, for example, what could be found in a nonfiction book, how to use the table of contents, or how to use an index. Scope and sequence charts and skills continumns became the cornerstone of library instruction. In the eighties, the program expanded and included instructional design and resource-based learning. By the mid-eighties, the computer brought new concepts, such as

automated collections and databases. In the nineties, newer technologies emerged. Currently, school library resource centre collections are no longer self-contained but through the extensive, yet easily accessible, worldwide information network (known as the World Wide Web), can access information from around the world. On the horizon, looms the virtual library. All are made possible by the computer and its associated technologies. The result is that attention has now shifted away from the conventional locational skills to skills using information, or the 'critical thinking' skills. This is not to say that locational skills are neglected, but the primary focus is on the development of skills which permit students to make the most effective use of the information after it has been located. As a result of these changes, school library resource centre programs now emphasize the process of learning from information rather than the mere retrieval of it.

**Information Literacy Models**

Within the last fifteen years, a new concept of information literacy, or information processing skills, has evolved. Incorporating the traditional library skills of locating materials with information processing skills, these new skills encompass the notion of lifelong learning and the application of the skills to everyday living. Consequently, this shift in focus has led to the development of a number of information literacy models for the K-12 school system. Several of these which have

gained acceptance in the field, include the Stripling and Pitts Research Process Model, 1988; Carol Kuhlthau's Model of the Search Process, 1989; Eisenberg and Berkowitz *The Big Six Skills Model, 1990; and more recently, the* AASL/AECT Information Literacy Standards for Student Learning, 1996. In addition, the Newfoundland Department of Education has authorized the SUCCEED Model (1991). Each will be summarized as follows.

**Stripling and Pitts Research Process Model, 1988**

Stripling and Pitts (1988) state that "the purpose of library research is for students to find, select, evaluate, and use information to enhance their understanding of a subject" (p. 161). The overall goals are for students to:

- perform library research in every curricular area
- follow a research process
- develop critical thinking skills
- work through a taxonomy of research
- react to the research through product creation

In planning research, the authors suggest the following two aspects be considered: "(1) the thought level, and (2) the type and level of product the student must create as a reaction to research" (p. 2).

Thoughtful research involves critical and creative thinking skills performed on

a variety of levels from simple fact finding to complex conceptualizing. Thoughtful reactions involves the same skills and vary from simple recalling to complex synthesizing. Stripling and Pitts (1988) contend that both concepts can be visualized on taxonomies. Students begin on the lowest level, and as they practice and build skills, they proceed to higher levels of each taxonomy. The levels of the Taxonomy of Thoughtful Research include:

- Fact Finding
- Asking / Searching
- Examining / Organizing
- Evaluating / Deliberating
- Integrating / Concluding
- Conceptualizing (p. 3)

The levels are not distinctly separate from each other but rather represent a progression in depth of thinking with the skills in each level building upon those used in previous levels.

Thought level in student's reactions vary from simple to complex and are displayed in a taxonomy similar to the Taxonomy of Thoughtful Research. The Taxonomy of Thoughtful Reactions, often referred to as REACTS, include:

- **R**ecalling
- **E**xplaining

- Analyzing
- Challenging
- Transforming
- Synthesizing

| | |
|---|---|
| Step 1 | Choose a Broad Topic |
| Step 2 | Get an Overview of Topic |
| Step 3 | Narrow the Topic<br>*Reflection Point*:<br>Is my topic a good one? |
| Step 4 | Develop Thesis / Purpose Statement<br>*Reflection Point:*<br>Does my thesis or statement of purpose represent an effective overall concept for my research? |
| Step 5 | Formulate Questions to Guide Research<br>*Reflection Point*:<br>Do the questions provide a foundation for my research ? |
| Step 6 | Plan for Research and Production<br>*Reflection Point*:<br>Is the research / production plan workable? |
| Step 7 | Find / Analyze / Evaluate Sources<br>*Reflection Point*:<br>Are my sources usable and adequate? |
| Step 8 | Evaluate Evidence / Take Notes / Compile Bibliography<br>*Reflection Point*:<br>Is my research complete? |
| Step 9 | Establish Conclusions / Organize Information into Outline<br>*Reflection Point*:<br>Are my conclusions based on researched evidence? Does my outline logically organize conclusions and evidence? |
| Step 10 | Create and Present Final Product<br>*Reflection Point:*<br>Is my paper / project satisfactory? |

Figure 1: Pitt's / Stripling Research Process Model

Stripling and Pitts (1988) correlated both levels so that if students researched at Level 1 - *Fact Finding*, they would react at Level 1 - *Recalling*. Linked to the taxonomies is a ten step research process which students use as a guide in the creation of a research paper. Each step includes specific study and thinking skills At critical points in the process, students reflect on and evaluate what they have completed. Thus, the model has three components: (1) the Research Taxonomy, (2) the REACTS Taxonomy, and (3) the Ten Step Research Process which is illustrated in Figure 1.

**Kuhlthau's Information Search Process Model**

Kuhlthau (1989) states that "a new perspective on library instruction is emerging that incorporates the more traditional skills of locating and using information sources with the process of learning from information" (p.19). Using various methodologies in a research project conducted in several high schools where students were actively engaged in research, she developed a six stage model of the Information Search Process (ISP). Thoughts and feelings, accompanying each step in the model, were also identified. Kuhlthau's (1989) definition for the information search process is that:

> It is a complex learning process involving thoughts, actions, and feelings that take place over an extended period of time, that involves developing a topic from information in a variety of sources, and that culminates in a presentation of the individual's new perspective of the topic. (p.19)

Her six-stage model of the Information Search Process is summarized and illustrated in Figure 2.

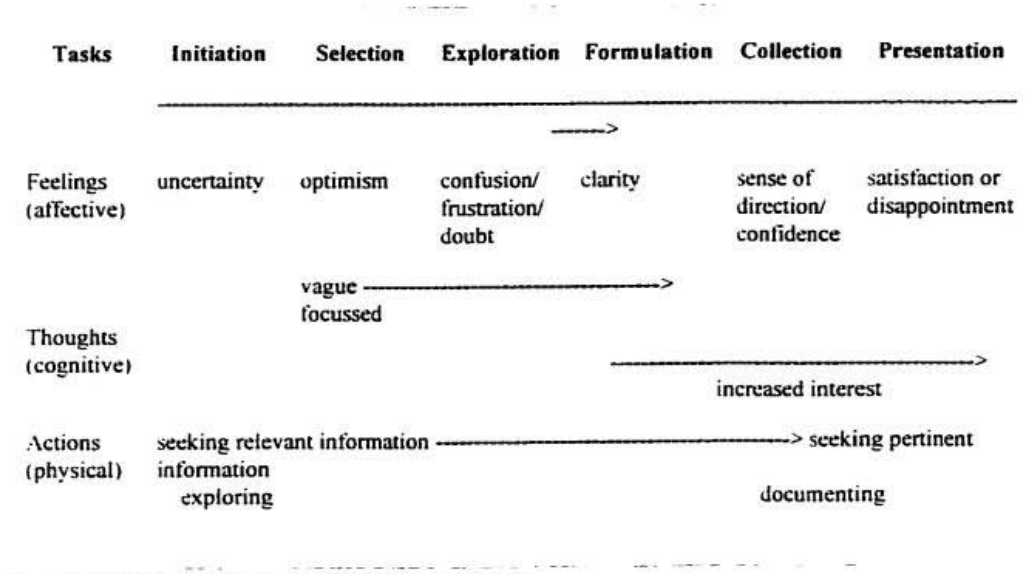


Figure 2: Kuhlthau's Information Search Process Model

*Task Initiation* marks the beginning of the process. It is characterized by feelings of uncertainty and apprehension as students think of possible research topics. During the *Topic Selection* stage, students identify a general area for investigation and exhibit feelings of optimism having chosen a topic. In the *Prefocus Exploration* stage, students explore information resources to form a focus or perspective, all the while reading and reflecting about the general topic. While doing so, they become confused and frustrated. In stage four, *Focus Formulation*, students have learned about their

topic. A sense of understanding is accomplished as they are now provided with an idea, a topic, or theme on which to base the information. In stage five, *Information Collection*, information is gathered to support the focus formed in the previous stage. Now that they have a sense of direction, students become confident and begin their narrative. During stage six, *Search Closure*, students complete their narrative on the topic, and exhibit signs of relief as they prepare to present it to an audience. Kuhlthau (1989) suggests that the whole process is actually the preparation phase for the *writing process*.

In brief, the model may be thought of as occurring in these six stages: "initiation, selection, exploration, formulation, collection, and presentation ... which are named for the primary task at each point in the process" (Kuhlthau, 1995, p.4). *The model shows that seeking meaning is a constructive process whereby individuals* relate new information to what they already know and then extend it. Kuhlthau thinks of it as a holistic learning process incorporating three realms which are common to each stage: the affective (feelings), the cognitive (thoughts,) and the physical (*actions*).

According to Loertscher and Woolls (1997) this model "became popular with the library media profession [and] by 1997 was used in a number of library schools as a text ... of the research process" (p.348).

**The Big Six Information Problem Solving Model**

Another approach to information literacy was developed by Michael Eisenberg and Robert Berkowitz. Known as the *Big Six Information Problem-Solving Model*, it is "a systematic approach to information problem solving; has six broad skill areas necessary for successful information problem solving; and a complete library and information skills curriculum" (as cited in Hyman, 1997, p. 1).

The model, as shown in Figure 3, links research skills and process with the cognitive skills as defined in Bloom's Taxonomy. Then it defines the cognitive stages through which a student works to solve an information problem by splitting the research process up into these six steps:

1. Task Definition
2. Information Seeking
3. Location and Access
4. Use of Information
5. Synthesis
6. Evaluation

The main components of the six steps are summarized below:

(1) Task Definition: the information problem and its specific information needs are determined

(2) Information Seeking: possible information resources are articulated and decisions made about which ones to check first

(3) Location and Access: physically accessing the materials

(4) Use of Information: extracting the required content or information, through note taking, etc., as students read, view, listen, or interact with the information

(5) Synthesis: preparing the selected information for presentation in a new or different format

(6) Evaluation: reviewing the process and product to determine if the end product is what it is supposed to be.

These six steps are further broken down into two more discrete steps. The whole model is so flexible that it can be used by most people for most problems, simplified to accommodate students from the primary grades (the Super Three) to senior high (the Little Twelve), and be integrated with most information skill curricula. Eisenberg and Berkowitz (1995) contend that these skills are "transferable to school, personal, or work applications, as well as all subject areas across a full range of grade levels. When taught collaboratively, the Big Six can help ensure that

students are effective and efficient users of information" (p.23).

| | | | |
|---|---|---|---|
| 1. | Task Definition | 1.<br>2. | Define the Problem<br>Identify Information Resources |
| 2. | Information Seeking Strategies | 2.1<br>2.2 | Determine Range Sources<br>Prioritize Sources |
| 3. | Location and Access | 3.1<br>3.2 | Locate Sources<br>Find Information |
| 4. | Information Use | 4.1<br>4.2 | Engage (read. view. etc.)<br>Extract Information |
| 5. | Synthesis | 5.1<br>5.2 | Organize<br>Present |
| 6. | Evaluation | 6.1<br>6.2 | Judge the Product<br>Judge the Process |

Figure 3: Eisenberg / Berkowitz's Big Six Information Problem Solving Model

## AASL / AECT National Guidelines

The American Association of School Librarians (AASL)and the American Educational Committee for Technology (AECT) National Guidelines Vision Committee are currently developing new standards and guidelines for school library media programs which contain information literacy standards for student learning. The standards in this draft document show three categories, nine standards, and twenty-nine indicators. They describe the content and processes related to information technology that students master to be considered well-educated.

The first category relates to "Information Literacy" and describes the core

learnings of a student who is information literate. The three standards contained in this category include: "(1) accesses information efficiently and effectively; (2) evaluates information critically and competently; and (3) uses information effectively and creatively" (AASL/AECT On-line, p.2). Within these three standards, thirteen indicators are identified. They are related to any services that may be provided by a school library skills program and are the foundation of what the AASL / AECT suggest represent the basic components of an information literacy curriculum. They include:

(1) Defining the Need for Information

(2) Initiating the Search Strategy

(3) Locating the Resources

(4) Assessing and Comprehending the Information

(5) Interpreting the Information

(6) Communicating the Information

(7) Evaluating the Product and Process

Each step in the model defines tasks that students should complete before proceeding to the next level. According to Loertcher and Woolls (1997), this model is undergoing modification and a revised one will be available in 1998.

**SUCCEED Model**

The Newfoundland and Labrador Department of Education recognized the information literacy movement and the importance of knowing how to process and use information in its policy document Learning to Learn (1991). It states "development of skills for life-long learning through carefully planned resource-based learning experiences will be an integral part of the instructional process" (p.4) and "in order for students to become independent, discriminating learners they must use, think about and evaluate the learning process. Resource-based learning models can be used to integrate learning strategies and skills into curriculum activities" (p.5).

| | |
|---|---|
| S | Select and Focus the Topic or Need |
| U | Uncover Unlikely Sources of Information and Learn how to Access Them |
| C | Collect, Examine, and Select Resources |
| C | Compile Relevant Information |
| E | Evaluate, Interpret, Analyze, and Synthesize Information |
| E | Establish and Prepare an Appropriate Form of Presentation |
| D | Determine the Effectiveness of the Whole Process |

Figure 4: Succeed Model for Independent Learning

The model recommended by the Department to enable students to become independent learners was the SUCCEED Model for Independent Learning. This

model is similar to the one in Information Skills in the Secondary Curriculum (1981) by Michael Marland. The model, as shown in Figure 4, articulates the stages, the skills, and the strategies to be employed in the learning process. The teacher's task is to guide students through the various stages as they reflect and review each preceding stage. The stages of the model are:

- Select and focus topic and information needs
- Uncover potential sources of information and access them
- Collect, examine, and select suitable resources
- Compile relevant information from selected sources
- Evaluate, interpret, analyze, and synthesize the information
- Establish and prepare an appropriate format and present the information
- Determine the effectiveness of the whole process

**Model Comparison**

Through a comparison of these models, it is obvious that a process approach to skills instruction underlies them all. The Stripling and Pitts (1988) Research Process Model; the Kuhlthau (1989) Information Process Model; the Eisenberg and Berkowitz (1992) Big Six Information Problem-Solving Model; the AASL / AECT (1995) Information Literacy Standards; and the Newfoundland and Labrador

Department of Education (1991) SUCCEED Model are all very similar. For example,

- they present a similar breakdown of the information skills process,
- each level builds upon the previous level,
- suggest that library and information skills should be taught within the context of an overall process,
- no one model is dependent on any particular source of information, and
- all emphasize the development of transferable cognitive skills.

Each explains the process a little differently, divides the steps at different levels, uses different terminology, and emphasize different phases. However, they are essentially the same. In terms of adopting one for a school or School Board, it may not make much difference which one forms the basis for implementation. In short, what is needed, is to develop information-literate students.

**Guidelines**

With regard to formulating a set of general guidelines for a school to follow in promoting information literacy, there are a number of approaches. According to Breivik (1996), schools "generally try one of two approaches. The first is to focus on critical thinking and problem solving, with the aim of getting students more actively involved in analyzing and synthesizing information" (p. 65).

Breivik (1996) contends that this approach is not very successful since the activities in such "thinking skills programs often mirror traditional classroom patterns" (p. 66). The point she is making is that students are presented with a problem: provided with all the information needed to solve it: and then given a specific analysis procedure to solve the problem. When students leave high school, rarely is the raw material for solving problems handed to them, nor have students been adequately prepared in the thinking process.

The second approach to teaching information literacy as identified by Breivik (1996) is "computer literacy programs" (p. 66). However, these programs are often long on technical knowledge, and short on hands-on activities. In most schools, "the technologies are not available for use as part of the regular research and study assignments" (Breivik, 1996, p. 66). Applications relevant to the curriculum are difficult to develop, in-service training is demanding, and limited financial resources are other reasons why students receive little training in the storage and retrieval of information with such programs. Breivik (1996) suggests that "what is needed is a new approach to learning and teaching, an approach such as resource-based learning" (p. 66).

Brown and Sheppard (1997) suggest that resource-based learning allows for the integration of an information processing skills or literacy program, and "is

desirable and endorsed in curriculum guidelines" (p. 203). Such a philosophy:

> (a) actively involves the student in the centre of all learning activities. (b) is dependent on the articulation of process and content objectives. and (c) requires deliberate teacher planning so that multiple resources and varied teaching strategies are incorporated in all plans. (Brown and Sheppard, 1997, p. 203)

With this philosophy, the emphasis shifts from a focus on teaching to one on learning where the primary responsibility is placed on students to find evaluate, and effectively use information from a multiplicity of resources. In doing so, they become autonomous learners capable of accessing, evaluating, and synthesizing information.

The resource-based learning philosophy provides students with frequent opportunities to handle all kinds of information and the structure that encourages them to develop information processing skills by interacting with resources. To meet this demand, however, requires a partnership between teacher and teacher-librarian who collaborate in providing numerous learning experiences for all students.

**Role of Teacher-Librarians**

In order to create resource-based learning opportunities, teachers and teacher-librarians need to become partners. Breivik (1996) contends that:

> Teachers, who are the pedagogical and subject specialists, need to depend on those whose expertise is in information, its organization and its related technologies. Such partnerships allow the learning objectives for a course to be achieved through the use of real-world resources. (p. 66)

From this perspective, teacher-librarians have a role to play. Their job requires them to provide the resources and learning activities which will enable students to become lifelong learners and users of information (AASL / AECT, 1988). Haycock (1997) states that "students do better when the classroom teacher and the teacher-librarian engage in formal rather than informal planning" (p. 29). In fostering and promoting information literacy, the AASL (1997) suggests that teacher-librarians play these critical roles:

- *Work with the classroom teacher as a partner to plan, design,* deliver and evaluate instruction using a variety of resources and information problem-solving skills.
- Provide leadership, expertise and advocacy in the use of technology and resources.
- Partner with teachers to empower students to accept responsibility for their own learning, thereby becoming capable of learning over a lifetime.
- *Manage a program (personnel, resources, facility and services)* in which students receive instruction and practice in the use of information. Guidance is given for reading, viewing and listening so that students can locate resources for both personal enrichment as well as for information problem solving. (AASL, 1997)

Given these roles, teacher-librarians are vital components for the implementation of any literacy program. The role is one of leadership, coordination, support, and change agent where responsibility for introducing, promoting, training, supporting, modelling, and coordinating the information processing model is assumed.

Generally, this will require the development of an instructional team, a

breakdown of the one-teacher one-classroom concept, and a commitment to developing skills for lifelong learning, as well as an information skills program.

**Role of School Library Resource Centres**

With the proliferation of internal and external media currently accessible in many school library resource centres, students are constantly exposed to vast quantities of information in differing formats. Therefore, it seems logical, if not imperative, that school library resource centres play a pivotal role in this new approach. The AASL in Information Literacy: A Position Paper on Information Problem Solving (1995) states "the role of the library resource centre program is to ensure that students and staff are effective users of ideas and information" (p.21) and that the program should support the curriculum through the provision of adequate resources, personnel, and training so that all become independent users of information.

It is generally accepted that to become effective information users, students need a systematic program or approach for learning the information literacy skills of locating, evaluating, and using information from a variety of formats, including the new and emerging technologies. Todd (1997) contends "an information literacy framework, integrated into the schools's curricula, with an emphasis on developing students' intellectual skills in handling information, makes a positive difference to

student learning" (p. 38). To support his findings, Todd provides evidence from a research and development program he has been involved in since 1991 at a selected secondary school in Sydney, Australia. His study investigated the impact of integrated information skills instruction on student learning, through qualitative research and then through quantitative research. From this study, Todd (1995) concluded that, within the parameters of his research, "information literacy instruction has a significant positive impact on mastery of content and attitudes to learning" (p. 54) and that "information skills instruction integrated in the science curriculum does appear to have a significant positive impact on students' learning of science content and on their use of a range of information handling skills" (p. 65).

Thus, to prepare students for productive living in an information environment, knowledge and understanding of the resource-based learning concept need to be understood as a force for instructional reform throughout the school. Board Directors, Program Specialists, Principals, Teachers, and Teacher-librarians need to become advocates of the philosophy. School leaders have to develop and share a vision of the concept based upon the school's philosophy. Policy statements, goals, and mission statements should be collaboratively developed by the staff. Once developed, the concept should be infused into the framework of the school and promoted in all possible settings. Next, teachers need to be in-serviced and trained

in its implementation. The approach should be curriculum based, in that, thematic learning units should be developed which incorporate the school library resource centre and its resources. Programs for teaching library skills need to be restructured to incorporate the concept of information literacy and information processing skills. Any of the literacy models previously discussed may serve as the backbone of the program. The skills should be incorporated, taught, and reinforced within these learning units. During the process, students learn to use the resources of the school library resource centre, and transfer the skills of finding, analyzing, and using information to other sources of information.

## Conclusion

Davies (1998) states that "the *information age* is more than just a catchy term to indicate a glut of information or the arrival of new technology" (p. 5) and in an information-oriented society, the concept of information literacy cannot be overemphasized. The vision of education presented in this paper brings together education and information in such a way that it positively promotes student learning. This vision sees students taking increased responsibility for their own learning and solving their own information problems. It is a sense-making vision whereby educators are able to focus on the skills necessary for life-long learning. It assumes that all students need to be given strategies to deal with the information society.

Over the past decade, an understanding of the information literacy concept has emerged, models have evolved, standards are being revised, and roles are being clarified. However, much work still remains to be done before students become effective consumers of information. For instance,

- there needs to be more research and documentation in implementing information literacy programs,
- collaborative working environments between teachers and teacher-librarians must be further promoted before they become the norm in schools,
- the inquiry or resource-based learning philosophy must become the accepted philosophy of learning employed by teachers if the research process, as defined, is to be successful,
- what is envisioned in the literature must transfer to all classrooms, and
- school library resource centre programs need to be restructured so that strategies and skills are taught across the curriculum.

These are some of the concerns that need to be addressed before students become life-long learners. Kuhlthau (1995) warns: "Failing to prepare [them] for learning in an information-rich environment is failing to meet the challenge of education today" (p .2).

The chairperson of the Information Literacy Standards for Student Learning

(1996), as set forth by the American Association of School Librarians (AASL) aptly sets the tone for the future:

> Today's student lives and learns in a world that has been radically altered by the ready availability of vast stores of information in a variety of formats. The learning process and the information search process mirror each other: students actively seek to construct meaning from sources they encounter and to create products that shape and communicate that meaning effectively. Developing expertise in accessing, evaluating, and using information is in fact the authentic learning that modern education seeks to promote. (p. 1)

## References

Adams, S., & Bailey, G. D. (1993). Education for the information age: Is it time to trade vehicles? NASSP Bulletin, 77(553), 57-63.

American Association of School Librarians and Association for Educational Communications and Technology. (1988). Information power: Guidelines for school library media programs. Chicago: American Library Association.

American Library Association. (1996). AASL information literacy standards for student learning, draft #5. [On-Line]. Available: http://www.ala.org/aasl/stnddrft5.html

American Library Association. (1997). AASL position statement on information literacy: A position paper on information problem solving [On-Line]. Available: http://www.ala.org/aasl/positions/PS_infolit.html

Anderson, M. A. (1995). Changing roles, changing programs. The Book Report, 14(2), 17-19.

Anderson, T. (1993). Partners are forever. The Canadian School Executive, 13(1), 23-26.

Association for Teacher-Librarianship in Canada and the Canadian School Library Association. (1996). Competencies for teacher-librarians: Preliminary draft, 1996, May 06. [On-Line]. Available: http://uviclib.uvic.ca/csla/comp3.html.

Association for Teacher-Librarianship in Canada and the Canadian School Library Association. (1998). Students' information literacy needs in the 21st century: Competencies for teacher-librarians. [On-Line]. Available: http://www.sbe.saskatoon.sk.ca/~atlc/index.html

Barron, D. D. (1997). The school, library, media, and specialist. School Library Media Activities Monthly, 13(9), 48-50.

Barron, D., & Bergen, T .J. (1992). Information power: The restructured school library for the nineties. Phi Delta Kappan, 74(7), 521-525.

Bennis, W. (1987). The four competencies of leadership. School Library Media Quarterly, 15(4), 196-199.

Blake, V. L .P. (1994). The virtual library impacts the school library media center: A bibliographic essay. School Library Media Annual, 12, 4-20.

Breivik, P. S., & Gee, E. G. (1989). Information literacy: Revolution in the library. New York: Macmillan Publishing Company.

Breivik, P. S., & Senn, J. A. (1993). Information literacy: Partnerships for power. Emergency Librarian, 21(1), 25-28.

Breivik, P.S. (1996). Information literacy: When computers aren't enough. Computing Librarian, 23(5), 65-67.

Broadwell, D. (1996). Situational leadership and the educator of the 90's. Emergency Librarian, 23(3), 21-27.

Brown, J. (1988). School libraries: Past, present and future: The Newfoundland context. School Libraries in Canada, 9(1), 31-36.

Brown, J. (1988). Changing teaching practice to meet current expectations: Implications for teacher-librarians. Emergency Librarian, 16(2), 19-28.

Brown, J. (1990). Navigating for the '90s - the teacher-librarian as change agent. Emergency Librarian, 18(1), 19-28.

Brown, J. (1993). Leadership for school improvement. Emergency Librarian, 20(3), 8-20.

Brown, J., & Sheppard, B. (1997). Teacher-librarians in learning organizations. In K. Haycock & L. Lighthall (Eds.), Information rich but knowledge poor? Emerging issues for schools and libraries worldwide (pp. 197-216). Seattle, WA: International Association of School Librarianship.

Bucher, K. T. (1995). How times have changed. The Book Report, 14(2), 9-13.

Burdenuk, E. L. (1992). Leadership and the teacher-librarian. School Libraries in Canada, 12(2), 16-27.

Burdenuk, E. L. (1993). Vision and the school library resource center. Emergency Librarian, 20(3), 22-24.

Burdenuk, E. L.(1994). Leadership and teacher-librarianship. Emergency Librarian, 21(3), 3.

Calgary Board of Education. (1994). Integrating information technologies into the learning programs of the school. School Libraries in Canada, 14(2), 18-27.

Canadian School Library Association. (1992). Guidelines for effective school library programs: Key roles in the school library program. School Libraries in Canada, 2(1), 8-11.

Carefoot, L. (1994). Information skills: What does it mean to be information literate? School Libraries in Canada, 14(2), 11-15.

Craver, K. W. (1995). Shaping our future: The role of school library media centres. School Library Media Quarterly, 23(1), 13-18.

Crowley, J. (1995). A leadership role of teacher librarians. Emergency Librarian, 22(5), 8-13.

Davies, J. G. (1998). Leadership: Stepping ahead in changing times. The Teaching Librarian, 5(3), 5-6.

Davis, L. (1992). Leadership and the teacher-librarian. MSLAVA Journal, 20(2), 20-21.

Doyle, C. S. (1995). Information literacy in an information society. Emergency Librarian, 22(4), 30-32.

Eisenberg, M. B. (1992). Current themes regarding library and information skills instruction: Research supporting and research lacking. School Library Media Quarterly, 20(2), 103-108.

Eisenberg, M. B. (1996). Take the internet challenge: Using technology in context. The Book Report, 15(2), 5-7.

Eisenberg, M. B., & Berkowitz, R. E. (1995). The six habits of highly effective students: Using the big six to link parents, students, and homework. School Library Journal, 41(8), 22-25.

Farmer, L .S .J. (1994). Changing our own and others' mind set. The Book Report, 13(2), 20-22.

Farmer, L. S. J. (1995). Information literacy: More than pushbutton printouts. The Book Report, 14(3), 11-13.

Fullan, M., & Stiegelbauer, S. (1991). The new meaning of educational change. New York: Teachers College Press.

Fullan, M. (1993). Change forces: Probing the depths of educational reform. London: Falmer Press.

Fullan, M. G., & Miles, M. B. (1992). Getting educational reform right: What works, and what doesn't. Phi Delta Kappan, 73(3), 744-52.

Gonzalez, B. S. (1996). Virtual school libraries: A dream or reality. Multimedia Schools, 3(2), 14-20.

Hamilton, D. (1992). The evolution of the school library. Emergency Librarian, 20(2), 9-12.

Hargreaves, A. (1995). Paradoxes of change: School renewal in the postmodern age. Educational Leadership, 52(7), 14-19.

Hashim, E. (1986). Educating students to think: The role of the school library media program, an introduction. School Library Media Quarterly, 14(1), 18.

Haycock, K. (1995). Research in teacher-librarianship and the institutionalization of change. School Library Media Quarterly, 23(3), 227-233.

Haycock, K. (1997). What works: Integrated information skills instruction. Emergency Librarian, 25(2), 29.

Heeks, P. (1993). Managing school library change. ED357768, (2), 11-18.

Henri, J. (1996). Information-literate schools without a t-l? I'd like to see that. School Libraries in Canada, (Spring), 31-32.

Howe, E. B. (1997). Integrating information technology into and across the curriculum: A short course for secondary students. In K. Haycock & L. Lighthall (Eds.), Information rich but knowledge poor? Emerging issues for schools and libraries worldwide (pp. 75-85). Seattle, WA: International Association of School Librarianship.

Hughes, S. (1995). Information literacy and equitable access: A framework for change - some questions to consider. The Teaching Librarian, 3(2), 4-6.

Hughes, S. (1996). Revisioning. The Teaching Librarian, 4(2), 7-10.

Hughes, S. (1997). Information problem-solving: Using the big six in Ontario. The Teaching Librarian, 5(1), 15-21.

Hughes, S. (1997). Information problem-solving: An approach to information literacy that is catching fire. The Teaching Librarian, 4(3), 8-10.

Hughes, S., & Jackson, B. A. (1996). The Teacher-librarian in transformational change. The Canadian School Executive, 15(8), 20-21.

Hyman, L. W. (1997). Big 6 information problem-solving. [On-Line]. Available: http://edweb.sdsu.edu/edfirst/bigsix/bigsix.html

Jackson, M. M. (1993). Library information skills and standardized achievement tests. School Library Media Annual, 11, 22-29.

Jay, E. M., & Jay, H .L. (1994). The changed role of the elementary library teacher. Reference Librarian, 44, 61-69.

Kuhlthau, C. C. (1989). Information search process: A summary of research and implications for school library media programs. School Library Media Quarterly, 17(1), 19-25.

Kuhlthau, C. C. (1993). Implementing a process approach to information skills: A study identifying indicators of success in library media programs. School Library Media Quarterly, 22(1), 11-18.

Kuhlthau, C. C. (1995). The process of learning from information. School Libraries Worldwide, 1(1), 1-12.

Lighthall, L. (1990). A vision, an evolution, a revolution. The Canadian School Executive, 10(12), 29-31.

Lott, C. (1997). Skills for life: Teaching information literacy. [On-Line]. Available: http://www.lib.wmc.edu/pub/patchwork/skills.html.

Mancall, J. C. (1992). The changing library landscape: Impact on student instruction and use. Continuing Education, 3, 66-75.

Mancall, J. C., Aaron, S. L., & Walker, S. A. (1986). Educating students to think: The role of the school library media program. School Library Media Quarterly, 15(1), 18-27.

Mathews, V., Flum, J. G., & Whitney, K. A. (1991). Kids need libraries: School and public libraries preparing for youth of today for the world of tomorrow. School Library Media Annual, 9, 228-38.

Meghabghab, D. B., & Price, C. (1997). The impact of a technology-rich environment. In K. Haycock & L. Lighthall (Eds.), Information rich but knowledge poor? Emerging issues for schools and libraries worldwide (pp. 137-141). Seattle, WA: International Association of School Librarianship.

Mendrinos, R. (1994). Building information literacy using high technology: A guide for schools and libraries. Englewood, CO: Libraries Unlimited, Inc.

Morill, M. (1995). Roles 2000: How to contain an ever expanding job. School Library Journal January, 14(1), 32-34.

Newfoundland Department of Education (1991). Learning to learn: Policy and guidelines for the implementation of resource-based learning. St. John's, NF: Queen's Printer.

O'Connell, J., & Henri, J. (1997). Information literacy: Teacher's perspectives of the information process, In K. Haycock & L. Lighthall (Eds.), Information rich but knowledge poor? Emerging issues for schools and libraries worldwide (pp. 125-136). Seattle, WA: International Association of School Librarianship.

Ontario Ministry of Education and Training. (1995). Information Literacy and Equitable Access: A Framework for Change. Toronto, ON: Ontario Ministry of Education and Training. [On-Line]. Available: www url = gopher://gopher.edu.gov.on.ca.:70

Ontario School Library Association. (1996). OSLA position statement on the role of the teacher-librarian. The Teaching Librarian, 4(2), 22-23.

Pappas, M. L. (1997). Changing learning environments: Touching the future. School Library Media Activities Monthly, 13(6), 44-45.

Pappas, M. L. (1997). Library media specialists and teachers in the school of tomorrow. School Library Media Activities Monthly, 13(8), 32-34.

Putnam, E. (1996). The instructional consultant role of the elementary school library media specialist and the effects of program scheduling on its practice. School Library Media Quarterly, 25(1), 43-48.

Rehlinger, L. (1988). The teacher-librarian and planned changed. Emergency Librarian, 15(5), 9-12.

Ross, S. L. (1992). Information skills in the information laboratory. In H. T. Walker & P. K. Montgomery (Eds.), Library Media and Information Skills (pp. 286-96). Santa Barbara, CA: ABC-CL10

Ross, T. W., & Bailey, G. (1994). Wanted: A new literacy for the information age. NASSP Bulletin, 78(563), 31-35.

Rux, P. (1994). Listening to the music. The Book Report, 13(2,) 15-16.

Ryan, L., Kilcher, A., & Hynes, R. (1993). Understanding the change process. Prism, 2(1), 18-21.

Sisson, L., & Ponteau, D. (1995). The changing instructional paradigm and emerging technologies: New opportunities for reference librarians and educators. Reference Librarian, 45, 205-206.

Stripling, B. K., & Pitts, J. M. (1988). Brainstorms and blueprints: Teaching library research as a thinking process. Englewood, CO: Libraries Unlimited, Inc.

Taylor, P. (1994). Leadership in education: A review of the literature. Emergency Librarian, 21(3), 9-17.

Thornely, J. (1994). Information technology and the school library. The Canadian School Executive, 14(1), 28-29.

Todd, R. (1995). Information literacy: Philosophy, principles, and practice. School Libraries Worldwide, 1(1), 54-68.

Todd, R. J. (1997). Teacher-librarians and information literacy: Getting into the action. School Libraries Worldwide, 3(2), 31-40.

Todd, R .J., Lamb, L., & McNicholas, C. (1992). The power of information literacy: Unity of education and resources for the 21st century. ED354916, 19-32.

Vandergrift, K. E. (1994). Power teaching: A primary role of the school library media specialist. Chicago: American Library Association.

Vandergrift, K. E., & Hannigan, J. A. (1986). Elementary school library media centers as essential components in the schooling process. School Library Media Quarterly, 14(4), 171-173.

Walker, J. (1996). Managing change in the school library - paddling through white water. Multimedia Schools, 3(2), 6-7.

Warren, P. (1997). Information literacy and equitable access: Deconstructing the new mandate for teacher-librarians in Ontario schools. [On-Line]. Available: http://educ.queensu.ca/~warrenp/ilea.html

Wehmeyeer, L. B. (1987). Indirect leadership: The library media specialist as consigliere. School Library Media Quarterly, 15(4), 201-204.

Welborn, L. (1997). Information literacy. MSLA Journal, 24(3), 6- 11.

Williams, W. W., & Smith, J. A. (1994). Technology for the information age: Moving out of the complacency paralysis. NASSP Bulletin, 78(560), 42-50.

Worzel, R. (1996). Does tomorrow's library have room for librarians? School Libraries in Canada, 16(2), 13-14.