Teacher-librarians and teachers:

Partners in the collaborative curriculum development process

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Abstract

This research study explored, tracked, and presented findings of how the Collaborative Program Planning, Teaching and Evaluation process was used for curriculum development in an elementary school in Prince Edward Island, Canada. A teacher-librarian, two classroom teachers, and a technology teacher used the CPPT model to develop, implement, teach, and evaluate two resource-based learning projects within a school library program. Through an action research approach, the study employed several data collection tools: participant and direct observations, interviews with four educators and eight students, curriculum document analysis, and a researcher's reflective journal. Key findings resulting from observations and interview transcripts are reported under the following themes: CPPT Process: Planning Sessions, Implementation and Teaching of Projects, and Evaluation/Assessment, Benefits and Barriers to the CPPT Process, Student Learning, Information Literacy, The Role of the Teacher-Librarian, and Student Interviews. Discussions and the implications for education and teacher collaboration highlighted the curriculum leadership role of the teacher-librarian.

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Thank you to all the staff at Parkdale Elementary School, but especially to my study's participants. Your enthusiastic support and dedication throughout my study was greatly appreciated. It reconfirmed for me that Parkdale school is an excellent model for collaboration and a wonderful place for an educator to grow professionally and for students to learn.

Thanks to my husband, my editor, my sounding board, and my confidant. Without his help and constant encouragement, this journey of completing my masters degree could never have been accomplished.

Dedicated to

my mother, whose hard work ethic and love of learning,

instilled in me the courage to pursue and successfully complete this masters degree.

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Chapter 1: Introduction

Overview

The Prince Edward Island Ministerial Directive (2000) on School Libraries states, "In today's society, which is increasingly information-rich and knowledge-based, the school library program should equip students with skills and an appreciation for life-long learning" (p. 1). This directive has established a rationale and purpose for school library programs in Prince Edward Island schools and has laid out a major teaching role for teacher-librarians.

Working as a teacher-librarian at an elementary school for the past eight years, I have developed both an interest and a passion to explore how a teacher-librarian can be a leader in curriculum development. Teacher-librarians already provide leadership within their own school library program and by forming a partnership with classroom teachers, this leadership can extend to the development and teaching of the school's curriculum. Teacher-librarians are valuable partners in students' learning, as they are knowledgeable in all areas of the curriculum, the resource-based learning approach, and information literacy (CSLA/ATLC, 2003, p. 79-82). As part of their job description, teacher-librarians collaborate with teachers in developing resource-based learning projects that incorporate information literacy outcomes and utilize the information process. In developing these resource-based learning projects, teacher-librarians and teachers use an outcomes-based education model; they integrate core areas of the curriculum; and they use a variety of resources including information technology (CSLA/ATLC, 2003, p. 79-82). When teacher-librarians and classroom teachers collaborate, students benefit by being able to work on projects or activities that engage them in an active learning process, ones that are meaningful, and pertinent to their learning needs.

Many research studies have shown how successful school library programs are related to higher student academic achievement. Research by Lance, Hamilton-Pennell, and Rodney (1999) entitled, *Information Empowered: The School Librarian as an Agent of Academic Achievement in Alaska* concluded that,

> Test scores of students tend to be higher for all types of schools where: there is a school librarian, library staff spend more time delivering information literacy instruction to students, collaborating with teachers on instructional units, training teachers in information access, and students visit the school library more frequently. (p. 87)

By mid 2001, replicating their first study in Alaska, Lance and researchers completed three other research studies in Pennsylvania, Oregon, and Colorado. Lance et al.(2001) concluded that "In all four states, the level of development of the Library Media program was a predictor of student performance" (p. 4). A more recent study completed by Dr. Ross J. Todd and Dr. Carol C. Kuhlthau in 2003 entitled, "*Student Learning through School Libraries*, was conducted with more than 13,000 Ohio students and nearly 900 educators, and confirmed that the school library, its services and school librarians play a major role in helping students learn" (Lonsdale, 2003, online).

When this research is examined in detail it indicates that an important part of successful library programs is the collaboration between teacher-librarians and classroom teachers. As stated earlier, (Lance et.al, 1999) indicated the collaboration of teacher-librarians and classroom teachers in developing and teaching instructional units also relates to student achievement. Haycock (2004) also tells us, there is research evidence that, "Collaboration between teachers and teacher-librarians is a significant factor in student achievement" (Teacher-Librarian, 2004,

online).

Although these research studies conclude that the collaboration between teacher-librarians and teachers affects student achievement, there is little research that describes exactly how this collaboration process takes place. As well, many of these research studies primarily consisted of co-relational data with little qualitative data to indicate the factors that point to the success in teacher librarian and classroom teacher collaboration. This suggests a need for research to clarify the nature of the collaborative process while giving front line teacher librarians and classroom teachers direction for implementing the process. Todd (2001) states that, "there is a critical importance for teacher-librarians being engaged in evidence-based practice that shows that their role in the learning goals of the schools make a difference" (p.15).

This research study explored and described the collaborative process between teacher-librarians and teachers as they developed and implemented curriculum in a school library program based on the model, *Collaborative Program Planning and Teaching* (CPPT). Doiron and Davies (1998) define (CPPT), "as a process that involves teachers and teacher-librarians as partners in the development of curriculum that integrates resources, information skills, and shared program objectives"(p. 22). Focusing on the nature of the CPPT process, the study attempted to show how the teacher-librarian can be a valuable leader and an effective instructional partner in this process, as well as adding to the body of evidence-based research on the importance of this role in schools.

Since this research study centered around developing a collaborative partnership between teacher-librarians and teachers, an action research methodology was a natural choice for the

study. Johnson (1993) defines action research as,

> Research that is often a collaborative activity promoting reflective teaching, critical inquiry, self-evaluation, and professional dialogue, thereby creating a more professional culture in schools. Action research has been employed for various purposes including school-based curriculum development, system planning, and policy development. (p. 1)

Given that the guiding research questions of my study included the concepts of curriculum development, collaboration, and an educational change, an action research methodology was ideal for this study.

Research Questions

The guiding research questions for this research study evolved from my professional experience as a teacher-librarian, my interest in curriculum development, and my personal belief in the value of teacher-librarians in education.

- How do teacher-librarians act as leaders in curriculum development and implementation in an elementary school?
- How do classroom teachers and teacher-librarians use the Collaborative Program Planning, Teaching and Evaluation model in curriculum development and implementation?
- What are the benefits and barriers to curriculum development and implementation from using the CPPT process?
- How are information literacy outcomes integrated into the outcomes-based education environment and the CPPT process?

- What are the benefits for students when teachers and teacher-librarians collaborate in developing, implementing, and teaching curriculum?

Rationale for Study

As educators, we continually strive to instill in our students a love of learning. This conviction of engaging our students in meaningful learning is a central concept we adhere to in developing our curriculum. Changes in our society have also dictated that educators develop curriculum that responds to the evolving learning needs of our students.

> Pervasive, ongoing changes in society - for example, rapidly expanding use of technologies - require a corresponding shift in learning opportunities in order for students to develop relevant knowledge, skills, strategies, processes, and attitudes that will enable them to function well as individuals, citizens, workers, and learners. (Atlantic Canada English Language Arts Curriculum, Entry-3,1997, p. 1)

We refer to our society as the "information age" and the abundant information to which students are exposed, has changed the essential skills of learning. It is no longer sufficient for students to simply digest a finite body of knowledge in their education (Prince Edward Island Department of Education, *BIL,* 2000). It is now imperative that students possess skills in critical thinking, problem solving, decision making, technological competence, and information processing (Hubbard,1987, p. 3). These societal changes have also brought forth a new way of working with information that requires a set of literacy skills and strategies known as information literacy that pervades all of the school library program. The Prince Edward Island Ministerial Directive (2000) concerning school libraries defines information literacy "as the ability to ... access, interpret, evaluate, organize, select, produce, and communicate information through a

variety of texts, medias [sic], technologies, and contexts to meet diverse learning needs and purposes" (p. 1). This definition asserts that information literacy moves beyond traditional views of "library skills" taught in isolation to become fully integrated information outcomes and a major focus of the school library program. No longer is it enough to gather information around you; now one must sift and sort through information, decide relevance, accuracy, critical bias and many other process skills needed to use information and create new knowledge.

Departments of Education across Canada have been working to restructure curriculum to meet learning needs of students that include information literacy, critical thinking, information communication technology (ICT), and problem solving. There are several initiatives that have occurred in our Atlantic provinces including many newly created curriculum documents. These Atlantic Provincial Education Foundation (APEF) curriculum documents outline general and specific curriculum outcomes for every subject area and grade level and are used by all the Atlantic provinces (Atlantic Canada English Language Arts, 1997). This initiative indicates a change from teaching solely from texts to teaching towards specific learning outcomes using a variety of traditional and digital resources. It also stresses that educators move towards a more holistic approach to education where they are encouraged to integrate these outcomes across the various disciplines in a meaningful context which we call integrating the curriculum.

Integration of curriculum and an outcomes-based education model is part of the instructional process for teacher-librarians and has become an integral part of their school library program. The role of the teacher-librarian is to be knowledgeable of new curriculum, of the learning outcomes for each subject and grade level within their school, and of new information and communication technologies (ICT), and to assist in the implementation and teaching of this

new curriculum (CSLA/ATLC, 2003, p. 80,82).

Traditionally, the school library curriculum consisted of a set of specific library skills that teacher-librarians taught in isolation at scheduled class times. In Prince Edward Island, these library skills evolved into the *Information Skills Continuum* document (Doiron and Davies, 1996, p. 31) that established a set of information skills for all grades. With the emergence of the information age, updated Pan-Canadian curriculum, and the broadening of our meaning of literacy, these information skills have been re-conceptualized as, "information literacy." This national influence of information literacy has been reflected in the 1997 APEF Language Arts curriculum documents. As the concept of information literacy was new for many educators, an initiative took place by a Prince Edward Island Library Committee to produce an online document, entitled *Building Information Literacy* (*BIL*) (Prince Edward Department of Education, 2000). This interactive online document contains specific information literacy outcomes arising out of the APEF curriculum documents and has become the principal curriculum document for teacher-librarians. *BIL* is an excellent resource and support for educators when developing curriculum since it addresses the information literacy needs of students in Grades K - 12. The Canadian School Library Association and the Association for Teacher-Librarianship in Canada (CSLA/ATLC) and the American Association of School Librarians (AASL) have also produced information literacy documents that set national standards for information literacy. The CSLA/ATLC's document is called *Achieving Information Literacy: Standards for School Library Programs in Canada* and the AASL's document is entitled *Information Literacy, Standards for Student Learning*. These documents indicate a considerable change in our school's curriculum with regards to information literacy, particularly in the area of

the need to integrate information literacy into the curriculum, and how the school library is a partner in implementing these changes (CSLA/ATLC, 2003).

The importance of students becoming information literate citizens has made the school library a vital part of our school's curriculum framework. The highly influential document, *Information Power* (American Association of School Libraries, 1988) states that the school library media program "that is fully integrated into the school's curriculum is central to the learning process. It is critical in students' intellectual development, promoting the love of learning and conveying the importance of using and evaluating information and ideas throughout life" (p. 15). The school library is an information hub equipped with a variety of resources, teaching approaches that address students' diverse learning needs and an instructional leader knowledgeable in these approaches, the teacher-librarian. According to Doiron and Davies (1998),

> This places the teacher-librarian at a key point in curriculum development within a school, able to act as an agent for change as schools restructure to include many of the newly emerging educational trends, such as cooperative learning, holistic learning, outcomes-based learning, and resource-based learning. (p. 7)

As a result of all these curriculum changes, many educators may feel overwhelmed asking themselves, how can we accomplish all of this? In the school, chosen as the research site, I have worked as a teacher-librarian for the past eight years and have encountered teachers facing new APEF curriculum documents for every core subject area and a multitude of learning outcomes, that they are expected to teach to their students in one school year. They are wondering how can we possibly teach all of these outcomes? Many realize that for all of these outcomes to be

taught, they must be integrated throughout the entire curriculum. Even the P.E.I. Department of Education has begun major initiatives to help teachers integrate this curriculum. Curriculum integration committees have been formed and workshops have been held to assist teachers with the integration of curriculum process. As part of their training and experience with the integration of information literacy outcomes, many teacher-librarians are already knowledgeable in this curriculum integration process. In the role as the school's teacher-librarian, the teacher-librarian can be a valuable partner in helping teachers with these challenges of integration, and thus take a leadership role in curriculum development and implementation at the school level.

Using an action research methodology, the goal of this research study was to explore and describe how teacher-librarians and teachers work together to develop and implement integrated curriculum within a school library program that meets students' diverse learning needs. The site of my research study was a small elementary school and the participants were some of the staff and students. The classroom teachers of grade two and four, the information communication technology teacher (ICT), the teacher-librarian, and I worked collaboratively to produce resource-based learning projects that used an outcomes-based educational model, integrated core areas of the curriculum, and taught information literacy outcomes. This collaboration between the classroom teachers, the teacher-librarian, the ICT teacher, and myself was based on the model "Collaborative Program Planning, Teaching and Evaluation," as defined earlier (Doiron and Davies, 1998). My data collection methods included participant and direct observations, interviews with teachers and students, and document analysis. The action research approach enabled me to be both a leader and a full participant in this study. This action research methodology directly relates to my role as a teacher-librarian and my belief in the importance of

being "actively" involved in all facets of learning.

Significance of the Study

The P.E.I. Department of Education's initiatives and curriculum changes highlight the purpose and significance for this research study. This study is intended to help our Department of Education decision makers understand the curriculum leadership role of teacher-librarians and the valuable contribution they make to our new APEF curriculum implementation. This study will contribute provincially in the areas of curriculum development, teaching practices, school library programs, and the collaboration process among educators. In addition to the Department of Education, this research study will benefit teachers and students. Teachers will gain practical teaching strategies for integrating curriculum, knowledge in areas of resource-based learning and information literacy, and understanding of the collaborative process and value of working with a teacher-librarian. Students will gain curriculum tailored to their unique learning needs providing them with meaningful and interesting learning activities.

Conceptual Framework

The conceptual framework for this research study builds on the foundation of a constructivist perspective. A teacher-librarian's program is constructed with the goals of active learning and knowledge building always at the forefront. Todd (2001) tells us that, "A constructivist learning philosophy and practice centering on knowledge construction and knowledge use must define the role and practice of the school library" (p. 10). The teaching strategies and learning models in a school library program such as resource-based learning and the information process include these concepts of actively engaged learning and the construction of knowledge. Action research is a type of research methodology that enables the researcher to

be actively involved in the research process constructing new knowledge with their participants. The Collaborative Program Planning Teaching and Evaluation model used by teacher-librarians with classroom teachers is a model that reflects the principles of action research, since it involves the active planning, developing, and teaching of their curriculum all within a collaborative framework.

My beliefs about knowledge and learning are rooted in the constructivist theory. Franks, Langford, and McEachern (1995) state that, "Constructivism is an epistemological perspective that asserts that humans, as cognitive beings, actively construct personal meanings from their experiences. As a theory of knowing, then, constructivism potentially has a significant place in the study of teaching and learning" (p.iii). My belief that our minds are active in the acquisition of knowledge and my teaching strategies as a teacher-librarian directly relates to the theory of constructivism. Weeks (1995) claims that,

> New models of teaching based on a theory of learning called constructivism are receiving enthusiastic support from a wide variety of educators across Canada and United States. Understandably, the designers of these innovative approaches claim that constructivist thinking is superior to that which currently guides practice in most classrooms. Traditional teacher-centred models cannot cope, these advocates claim, with such realities as the complexities of learning, the information explosion, and the subjective nature of learning and knowledge. (p. 19)

This quote leads me to believe that there is a correlation between the teaching models in a school library program and the theory of constructivism. The philosophy of a school library program is based on the belief that students should be engaged in active learning activities that enable them

to construct knowledge that is subjective and essential for their individual learning needs. An action research methodology is also related to the theory of constructivism, since the researcher is an active member in the research process. Sykes (2002) states that "Action Research is constructivist in the truest sense - one gains wisdom through seeing patterns, systems, strategies, and networks when working through issues or events with others" (p. 41). In action research, the researcher and the participants work collaboratively together to construct and build knowledge from their research experiences to bring about a positive change for all parties.

The APEF curriculum documents provide a strong rationale for this research study's conceptual framework. The APEF documents contain learning outcomes that promote the principles of active learning and students being engaged in constructing their own knowledge. Information literacy outcomes are included within these learning outcomes and also provide a strong link to the school library program. A special section in the Language Arts APEF document states the importance of information literacy and the role the teacher-librarian plays in supporting teachers to develop a plan for teaching these information skills and strategies to students (APEF Language Arts Entry - Grade 3, 1997, p. 221).

One of the best teaching strategies that ensures the development of information literacy is that of resource-based learning, sometimes called the "manifestation of information literacy" (P.E.I. Department of Education, *BIL*, 2000). Doiron and Davies (1998) state that,

> Resource-based learning is an educational model that is the principal learning strategy applied by teacher-librarians whenever they want students to use resources to develop their information literacy. It is a model that is planned collaboratively by the teacher and teacher-librarian, uses a wide variety of resources and actively engages students in

learning skills that they need to be effective users of information. (p. 16)

A past example of a resource-based learning project is one that I completed with a grade three class and their classroom teacher around the theme, "Agriculture in Prince Edward Island." This project had the students actively involved in student-centered activities that used a variety of resources such as books, encyclopedias, maps, audio-visuals and technology. Students completed several learning stations that encouraged their development of information literacy, critical thinking, problem solving, and ICT skills. These activities were collaboratively planned by myself and the classroom teacher using the APEF curriculum documents and integrating core areas of the curriculum. Each activity focused on a different resource, teaching specific curriculum and information literacy outcomes, and engaging students in active, meaningful learning. As the classroom teacher and I moved through this process, self-evaluation and reflection became important to ensure objectives were met and new insights were gained for the next project. The concept of resource-based learning may be somewhat new to some educators, however to teacher-librarians, it is a major teaching methodology employed daily in their school library program.

Within the educational model of resource-based learning is also an equally important framework for conducting research known as the "information process." Doiron and Davies (1998) defines the information process as,

> A new concept which engages students in a meaningful interaction with information to achieve the goals of acquiring new knowledge, of thinking critically and creatively about that information, and of constructing a deeper understanding of important concepts. This information process is the framework for developing students' information literacy.

(p. 36)

It is also apparent that this information process is integrated throughout the entire APEF curriculum as students are continuously interacting with information in all educational disciplines. The information process consists of the skills and strategies that students need in order to process information efficiently. It is made up of seven steps that students can use: planning the process, gathering information, interacting with information, organizing information, creating new information, sharing information, and evaluating the process (P.E.I. Department of Education, *BIL*, 2000). In research projects, the concept of the information process is demonstrated to students by a series of lessons and activities using a variety of resources such as books, encyclopedias, maps, audio-visuals, and technology. Students begin to see that acquiring and using information effectively is definitely a process that is used throughout all of their learning.

A collaborative culture between teacher-librarians and classroom teachers facilitates the success of the teaching strategies discussed above. As stated earlier, there is a gap in the research that describes exactly how this collaborative process takes place. We have been fairly successful at developing such a culture at my school through collaborating on many previous library projects and establishing positive working relationships. We are fortunate to work with an administrator who is tremendously supportive of our school library program, a definite asset to this success. The goal of this research study was to build on and strengthen this collaboration and describe and monitor the factors that lead to its success using the collaborative planning model "Collaborative Program Planning Teaching and Evaluation." CPPT helps bring together educators working towards a common goal - the education of our students, creating what Frost and Durrant (2004)

call, "the collegiality that is essential for a school that aspires to be a learning community"(p.309). Therefore when we collaborate, the school can begin to become a community of learners where knowledge for all is greatly enhanced.

Operational Definitions

Collaborative Program Planning, Teaching and Evaluation

The design and implementation of curriculum-related units of study, accomplished through the shared expertise and equal partnership of classroom teachers and teacher-librarians.

Information Literacy

The ability to ... access, interpret, evaluate, organize, select, produce, and communicate information through a variety of texts, medias, technologies, and contexts to meet diverse learning needs and purposes.

Information Skills

Those processes in research, thinking and communicating which form the foundation for critical thinking and problem solving. These processes include the skills and strategies needed to retrieve, evaluate, organize, share and apply information effectively and independently.

Resource-Based Learning

The learning experiences, designed and implemented cooperatively by teachers and teacher-librarians, that actively involve students in the effective use of a wide range of print, nonprint and human resources.

School Library

The facility in a school which provides resources, services and programs that enhance and support the implementation of the curriculum and that contributes to the development of independent learners and decision makers.

Teacher-Librarian

An experienced certified teacher, with additional qualifications in the selection,

management and utilization of learning resources, who has the responsibility for administering the school library and for working with classroom teachers to design and implement instructional programs.

All of the above definitions were obtained from the Canadian School Library Association, February 1989. An exception is the definition of information literacy, which was obtained from the Prince Edward Island Minister's Directive for School libraries, 2000.

Chapter 2: Review of the Literature

Introduction

The professional literature that was reviewed for this research study is organized into five major areas: *School Libraries and Academic Achievement, Information Literacy, The Role of the Teacher-Librarian, Collaborative Program Planning, Teaching and Evaluation, and Action Research in the School Library.* This review of the literature provides background information for the reader as well as additional rationale for why this research study was conducted.

School Libraries and Academic Achievement

An influential report was published by Dr. Ken Haycock in 2003 entitled, *The Crisis in Canada's School Libraries: The Case for Reform and Re-Investment.* This report contains a comprehensive analysis and review of decades of research studies that have been completed regarding school libraries and their relation to students' academic achievement. This report will be used extensively as a framework for this section of the literature review. Dr. Ken Haycock is a Canadian university professor and researcher with an international reputation as a school library leader which makes his report significant to this study.

Haycock (2003) report states that there have been research studies completed from as far back as the 1930s on school libraries and their effects on student achievement. Haycock (2003) provides a comprehensive review of more than 200 of these studies and their conclusions. Many of these research studies were completed in the United States with very few Canadian studies making it difficult to transfer findings to the Canadian context. This very fact constitutes another excellent reason for this research study to be conducted in Prince Edward Island. This proposed study will add to the Canadian bank of research in school librarianship and help outline the role

of teacher-librarians in schools.

As part of his meta-analysis, Haycock (2003) states four major findings: 1) Larger school library collections that include a wide variety of resources such as books, periodicals, and access to technology are related to higher achievement. 2) School library staffing levels are correlated with student's test scores. Students' academic achievement is even higher when teacher-librarians collaborate with teachers in teaching information literacy skills and use technology in their library program. 3) School library programs that are open longer hours and have full-time qualified librarians who collaborate with teachers is related to higher achievement from students. 4) Schools that have a higher level of funding for their school library services is also related to increased achievement (Haycock, 2003, p.10-11). Haycock (2003) states that, "this research evidence shows a strong and compelling link between student achievement and the presence of well-stocked, properly funded and professional-developed school library programs and services" (p. 9).

A team of researchers, Lance, Welborn, and Hamilton-Pennell is responsible for completing numerous major studies in several U.S. states to identify how school libraries are related to academic achievement. Their 1993 "landmark" (Haycock, 2003) study entitled, *The Impact of School Library Media Centers on Academic Achievement* is the first of these studies to link school libraries and student achievement. Lance et. al (1993) conclude that, "this study provided evidence of the positive impact of library media centers on academic achievement in 221 Colorado public schools during the 1988-89 school year" (p. iv). This study stresses the importance of having a well funded library collection and access to a teacher-librarian who participates in the instructional process as reasons for this increased academic achievement

(Lance et. al, 1993). The Lance findings on the role of the teacher-librarian had a great impact on the school library community. For the first time, success was directly credited to a qualified teacher-librarian being involved in students' academic achievement. Subsequent research studies in at least nine states and over 3300 schools, also found that school library programs have a positive effect on academic achievement (Haycock, 2003). Repeatedly these studies note a strong correlation between adequately funded school libraries with qualified teacher-librarians working collaboratively with teachers and the ultimate success of students.

Information Literacy

"A thriving national and global culture, economy and democracy will best be advanced by people able to recognise their need for information, and identify, locate, access, evaluate and apply the needed information" (Australian Library and Information Association, 2001, p. 20). To succeed in the 21st century, people will need much more than a specific knowledge base. With ever changing technologies and the proliferation of information that is available to us, it has become necessary to possess essential skills and strategies to cope with this abundance of information. Nationally and internationally, these information skills have been re-conceptualized as the new area of literacy called "information literacy," recognized as vital to survival in the information society and a central focus for educational reform. As cited by Asselin (2004), " A major recommendation from the 2000 Program for International Student Assessment (PISA) calls for increased attention to instruction and assessment of information literacy processes" (p. 1).

In Australia in 2001, the Council of Australian University Librarians "published information literacy standards and outcomes for higher education" (Australian Library and Information Association, 2003, p. 27). The Australian Library and Information Association also

produced a "*Library Advocate's Guide to Building Information Literate Communities*" in 2003 (ALIA, 2003). In United States in 1998, the American Library Association and the Association for Educational Communications and Technology produced an information literacy standards document entitled, *Information Literacy: Standards for Student Learning* (AASL, 1998). In Canada in 2003, the Canadian School Library Association and the Association for Teacher-Librarianship in Canada followed suit and published an information literacy standards document called, *Achieving Information Literacy: Standards for School Library Programs in Canada* (CSLA/ATLC, 2003). In Prince Edward Island, the *APEF English Language Arts* curriculum document that was published in 1997 included information literacy outcomes and a section on how a teacher- librarian is a necessary partner in achieving them. All of these national, international, and local initiatives indicate a strong commitment by educational institutions to ensure that our students of the future become information-literate citizens.

The CSLA/ATLC's information literacy standards document states that, "The major learning outcome for the school library program is to develop students who are information literate" (CSLA/ATLC, 2003, p. 4). This statement establishes the link between the school library program and a student's development of information literacy. Asselin (2004) tells us that, "Teachers are not prepared to teach this aspect of literacy at the preservice or inservice level. A study of Canadian teacher education programs found minimal inclusion of information literacy" (p. 2). Information literacy however is not new to teacher-librarians and is a major focus of their library program. Information literacy is best taught through resource-based learning where students are actively engaged in locating a variety of information sources and creating new knowledge (Hancock, 1993). As teacher-librarians are knowledgeable in the resource-based

learning methodology and in developing information literacy activities, they can provide excellent assistance to teachers in these curriculum areas.

Several researchers have examined aspects of information literacy and how the school library plays a role in its development. Todd (1996) completed a research study entitled, *Integrated Information Skills Instruction: Does It Make a Difference,* "that sought to determine the impact of an information skills program integrated into a particular curriculum on learning and on student attitudes" (p.36) and concluded that "an integrated information skills program had a positive effect on the students' ability to solve information problems" (p. 44). A Canadian researcher, Branch (2001) completed a study called, "*Information-Seeking Processes of Junior High Students*, that examined the information seeking processes employed by junior high students from Inuvik, Northwest Territories, Canada when using CD-ROM encyclopedias" (p.11). Branch (2001) concluded that students need teachers and teacher-librarians to assist them in developing better searching strategies for information (p.23). Although there is some research to support the importance of information literacy being included in a school's curriculum, there are more research studies needed in this area.

The Role of the Teacher-Librarian

For decades, the role of the teacher-librarian has seen tremendous changes in its identification, clarification, and overall understanding by educators. Prior to the 1950s, the teacher-librarian was known as a "school librarian" and this role consisted of being a keeper of the library resources, an expert in literature, and training in traditional librarianship - a public library model transplanted into a school library context. The school library was a warehouse of resources and the school librarian was an organizer and manager of those resources - a librarian

and not a teacher. In the late 1950s and into the 1960s, the school librarian's role evolved into a teaching role whereby school librarians became responsible for teaching a set of "library skills" to students. This was the beginning of library curriculum for school librarians. School librarians did assist students in projects that were designed by their classroom teachers however the school librarian and the classroom teacher did not plan and teach these projects collaboratively (Doiron, 1999).

Changes reflecting a more learner-centered program for students occurred in curriculum in the 1970s and with so much information available teachers began to realize that they had to use more resources in their teaching and provide the students with meaningful active learning experiences. No one book could hold all the information needed on a topic. This new understanding of a resource-based learning model for teaching led to the emergence of the school librarian's role as that of also being a teacher (Doiron, 1999). "School librarians felt this sense of empowerment so strongly that they lobbied to be known as teacher-librarians, a term emphasizing their role as a teacher with special skills in using a wide variety of learning resources" (Doiron, 1999, p. 158). Resource-based learning shared by teachers and teacher-librarians has helped to form a link between the classroom and the school library program.

In late 1970s and 1980s, teachers and teacher-librarians became partners in a curriculum development process known as Collaborative Program Planning and Teaching (Doiron, 1999). This CPPT model indicated a major change in the role of a teacher-librarian from being a keeper of resources to an active collaborative member in both the teaching and development of curriculum. Resources were chosen to meet curriculum demands and student needs and the teacher-librarian helped link the resources to learning activities in effective and meaningful ways.

This gave the teacher-librarian a leadership role in developing an integrated school library program for teaching information literacy.

As information and communication technologies expanded, so did the role of the teacher-librarian. As well as being a manager of resources, developer of instructional programs, a teacher, a collaborator in curriculum development, the teacher-librarian also became known as an "information specialist." As an information specialist, a teacher-librarian was now the principal instructor of information skills now seen as part of the wider concept of "information literacy" (Eisenberg, 2002). In this expanded role, the teacher-librarian became responsible for assisting teachers and students in learning about new technology and information resources. The role of the teacher-librarian has undergone immense changes and continues to evolve with the changes in education. As Haycock (1999) tells us,

> With role clarification, a strong commitment to collaborative planning and teaching, a framework for success through flexible scheduling and a school-based continuum of information skills, units jointly planned and recorded with teachers, teacher-librarians will be in the forefront in the resolution of educational problems in schools in the information age. (p. 11)

In November 1997, the Association for Teacher Librarianship in Canada and the Canadian School Library Association published *Students' Information Literacy Needs in the 21st Century: Competencies for Teacher-Librarians* (CSLA/ATLC, 2003). This document lists several professional and personal competencies that a teacher-librarian should have in a school library of the 21st century. These are summarized as follows:

The professional competencies of a teacher-librarian are to possess knowledge and skills

> in the areas of collaboration and leadership, curriculum and instruction, cooperative program planning and teaching, information resources, information access, technology, management and research. The personal competencies of a teacher-librarian are a set of skills, attitudes and values that enable teacher-librarians to work efficiently and effectively. These include leadership, communication skills, ability to work in a team, a life-long learner, and a commitment to program excellence. (p. 79-82)

These competencies indicate the immense responsibility and sophistication that the role of the teacher-librarian will entail in the 21st century.

A vital part of a teacher-librarian's role is to be both an advocate for and a leader of their school library program. With educational fiscal restraints, there is always the danger of school library programs being underfunded or even worse cut entirely. Teacher-librarians must ensure that principals, teachers, parents, and decision-makers understand that school library programs affect student learning (Eisenberg, 2002). As advocates for their programs, they must provide clear evidence of their positive effects on our students, teachers, and the school as a learning community.

In the CSLA/ATLC's professional and personal competencies stated earlier, leadership is a necessary part of the role of teacher-librarians. The leadership role of a teacher-librarian includes having the knowledge and skills to provide leadership in CPPT, resources, technology, information literacy, and the development and teaching of curriculum (CSLA/ATLC, 2003). The teacher-librarian is in a position to demonstrate leadership in the school library and in the school. If a teacher-librarian wants to have a successful library program, then she/he must be prepared to evaluate the program and take action to make needed changes. Brown (1990) tells us that, "For a

teacher-librarian being a change agent means being an instructional leader" (p. 4). Instructional leaders are leaders that work to bring about change. As a leader wanting to make a change, it is important to have a vision that is valid and clear in order for your participants to understand its value and necessity (Brown, 1990).

Part of the leadership role of teacher-librarians is working with classroom teachers and principals to create a school library unique to that learning community. Brown (2004) tells us that a teacher-librarian should be a "proactive leader" and look for opportunities for collaboration instead of reacting to plans that are already in place (p. 15). When trying to establish collaborative partnerships with classroom teachers, teacher-librarians need to provide encouragement and support. Good leadership also means treating others with respect and dignity in any change process (Brown, 1990).

A principal's role also plays a significant part in the success of a school library program (Oberg, 1996). "The research on the role of the principal is quite clear: the principal is the single most important factor in the development of a strong school program; teachers respond to the principal's expectations" (Haycock, 1999, p. 5). A principal can help support and develop a school library program in many ways. A principal can include the school library program in the school's vision. A principal can be an advocate for the teacher-librarian's instructional program by promoting the program with other staff members. A principal can support collaboration between teachers and teacher-librarians by implementing flexible scheduling (Haycock, 1999). The principal can also encourage the teacher-librarian to be a leader in their library by allowing them to make the necessary decisions that can facilitate change for a successful library program.

Oberg (1996) completed a research study that "examined the meaning of the concept of

'principal support' from the point of view of seven teacher-librarians in two Alberta school districts" (p. 221). She concluded that the teacher-librarians had a clear understanding of how the principal can support them and how important this support is to their library program. However, in the implications for this study, Oberg (1996) stated that teacher-librarians will need more education to develop strategies that will assist them in gaining this valuable principal's support (p. 229).

Collaborative Program Planning, Teaching and Evaluation

In 1998, Doiron and Davies developed a Collaborative Program Planning, Teaching and Evaluation (CPPT) model for their two school libraries that shows how collaborative partnerships between classroom teachers and teacher-librarians can build successful school library programs. Although there are other frameworks for the CPPT process, this particular model was chosen for this research study since it was developed by teacher-librarians in my school district and it reflects the same implementation factors as in my school. The CPPT model is not simply a fixed planning process but "rather an exploration of possibilities based on an emerging collective vison that generates mutually agreed upon learning activities" (Doiron, 1999, p.165). The components of this CPPT model are summarized and described in detail in this review of the literature.

CPPT brings the classroom teacher and teacher-librarian together to develop, implement, and evaluate resource-based learning projects based on specific learning outcomes. They integrate the core areas of the curriculum and include the development of information literacy. Both the classroom teacher and the teacher-librarian bring areas of expertise to this planning process. The classroom teacher is knowledgeable in the individual needs of their students and in the classroom curriculum. The teacher-librarian has knowledge and skills in the areas of

curriculum development, resource-based learning, integration of curriculum, selection, use and availability of resources, technology, and information literacy. This process focuses on developing projects that use student centered activities and that actively engage students in their own learning, as well as the assessment of that learning (Doiron and Davies, 1998).

Some factors that help classroom teachers and teacher-librarian with the success of this CPPT model include: having a flexible timetable, adequate staffing, administrative support, planning time, and a plan for developing information literacy (Doiron and Davies, 1998). It is very beneficial when classroom teachers and teacher-librarian have planning time for CPPT and a flexible timetable to complete the resource-based learning projects with the students. It is vital that the school library has a qualified teacher-librarian with an appropriate amount of time to spend in the library for teaching, not just management of the library's resources. A principal is a tremendous support to a teacher-librarian and the development of a successful school library. It is essential that a partnership be formed between the administrator and the teacher-librarian one which is based on a shared vision for the school library. Since the APEF documents contain information literacy outcomes that our students are expected to achieve, it is the responsibility of the entire school to develop a plan for information literacy.

The Doiron and Davies (1998) CPPT model includes guidelines that the classroom teacher and the teacher-librarian can use to support the planning. The first item that classroom teachers and teacher-librarians should use when they begin to plan is the general and specific learning outcomes from the APEF documents. Using these, the classroom teacher and the teacher-librarian can begin to make decisions about the specific outcomes they would like their students to achieve at the end of the resource-based learning project. They should also decide

how this learning will be demonstrated throughout the project. Next, the partners discuss the variety of resources that will be used and the types of learning activities they would like their students to complete.

A large portion of this planning process involves the production of these learning activities. Both the classroom teacher and the teacher-librarian share in this task, possibly producing learning stations, activity booklets, or web-based activities. Based on students' needs, these activities should allow choices and be rooted in active, meaningful learning. The classroom teacher and the teacher-librarian then make decisions about the organization of the students' learning, the actual projects, and how they will share the teaching responsibilities. Next, these partners will have to make decisions about assessment, understanding that they will both be involved in the ongoing evaluation process. Some examples of assessment of the students' work could be: "checklists, conferences, learning logs, response journals, and mini-tests" (Doiron and Davies, 1998. p. 26). Students should also be included in the assessment of their work and in the project as a whole. This will help the classroom teacher and teacher-librarian plan for future projects. Last, a very important part of the CPPT process is for the classroom teacher and the teacher-librarian to plan for the students' "celebration of learning." After the resource-based learning project is completed, the learning should be celebrated with students, teachers, administrators, and parents. This could be achieved through an "Open House" where everyone is invited to view the students' projects and hear about the exciting learning that took place in their school library (Doiron and Davies, 1998, p. 22-26).

Brown (2004) described a successful collaboration in school library programs through a research study entitled, "*America's Most Wanted: Teachers Who Collaborate.*" As well as using

surveys and focus groups, Brown interviewed many teachers and teacher-librarians and from her data discovered ten attributes that contribute to successful collaboration. Brown divided these into two categories: environmental and social factors. "The environmental factors are: Scheduled Planning Meetings, Impromptu Discussion, Administrative Support, Defined Roles, and Flexible Scheduling. The social factors are: Proactive Team Leader, Shared Vision, Self Confidence in Contribution, Open Communication, and Trust and Mutual Respect" (Brown, 2004, p.14).

Although the environmental factors are definitely important in successful collaboration, if a teacher-librarian has the attributes of a proactive but flexible leadership, trust, shared vision, open communication and self-confidence in one's contribution, a teacher-librarian may be able to overcome environmental factors that are not available in their library program and still establish successful collaboration with teachers (Brown, 2004). Therefore the teacher-librarian's relationship with the classroom teacher is a vital one. This relationship must be focused on mutual respect and a willingness to acknowledge each others' ideas. The teacher-librarian will need to be a "transformational" leader that strives to empower teachers in the collaborative process of CPPT (Doiron, 1999, p. 165).

Action Research in the School Library

Educational reform and changes in curriculum, increase educators' responsibility to provide continual evidence of improved teaching and learning. Calhoun (2002) says that, "For 60 years, action research has been an avenue for creating professional learning communities whose members engage in problem solving and for attaining individual and collective goals" (p.1). Educators are being called upon to make informed decisions that are "data driven"(Johnson, 1993, p. 2). Action research uses traditional research approaches to generate

data for teaching/learning situations or professional development concerns. Action research follows a similar process as traditional research by using research questions, literature review, multiple data collection methods, and sophisticated data analysis (Sykes, 2002) with one noticeable difference in action research, the research is meaningful and empowering for the researcher as it directly relates to her or his own context or situation.

Martin and Tallman (2001) tell us that, "Action research is a type of inquiry that has re-emerged as a popular way for educators, particularly teacher-librarians, to gather information about challenging workplace issues" (p. 1). With education budget restraints, teacher-librarians are always faced with the possibility that their school library programs could be eliminated from the school's curriculum. A teacher-librarian willing to take on a leadership role, can use action research to provide the evidence needed for advocating support of their school library program. Asselin and Branch (2003) state that, "Classrooms and libraries are wonderful places to situate an action research project" (p. 1).

Sykes (2002) has published a book entitled "*Action Research: A Practical Guide for Transforming your School Library*" which is a comprehensive guide for a teacher-librarian or any educator that wishes to pursue action research. In this book, Sykes (2002) writes about her journey of completing an action research study called, "*Action Research Model: School Libraries of the Future*," demonstrating the similarity between her model and a traditional research process. Sykes (2002) explains that in action research, "Researchers parallel the working modalities of the scientist or investigator, interacting with others and constructing deep meaning about the topic, making new discoveries, and challenging their own ideas and opinions" (p. xv).

In an article, *Research in Teacher-Librarianship: The Foundation and Future of a*

Profession by Marlene Asselin and Jennifer Branch (2003), researchers list examples of research studies in which they are involved, some being action research. One example is a research study entitled, *Meeting the Affective and Cognitive Needs of Junior High Students during Inquiry-Based Learning*, "which provided the opportunity to examine which of the information and communication technology learning outcomes were being met by the research project and the accompanying teacher-librarian instructional strategies" (Asselin and Branch, 2003, p. 3). Another example of an action research study that included teachers was called, *Teaching Information Literacy in the Middle Grades,* that used "collaborative inquiry groups where teachers are engaged in action research to advance their teaching of information literacy" (Asselin and Branch, 2003, p. 2).

Through this review of the literature, this researcher discovered even more examples of action research studies conducted by teacher-librarians. In the journal article, *The Teacher-Librarian as Action Researcher,* there are three examples of action research studies all led by teacher-librarians cited by the authors Janet Martin and Julie Tallman (2001). These action research studies varied in research topics such as creating a professional collection for the teacher-librarian's colleagues, the role of a teacher-librarian, and using an "I search" research model with Grade 5 students (Martin and Tallman, 2001, p. 2).

A final example of an action research study was one I discovered in our very own province. This action research study is entitled, *Together We're Better: The Process of Collection Development in a Prince Edward Island Elementary School Library,* and was completed by Elizabeth Greenan in 2002. This action research study used a collaborative approach by involving both the staff and the students in exploring and improving the school

library collection. Greenan (2002) endorses action research by stating that this collaborative experience provided "knowledge sharing and increased teamwork with teachers" (p. 98).

Action research provides educators with the opportunity to be leaders and change agents. There are many positive effects of action research both on the research situation and on the researcher. Action research can help to improve educational systems, programs, policies, and teaching and learning. Action research can provide educators with the knowledge and skills in research methods and to become more aware of the possibilities for change, and of the ability to make a difference (Johnson, 1993). In a definition of the characteristics of teachers as leaders in educational reform, Wynne states that "a teacher that demonstrates leadership is one who engages in continuous action research" (2001, p. 2). Action research is an excellent methodology for a teacher-librarian to be both a leader and an advocate for their school library program by providing the research and evidence of its importance to education. Todd (2001) states that,

> This is what teacher-librarians as leaders are all about: actions and evidence that show initiatives and energies make a real difference to learning, that they contribute in tangible and significant ways to the development of human understanding, meaning making and constructing knowledge. (p.18)

Chapter 3: Methodology

Research Site and Population Selection

My research site was a small elementary school where I previously worked as a teacher-librarian for eight years. This particular year, I was on a leave from this school working on the completion of my Masters degree at the University of Prince Edward Island. This leave afforded me the opportunity to have much more flexible time for my research study. This elementary school has approximately 130 students from grades one through six, with one class at every grade level. The school's teacher-librarian and an information technology teacher are responsible for the maintenance and development of the school library and its adjoining computer lab. The computer lab and the school library are physically located within the same space which has been a real asset for integrating these two curriculum areas. As this research site is a small school, the positions of teacher-librarian and information technology teachers are only part-time allotments and therefore, both educators have other teaching duties within the school.

I had both personal and professional reasons for choosing this site. By previously working with the staff at this school, I had established relationships that enabled me to feel comfortable in the setting and the staff is comfortable with me. The staff were extremely supportive of my choice of their school as the research site and of their participation in my research study. In my past position as a teacher-librarian, I had already completed several resource-based learning projects with the staff at this school. The staff and I were familiar and knowledgeable in the collaborative process of developing and implementing curriculum as a part of the school's library program. This research study became an avenue to track our collaborative curriculum development process and provide evidence-based research for the continuing

development of the school's library program.

Participants

The participants of my research study included both educators and students. The educators were two classroom teachers from grades two and four, an ICT teacher for grades 1-6, and the school's teacher-librarian. The ICT teacher has a teaching allotment of approximately 33 % in the computer lab and 67 % teaching grade six. The teacher-librarian has a library allotment of approximately 33% and 67% teaching grade three.

The students from the classes of grade four and grade two were all involved in a resource-based learning project that was developed as a result of this research study. The total number of students who worked in the library on the projects was thirty-seven. However, only two boys and two girls from each class, who varied in their academic level, participated in interviews with me. The total sample of students who participated in interviews after the completion of the projects was eight students.

Researcher's Role

As a result of my work as a teacher-librarian, I have developed a passionate interest in resource-based learning, information literacy, and the CPPT process with teachers. I believe strongly in promoting the importance of having teacher-librarians in our schools. Through my professional experiences working in a school library, I have witnessed exciting teaching and learning models that are enjoyed by both educators and students. I have gained experience in collaborating with teachers on previous resource-based learning projects and have seen the benefits of this collaboration. As an educator and a self-motivated professional, I maintain a process of life-long learning, through membership in school committees such as professional

development and by continuing my education through many university courses, including the Masters program at U.P.E.I. These experiences and my personal belief in life-long learning drew me to conduct this particular research study.

My role as a researcher took many forms - a leader, a facilitator, and full participant in the research process. The current position of the teacher-librarian includes the responsibility for the development and implementation of the school's library program but is not involved in the active teaching of the projects. Therefore, during the actual teaching of the resource-based learning projects, my role of researcher became more of a full participant assuming the teaching role of a teacher-librarian. It was also my responsibility to ensure that my participants were treated ethically throughout this study. I kept my participants informed during each stage of the process and was willing to share any information that was collected during data collection such as interview transcripts and observations. The definitions of action research suggested earlier, all share the concept of the importance of collaboration in the research with the participants. I saw my participants as co-researchers and welcomed their input into the research study. To further protect the anonymity of my participants, only pseudonyms were used in any writing that resulted from this study.

Data Collection Methods

In keeping with qualitative research, I used multiple methods of data collection including participant observation, direct observation, interviews, and document analysis. As Burns (1999) claims, "Another argument made in favour of considering action research as viable research is that the data collection methods adopted by the researchers can be triangulated. Triangulation involves gathering data from a number of different sources so that the research

findings or insights can be tested out against each other" (p. 25). As cited by Mills (2003), Wolcott states that, "the strength of qualitative research lies in its triangulation, collecting information in many ways rather than relying solely on one" (p. 52).

In order to optimize the amount of data I collected, my principal method was participant and direct observation, as Patton (2002) says employing, "multiple and overlapping data collection strategies: being fully engaged in experiencing the setting (participation) while at the same time observing and talking with other participants about whatever is happening" (p. 265-266). As a participant observer in this research study, I also had ample opportunities for direct observations of the setting, all persons involved in this setting and their interactions with each other. Patton (2002) states that, "First hand experience with a setting and the people in the setting allows an inquirer to be open, discovery oriented, and inductive because, by being on-site, the observer has less need to rely on prior conceptualizations of the setting..." (p. 262).

My participant and direct observations were based on the collaborative development, implementation, and teaching of two resource-based learning projects with classroom teachers, the information technology teacher, and the teacher-librarian. Each project was planned using the APEF curriculum documents, teacher and library resources, and the CPPT model to guide the process. The procedures for each project are described below.

Project One: Grade Four - Bridges

Curriculum Context

This project was developed for a grade four class on the science theme of "Bridges." Although this is primarily a science theme, all core curriculum areas were integrated throughout the project.

Goals

The goals for this project were to develop nine learning stations which (1) addressed general and specific learning outcomes from the APEF documents including information literacy, (2) integrated all core areas of the curriculum including technology, and (3) used a variety of texts, different media, and information technologies. It was also important to produce a variety of learning stations which were active, meaningful, interesting, and that incorporated the individual learning styles of the students.

Meetings

The meetings needed for developing and implementing both projects varied in length, location, with whom, and in their formality. In the study, I used two types of meetings, ones that I classified as "formal" as they were actual scheduled meetings and ones I classified as "informal", meaning they were not scheduled or pre-arranged. Three formal meetings occurred during the grade four project on "Bridges." One formal meeting included all the participants of the collaborative team, the classroom teacher, the information technology teacher, the teacher-librarian, and myself. This meeting was held at the very beginning of the project in the school's library, was approximately 55 minutes in length, and was instrumental in the planning and development of the project. Content that was discussed at this meeting included the project's format, curriculum outcomes to be addressed, students' learning needs, resources to be used, learning station ideas, and how the workload would be shared for the construction of the learning activities. Two other formal meetings took place between me and the classroom teacher to discuss assessment of the project.

In Project One, there were also six informal meetings. These informal meetings were

with me and one or two other participants. They occurred in various locations such as the library, computer lab, classroom and staff room. Some examples of content that was discussed at the informal meetings were: more details of how the project would be implemented (time allotment, teaching responsibilities), sharing of ideas, and the construction of the learning stations.

Implementation and Teaching of Project

The implementation and teaching of the Bridges project took approximately five weeks from September 23 to October 28, 2004. The classroom teacher, information technology teacher, and I taught this project in the school library/computer lab. The teaching time was organized in one hour blocks every second day throughout the five weeks. There were nine stations each focusing on a different core curriculum area which included: Math, Language Arts, Science, Health, Social Studies, and Technology. At these stations, students completed activities that helped them develop skills of information literacy, problem solving, critical thinking, creative writing, research, and ICT. The students worked in pairs, except for one group of three, and students rotated to a different station each day with a folder that was used as a tracking tool for their project.

Project Two: Grade Two - Circles and Cycles

Curriculum Context

This project was developed for a grade two class on the theme, "Circles and Cycles." This was a fairly new science theme for grade two from the Department of Education which already used an outcomes-based education approach and integrated the core subject areas of Language Arts, Math, Science, Social Studies, Health, and Art.

Goals

The goals for this resource-based learning project was to develop nine learning stations that incorporated general and specific learning outcomes from the APEF documents including information literacy, integrated all core areas of the curriculum including technology, and used a variety of resources such as books, different media, and information technologies. It was also important to produce learning stations that were diverse, active, meaningful, and that addressed the individual learning styles of the students.

Meetings

This project needed four formal meetings. The first formal meeting was held in the school's art room with the Grade two classroom teacher, the teacher-librarian, and myself. The information technology teacher was unable to attend this meeting. The second formal meeting was with the entire collaborative team, the Grade two classroom teacher, information technology teacher, teacher-librarian, and the researcher. These two formal meetings involved discussions on topics of the project's format and structure, resources to be used, students' learning, outcomes to be addressed, learning station ideas, and how to share the workload for the construction of the learning stations. I also had two formal meetings with the classroom teacher to discuss outcomes that were being addressed in the project and ideas for assessment of the project.

There were eight informal meetings held for this project that included me and one or two participants. These informal meetings occurred in the library, computer lab, staff room, and classroom. Discussions at these meetings were about the project's implementation, the teaching of the project, and the construction of the learning stations.

Implementation and Teaching of Project

The collaborative teaching of the Grade Two Circles and Cycles project took place for 5 weeks from November 1 - December 3, 2004. The classroom teacher, information technology teacher, and I worked together on the teaching of this project. The nine stations focused on the core curriculum areas of Language Arts, Math, Science, Social Studies, Health, and Art, and also incorporated Technology. Students completed activities at these stations that encouraged their development of information literacy, problem solving, critical thinking, creative writing, research, and ICT skills. Students from this class came to the school library every second day of the school's 6 day cycle to work on one of the stations for about an hour. The students worked in pairs rotating to a different station each day.

Post-Interviews

As Patton (2002, p. 240) explains, we interview people because there are times when we can't observe everything that we want to know, especially a participant's feelings or perceptions of an issue.

After the completion of Project One "Bridges," I interviewed the Grade four classroom teacher and two boys and two girls from this class. The interview with the classroom teacher lasted approximately 40 minutes and was held in her classroom. Interview questions for the classroom teacher covered these areas: the role of the teacher-librarian, information literacy, planning sessions, and the benefits and barriers to the collaborative teaching of the project, the CPPT process and students' learning. My interviews with four students took place in the art room and lasted approximately 10-15 minutes. These interviews included questions on what activities the students liked and didn't like in the project, what they learned in the project, and

their perceptions of the classroom teacher, information technology teacher, and the teacher-librarian working together in the library.

After the completion of Project Two "Circles and Cycles," I interviewed the Grade two classroom teacher, information technology teacher, the teacher-librarian and two boys and two girls from the Grade two class. The interviews with the classroom teacher, information technology teacher, and the teacher-librarian lasted approximately 30 minutes and were held in the library and music room. Interview questions for these three educators were on the following areas: the role of the teacher-librarian, information literacy, planning sessions, and the benefits and barriers to the collaborative teaching of the project, the CPPT process and students' learning. My interviews with the four students took place in the art room, lasted approximately 10-15 minutes, and included questions on what activities they liked and didn't like in the project, what they learned in the project, and their perceptions of the classroom teacher, information technology teacher, and the teacher-librarian working together in the library.

A sample of all my interview questions is included in Appendices H and I. Informed consent and parental consent were obtained before the interviews were conducted. All interviews were audio taped and later transcribed by the researcher.

Document Analysis

A third method of data collection that was used in this research study was that of document analysis. When the classroom teachers, the information technology teacher, the teacher-librarian, and I collaborated in the development of the resource-based learning projects, we used our P.E.I. Department of Education curriculum documents, the "Building Information Literacy, (*BIL*)" online document, and P.E.I. school library program policies.

Data Collection Tools

The data collection methods of both observations and interviews involve recording copious amounts of field notes. Mills (2003) states, "The written records of participant observers are often referred to as fieldnotes." (p. 55). My primary data collection tool was a reflective journal to record all my observations and the interview transcripts. Mills (2003) states that, "Regardless of your specific area of focus, journaling is recommended as a way to keep track of not only observations but feelings associated with the actual process" (p. 56). This journal was a lifeline in my entire research process. It was extremely valuable for recording all my personal observations, interpretations, and reflections throughout the entire study.

With my participants' consent, I also used a tape recorder to assist me in the data collection process during my interviews and formal planning meetings. Marshall and Rossman (1999) suggest that, "Whatever the qualitative approach, however, researchers should practice and build habits for labeling audiotapes, carrying extra batteries, and finding quiet places for taking notes; such practices will pay off by keeping data intact, complete, organized, and accessible" (p. 148). It was imperative that I scheduled time into everyday to record my data and keep it well organized. As Patton (2002) says that, "Creative fieldwork means using every part of oneself to experience and understand what is happening" (p. 302).

Data Analysis

My guiding research questions were always at the forefront of my data collection process and became helpful in building a framework for my data analysis. Researchers have two primary sources of data that they will use in organizing their data. Patton (2002) explains these as, "(1) the questions that were generated during the conceptual and design phases of the study, prior to

fieldwork, and (2) analytic insights and interpretations that emerged during data collection" (p. 437). In addition to using my research questions as a framework for data analysis, I also identified patterns and themes from my data. Patton (2002) states that, "The challenge of qualitative analysis lies in making sense of massive amounts of data. This involves reducing the volume of raw information, sifting trivia from significance, identifying significant patterns, and constructing a framework for communicating the essence of what the data reveal" (p. 432).

My procedure included both inductive analysis and deductive analysis. Patton (2002) states, "Inductive analysis involves discovering patterns, themes, and categories in one's data. Findings emerge out of the data, through the analyst's interactions with the data... (p.453). In using inductive analysis, I scrutinized my data for patterns, themes, and categories that corresponded with my research questions. Patton (2002) states, ...in contrast to deductive analysis where the data are analyzed according to an existing framework" (p. 453). As my research questions were used as an existing framework, there were elements of deductive analysis in this process as well. I also developed a classification system that was organized and manageable for my research purposes which assisted me with the data analysis. I first hand - coded this data and then used a wordprocessor to further organize the data.

Ensuring Trustworthiness:

The trustworthiness of a research study is an immense responsibility of the researcher. There are many elements of criteria that researchers should use in establishing the trustworthiness of their research study. As cited by Patton (2002),

> Lincoln and Guba (1986) proposed that constructivist inquiry demanded different criteria from those inherited from traditional social science. They suggested credibility as an

> analog to internal validity, transferability as an analog to external validity, dependability as an analog to reliability, and confirmability as an analog to objectivity. In combination, they viewed these criteria as addressing trustworthiness...(p.546)

To enable me to be a credible researcher, I adhered to these criteria components in my research study.

Credibility

Patton (2002) states that the issue of credibility of a research study depends on three elements: rigorous methods for doing fieldwork, credibility of the researcher, and the audience's philosophical beliefs in naturalistic inquiry (p. 552-553). As discussed earlier, I used more than one method for data collection. By doing this, I used a strategy of "methods triangulation" which enabled me to confirm the consistency of my findings by using different methods of data collection (Patton, 2002, p. 556). There were instances when data was discovered that did not fit into my original findings or conclusions. This data was also used and considered helpful in establishing the credibility of my study.

As Patton (2002) suggests, "In qualitative inquiry, the researcher is the instrument" (p. 14). As I was considered the instrument in this study, I had to be diligent in every aspect of this research process. I was constantly questioning and reflecting on each stage of this process. As Patton (2002) tells us, "A qualitative analyst returns to the data over and over again to see if the constructs, categories, explanations, and interpretations makes sense, if they really reflect the nature of the phenomena" (p. 570). This research study needed a researcher who possessed the knowledge and skills pertinent to the study's focus and goals. As a teacher-librarian, I brought to the study a wealth of knowledge and experience in the diverse research topic areas of this study.

Through university courses in school librarianship and the Masters of Education program at the University of Prince Edward Island, I have acquired additional knowledge and skills that assisted me in completing a research study that is methodologically sound, ethical, and trustworthy.

My credibility as a researcher was also determined by how objective and authentic my reporting was of my participants' perspectives. Patton (2002) suggested a way to achieve this,

> Reflexivity reminds the qualitative inquirer to be attentive to and conscious of the cultural, political, social, linguistic, and ideological origins of one's own perspective and voice as well as the perspective and voices of those one interviews and those to whom one reports. (p. 65)

As a result of my teacher-librarian experience, I have developed a strong belief in the value of teacher-librarians working collaboratively with teachers. During my study, I kept aware of these beliefs and perspectives in an effort to not let any biases pervade into my data. I was diligent in authentically reporting my participants' perspectives and in not allowing my own perspective to influence this data.

Through the Masters of Education program at U.P.E.I., I have acquired knowledge about qualitative research which confirmed for me that my particular research study was suited to this type of research. This will also be helpful in establishing the credibility of using qualitative data in my study. Patton (2002) states that, "Thus, by knowing the strengths and weaknesses of both quantitative and qualitative data, you can help those with whom you dialogue focus on really important questions rather than, as sometimes happens, focusing primarily on how to generate numbers" (p. 573).

Transferability

As cited by Marshall and Rossman (1999), "Lincoln and Guba propose that transferability is a construct in which the researcher must argue that his findings will be useful to others in similar situations, with similar research questions or questions of practice" (p. 193). Therefore it would seem that the researcher can only argue for her study's transferability to other situations, that are extremely similar in situation, context, and theory. A researcher must provide the reader with vivid descriptions of her research that will enable the reader to make their own interpretations in relation to other research studies. In my research study, readers may be able to utilize information provided in the areas of the CPPT and resource-based learning models which could apply if the reader is in a similar context or situation.

Dependability

Marshall and Rossman (1999) cited Lincoln and Guba's (1985) construct of dependability as, "The researcher attempts to account for changing conditions in the phenomenon chosen for study and changes in the design created by an increasingly refined understanding of the setting" (p. 194). There were some changes in my research site and I adapted to those changes accordingly. For example, the teaching allotments and responsibilities of the school's teacher-librarian and the ICT teacher were different from the previous year. I kept track of these changes and recorded them in my researcher's reflective journal.

Confirmability

A final element of criteria in qualitative research is that of confirmability. Marshall and Rossman (1999) cited Lincoln and Guba (1985) as stating,

The final construct, confirmability, captures the traditional concept of objectivity. Lincoln

> and Guba stress the need to ask whether the findings of the study could be confirmed by another. By doing so, they remove evaluation from some inherent characteristic of the researcher (objectivity) and place it squarely on the data themselves. Thus, the qualitative criterion is, do the data help confirm the general findings and lead to implications? This is the appropriate qualitative criterion. (p. 194)

The richness of my data, keeping my data well-organized and available to others, and my ability to authentically and objectively describe my participants' perspectives assists in the confirmability of my research study.

Chapter 4: Findings

The purpose of this research study was to explore how the Collaborative Program Planning, Teaching, and Evaluation model (CPPT) is used to develop and implement integrated outcomes-based curriculum in an elementary school library program. My specific interests included learning about the role of the teacher-librarian in the CPPT process and in curriculum development, what the benefits and barriers to CPPT are, and its effect on students' learning.

The CPPT process of developing and implementing two library projects, one in grade two and another in grade four, at Parkdale Elementary school was tracked and documented from September - December 2004. The results of this documentation are organized by themes and categories that emerged from my data collection framed around the study's original research questions. The selected categories are the following:

- *CPPT Process*: *Planning Sessions, Implementation and Teaching of Projects, and Evaluation/Assessment*
- *Benefits and Barriers to the CPPT Process*
- *Student Learning*
- *Information Literacy*
- *The Role of the Teacher-Librarian*
- *Student Interviews*

My findings are also organized by the two projects completed by students and the two principal methods of data collection: participant observation and interview responses. All findings are reported in detail in this chapter.

The Collaborative Program Planning, Teaching, and Evaluation Process

CPPT - Planning Sessions (Participant Observations)

Project One Grade Four - Bridges.

In Project One, one formal planning meeting and six informal planning meetings or "impromptu discussions" were used to develop and implement the project. Our first formal meeting on planning the project included the entire collaborative team consisting of the grade four classroom teacher, the teacher-librarian, the information technology (ICT) teacher, and I, the researcher. This meeting took place in the school library lasting approximately 55 minutes. The teacher-librarian and the ICT teacher already had planning time scheduled together into their school timetable and we were fortunate to have the school's administrator free up time for the classroom teacher to also be available at the planning session. Resources used for this meeting were a planning guide model taken from the book, "Partners in Learning: Students, Teachers, and the School Library" Doiron and Davies (1998), APEF curriculum documents and theme-related resources from the school library, the grade four classroom teacher's curriculum, and the Teacher's Resource Centre. The participants of the meeting recorded their own notes of our discussions. As the researcher, I also took detailed notes and tape recorded the meeting to ensure the accuracy.

This planning meeting began with the teacher-librarian asking the classroom teacher what she visioned for the project. The classroom teacher told us about the theme, "Bridges" and that it was primarily a science theme. Her wish was to incorporate all areas of the curriculum in the project. The classroom teacher explained exactly what APEF outcomes and core curriculum areas she would like addressed, some preliminary ideas and structure for the project, and her

students' learning needs. She informed us that there are new programs for Science and Social Studies in grade four that have not been implemented yet. Therefore we were unable to use very many of the APEF outcomes for the "Bridges" project in these two curriculum areas. She also explained that there were no APEF outcomes published at all for Health and Art as of yet. We would have to use the present programs for these areas of the curriculum to determine what student learning we wanted to address. She stated that she had nineteen students in her class and that she possibly would like them to work in groups with learning stations. We decided that we would develop nine learning stations so that most of the classroom teacher's students could work in pairs. We discussed that the students would have about an hour a day every second day of the six - day cycle to work on the project. The teacher-librarian then showed the classroom teacher and other participants at the meeting some library resources that could be appropriate for the project. Since the teacher-librarian was new to this library position, I took on the role of supplying information to the meeting's participants on the area of information literacy. I explained to the participants that the APEF Language Arts document includes outcomes that address information literacy and of its importance to be included in this project.

Then a "big brainstorming" session started to develop ideas for nine learning stations that integrated the core curriculum areas and included the APEF outcomes the classroom teacher had indicated. The ideas flowed back and forth with all participants recording notes in their planning books and taking part in the process. The variety of expertise from the teacher-librarian, the ICT teacher, and the classroom teacher became apparent as the ideas were formulated. The teacher-librarian offered expertise on the availability of resources, the integration of curriculum, and the outcomes-based education model. The ICT teacher offered expertise on various applicable

technologies that suited the theme and addressed the outcomes. The classroom teacher was the expert in the grade four curriculum and in knowing her students' learning styles and capabilities. As a researcher and former teacher-librarian at this school, I brought to the meeting information on the CPPT process, knowledge of resources, resource-based learning, outcomes-based education, and information literacy. The brainstorming session produced a multitude of ideas, some of which were discarded for various reasons such being too difficult for students or taking too long to complete in the allotted time. The classroom teacher always had the final say in what ideas could and should be utilized as she knew her students' abilities, what curriculum needed to be taught, and what outcomes and activities had already been addressed in her classroom. The brainstorming session concluded with activity ideas for nine learning stations that each focused on a different core curriculum area including ICT and information literacy, used a variety of resources, an outcomes-based education model, and addressed many different learning styles.

The planning meeting followed a step - by - step process that was cyclical at times. For example, the brainstorming was like a reflective spiral, as our discussions revolved in a circle around the outcomes, the activities, and the resources. When we became comfortable with the learning station ideas that were formulated, our discussions changed to the topic of assessment. The classroom teacher explained that she would like to develop a rubric for assessment that focused on skills from the outcomes addressed, as well as, use the assessment method of observation during the projects. She also indicated that she would like to have her students be involved in their own assessment having access to the rubric. Everyone agreed this was a good idea.

As time was getting short, the discussion changed again to some decisions about sharing

the workload of the construction of the stations. The workload of the nine stations was divided between the classroom teacher, the teacher-librarian, the ICT teacher, and me, the researcher. It was decided that we would not need another formal meeting with all of us but we would keep in contact through informal discussions in the school. The project was set to launch one week from this meeting. The planning guide from this meeting is included in Appendix J. One sample of the nine learning stations is included in Appendix M.

Six informal meetings were also necessary to complete the planning of Project One. These meetings were short in duration lasting from 5 - 15 minutes, with me and one or two participants and occurring in various locations of the school such as the library, computer lab, classroom or staffroom. Although these meetings were not formally scheduled and did not include all the project's participants, they were very important in finalizing the plans for the project. These impromptu discussions were on topics of the construction of the learning stations and the management and implementation of the project. These meetings were both helpful and collaborative as we were involved in sharing ideas for the construction of the stations and providing feedback to one another of any changes needed. For example, these informal meetings usually consisted of the teacher-librarian or the ICT teacher and me obtaining feedback and clarification on the construction of our designated learning stations with the classroom teacher. These meetings also included discussions of the set up and organization of the stations.

CPPT- Planning Sessions (Participant Observations)

Project Two Grade Two - Circles and Cycles

Project Two took two formal and eight informal planning meetings to develop and implement this project. Our first formal planning session was with the grade two classroom

teacher, the teacher-librarian, and me, the researcher. The ICT teacher was unable to attend this meeting. It took place in the school's art room as the school library was occupied, lasted approximately 60 minutes, and followed a very similar process as to the formal planning meeting for Project One. We all took our own notes and I tape-recorded the meeting for accuracy. We were fortunate to have the school's administrator assist by freeing up time for the classroom teacher to attend this meeting during the school hours.

The planning meeting began with the teacher-librarian asking the classroom teacher what she would like to see happen in this project. The classroom teacher told us about what her vision was for the project, the theme, structure, what outcomes and curriculum she would like addressed, and some information on her students' learning styles. She stated that she had eighteen students in her class and would like to see nine stations developed for this project so that the students could work collaboratively in pairs. The classroom teacher then showed us the grade two science theme, "Circles and Cycles," and explained that although it was primarily a science theme, all core areas of the curriculum had already been integrated into it. The theme was contained in a binder full of ideas and activities which addressed general and specific outcomes from the APEF documents. We also used the planning guide model taken from the book, "Partners in Learning: Students, Teachers, and the School Library" Doiron and Davies (1998), another binder with all the specific curriculum outcomes for grade two that was developed by the Department of Education, and some classroom and library resources. I then explained to the classroom teacher and the teacher-librarian about the importance of information literacy and where the information literacy outcomes were located in the APEF documents. We all agreed that this project should include all the core curriculum areas including ICT, and information

literacy.

We then started to brainstorm ideas for stations focusing on a different curriculum area at a time and discussing possible resources for each activity. For example, we looked at the outcomes that needed to be addressed for the theme, Circles and Cycles in Math, and brainstormed different activities and appropriate resources that would meet these outcomes. We followed the same process for each curriculum area. Again the ideas flowed back and forth, some being discarded and some being further developed. Even though there was a flurry of ideas discussed, no final decisions were made. We realized that we needed more time to plan this project plus the expertise of the ICT teacher, who could not attend that day, was needed to reach final decisions. In order to integrate ICT outcomes, we decided to schedule another planning meeting when the ICT teacher could be present to resume our discussions.

Our second formal planning session began with the teacher-librarian, the classroom teacher and I reviewing what we had discussed at the previous planning meeting for the ICT teacher's benefit as well as our own. This meeting lasted approximately 65 minutes. Everyone recorded their own notes in a planning book and in my role as the researcher, I tape- recorded and transcribed the meetings for accuracy. The planning meeting led right back into more brainstorming of activity ideas for the stations. Again, the discussions seemed to follow a spiral going from outcomes to activities to resources. Through this process, it was also apparent that the students' learning was always at the forefront. When new activities were discussed, we always went back to the outcomes and clarified what students would be learning from these ideas. When an activity and resource were discussed, all participants offered suggestions as to how the activity could work. The particular expertise of each participant became visible as the

teacher-librarian offered knowledge of resources, integration of curriculum, and the outcomes-based education model, the ICT teacher shared excellent ideas that included a variety of technologies, and the classroom teacher gave us knowledge of the grade two curriculum and her students' learning habits and capabilities. As a researcher and former teacher-librarian at this school, I offered information on the CPPT process, knowledge of resources, resource-based learning, outcomes-based education, and information literacy. Our brainstorming resulted in activity ideas for nine stations that integrated all the core curriculum areas including ICT, and information literacy, used a variety of resources, an outcomes-based education approach, and reflected the many diverse learning styles of students. We were confident that students would enjoy working on this project.

After we were comfortable with the learning stations we had discussed, we concluded our meeting with a discussion of how we would share the workload for the construction of the stations. We divided up the amount and work of the stations between us and also discussed that we would share our work with each other as it was happening. We decided that we would not need another formal meeting to complete the planning stage of this project, however we knew we would be meeting informally throughout the next week. The project was scheduled to begin in twelve days. The classroom teacher told me twice after the formal planning sessions that she had "really enjoyed the meetings." The planning guide for this project is included in Appendix K. One sample of the nine learning stations is included in Appendix N.

Eight informal meetings or impromptu discussions also took place before Project Two was implemented. These informal meetings were between me and one or two participants and were short in duration, lasting approximately between 5 and 15 minutes in length. They occurred

in various locations throughout the school such as the school library, computer lab, staffroom or classrooms. These meetings were used to help one another with the construction of the stations, how we planned to manage the project, and to gain any further clarification on its implementation. For example, in one informal meeting, we discussed how the stations would be organized in the school library and other various locations. Another one of our informal meetings dealt with an orientation day for the students to learn about the stations before they started their actual work. The classroom teacher explained to the ICT teacher and I exactly what process she would like the orientation day to follow and what she hoped to accomplish with the students.

Interview Findings for Planning Sessions (Both Projects)

The interview findings for the planning sessions of the CPPT process are a compilation of my participants' answers to specific interview questions. These participants were the teacher-librarian, ICT teacher, and both the grade two and grade four classroom teacher. They will be reported below using the interview questions as headings and actual quotes from the participants.

What did the teacher-librarian bring to the planning session?

The interview responses revealed that the teacher-librarian brought a variety of expertise to the planning sessions indicating that the role of the teacher-librarian is a multi-faceted one. All participants commented that the teacher-librarian brought "knowledge of the resources" and of "all the curriculum areas" to the planning meetings. One participant said that teacher-librarians have "organizational skills in resource-based learning." One participant acknowledged that the teacher-librarian had "familiarity with the outcomes, a knowledge of how to address as many outcomes as possible in this situation, and of integrating curriculum." Another participant said

that, "The teacher-librarian helped me focus on the theme and how the facility could be utilized. The teacher-librarian always kept the learning outcomes in the forefront with all the curriculum areas." These responses signify a teacher-librarian's knowledge of curriculum, resources, learning outcomes, and resource-based learning, and that teacher-librarians help focus the CPPT process on what the student would learn and on meaningful uses of resources.

What did the classroom teacher bring to the planning session?

All interview participants commented on the importance of the classroom teacher bringing "knowledge of their students, the students' personalities, learning styles, and work habits, and the level of learning wanted for the students to the planning meeting." All participants discussed how the classroom teacher "brought ideas of the format of the project, the theme and topic, and how they wanted the project to unfold." Three participants commented on the classroom teacher's knowledge of their "grade specific curriculum"and "what outcomes they would like addressed in the project." It is apparent from these responses that the classroom teacher supplied the format and structure that the project would entail, knowledge of the students, and the student learning needed to occur throughout the project.

What did the ICT teacher bring to the planning session?

All the participants interviewed indicated that the ICT teacher brought expertise in a "knowledge of technologies that help to increase the student learning in the particular technology as well as knowing how technology meets curriculum needs." Having the ICT teacher included in the planning sessions enabled the ICT teacher to "go and find appropriate technology and websites, and make technology-based stations."

Other themes related to Planning:

When interviewing my participants, other interview questions revealed interesting information that was related to the theme of planning and is included here. One participant commented that having a planning guide during the meeting was very helpful. "It was all laid out there. When you have a process to follow you can fine tune as you go along." Two participants mentioned the issue of needing enough planning time for this process. "We all believe so much in this, and put so much time and effort into it, that I believe it is necessary for administrators to show support by giving you planning time during the day." "Time is always an issue in the planning. We were lucky to have the time but you really need it. It should be put into your day."

CPPT- Implementation and Teaching of the Project (Participant Observations)

Project One Grade Four - Bridges

The implementation and collaborative teaching of Project One took twelve days to complete. The students came down to the school library/computer lab every second day for about an hour (10:40 - 11:45 am) for approximately 5 weeks. The students were organized into 8 groups of two and 1 group of three and rotated to a different station each day with their group. If they didn't finish their station in that one day, they would put aside that station work to be completed at a later date. In total, the students needed nine days to work on the assigned stations and three days to complete any unfinished work. As the learning stations involved using a variety of resources, we were fortunate to have some groups of students work in different rooms. The station that required viewing a video was located in an adjacent empty classroom and the art station was located in the art room that was located right across the hall from the library/computer lab. We were also fortunate to have the computer lab in the same room as the

school library, a definite asset for easy integration of technology into library projects.

For this project, any direct teaching of theme content was completed prior to the students coming to the school library and working on the learning stations. The learning stations were seen as an opportunity for students to apply the knowledge they had acquired in the classroom and to gain necessary skills and address further outcomes relating to the Bridges theme. Therefore, the collaborative teaching of this project took on more of a facilitative role by having three teachers circulating the different rooms helping students when necessary and allowing the students to work in independent groups. (As stated earlier, the teacher-librarian's timetable this year allowed her to participate in the planning of the projects, not the teaching. The ICT teacher's position does allow for participation in both the planning and teaching of the projects. To enable me to be a full participant in the process, I assumed the role of the teacher-librarian during the collaborative teaching of the projects. Therefore, in this study, there were three educators involved in the collaborative teaching stage. In my previous experiences working as a teacher-librarian at this school, I was responsible for both the library and technology program whereby only myself and the classroom teacher collaborated in the development, implementation, and teaching of resource-based learning projects.)

During the collaborative teaching of the project, we also had opportunities to discuss issues of student learning and assessment. In each session, the classroom teacher brought the assessment rubric that we had developed to the project and we used this rubric to monitor student work and provide support for further teaching. She also gave this rubric to the students who used the rubric as a guide when completing their work. Having the rubric enabled the students to know exactly what was expected of them. The classroom teacher took notes of any observations

of her students' learning and of our discussions on their assessment. We also discussed whether we were helping students too much. We learned that with three teachers there was a tendency to possibly help students more than they needed. As a teacher, you always want to be helping and therefore with more teachers available this could be a concern. We had to be careful to let students be independent and allow more discovery on their part. That being said, the needs of a student who experiences great difficulty can more easily be met with more teachers available.

In our discussions, we also reflected on the learning stations themselves, the ones we would change if we were to do this project again and the ones we liked the most. It is impossible to produce perfect learning stations the first time that you implement a project; this collaborative reflection produced insights into how these stations could be revised and enhanced for future use.

We found that students worked very hard on this project. They enjoyed the variety of stations and circulating to a new station each day. We never had to deal with any behaviour issues; students were always intent on completing their work. In the hour block, if they finished one station early, they would take the initiative and go back and work on any other stations that they had not yet completed. The classroom teacher told me that " her students get excited when she tells them they are going to the library." During the implementation of this project, the classroom teacher made the following comments, "I am enjoying doing this project," "I am learning a great deal from this project," and "I am enjoying the process."

CPPT- Implementation and Teaching of the Project (Participant Observations)

Project Two - Circles and Cycles

The implementation and teaching of Project Two took thirteen days. We started the project with one block of time for an orientation in order for the students to learn about the

stations and what was expected of them during the project. The students also required nine days to work on their designated stations and three days to complete any unfinished stations. The students came to the library every second day for about an hour (10:40- 11:45 am) to work on the learning stations. They were organized into nine pairs. Each day the students worked on a different station that the classroom teacher had assigned to them. As the stations contained a variety of resources, we were once again fortunate to be able to have some stations located in rooms other than the library/computer lab. A listening station was located in an empty adjacent classroom and the art station was located in the art room right across the hall from the school library/computer lab. There were two technology stations in this project and as indicated earlier the computer lab is located in the same room as the school's library.

The orientation day was an excellent idea for the implementation of this project especially because of the grade level. For the orientation, the students were divided into three groups and the ICT teacher, the classroom teacher and I were responsible for teaching these groups about three of the nine stations. The groups of students rotated to each of us every 15 minutes. This was an excellent opportunity for the students to become familiar with the content of the learning stations and to understand exactly what they would be doing when they started the project the next day.

The collaborative teaching of this project involved the classroom teacher, the ICT teacher and I circulating around the three rooms giving students help and direction when necessary. Any direct teaching of theme content was completed by the classroom teacher prior to the students coming to the school library to work on their learning activities. Each day was different depending on the group of students that were working on a particular station as some students

needed more help than others. The classroom teacher did an excellent job of pairing her students. She certainly had the expertise in knowing which students would work well together. I witnessed many students helping one another in their groups.

Although this project seemed busier for us than Project One because of the grade and level of help the students required, we were able to have some collaborative discussions on student learning and assessment while the students were working on their stations. It was very beneficial for the ICT teacher and I to have the classroom teacher right there to answer any questions we had about her students' learning and their capabilities regarding the quality of work. The ICT teacher and I were then better able to help her students as we became knowledgeable of which students needed more direction and what their individual work habits were. This collaborative teaching process allowed the students who needed more help than others to get the assistance they required.

The students worked very hard and were always enthusiastic about their work. Many students only needed some direction for their station in the beginning and once they received it were able to work quite independently. We did not have to deal with any behaviour issues during this project; students were very focused on their work. I was particularly impressed by the days the students were finishing up their work for the project. On these days, the students kept themselves organized and knew exactly what stations they had to complete. As soon as they finished one station, they were ready to go onto another.

Some positive comments that the classroom teacher made during this project were, " This project is really going great" and "I really liked the library skills station because of all the skills the students are learning." I also witnessed a conversation between the ICT teacher and the

classroom teacher on the value of this project. The ICT teacher commented that "it is really great you now have another well developed project for a new theme." The classroom teacher agreed and explained that she has been "building many great theme-related projects as a result of previously working on library projects other years."

Interview Findings for the Implementation and Teaching of Projects

(Both Projects reported together)

The interview findings for the implementation and teaching of the projects summarize participants' answers to specific interview questions. These participants were the teacher-librarian, the ICT teacher, and both the grade two and grade four classroom teachers and are reported below using the interview questions as headings and their direct quotes.

What are the benefits of the teacher-librarian, the ICT teacher, and the classroom teacher teaching together?

One major benefit that came through in my interviews was that collaborative teaching with more than one teacher enhances student learning. One participant stated that, "I think the students get more out of this teaching because you can again address more children because there are three of you knowing the project so well." Another participant commented that, "Certainly teaching together allowed the kids to have more assistance when needed, to keep them guided in the direction we wanted them to go." Another response declaring the benefits for students' learning was, "You have more people serving the students giving them more individualized attention and a better learning opportunity." All the participants agreed that by having more teachers involved in this project, " there was a combined knowledge in the room" and "the expertise is right at your hand which helps to meet on task time and no time is wasted."

There are also benefits for the teachers involved in the collaborative teaching. One participant stated that it was helpful, "if you sensed you were going in the wrong direction, everyone was there to help provide you with clarification. You get a broader range of what everyone is doing. There was more support for you especially when you don't know these students. The classroom teacher is there to guide you in the student's capabilities. You can then modify your expectations right away from that help." This response indicates this collaboration can help teachers increase their knowledge of other grade levels and their own professional development. One participant commented on how collaborative teaching provided, "more of a collaborative effort, again a team vs. individual."

What were some of the problems with the teacher-librarian, the ICT teacher, and the classroom teacher teaching together?

One of the potential problems with three educators teaching together is that, "we might have been giving too much help because there was three of us." Teachers often feel that they must "always be active because you are used to being active as a classroom teacher. We had to really be mindful of that, to not be assisting the students too much. You want to help them all the time. We also had to be mindful of are you facilitating or are you doing it for them. However, there is always that in teaching."

Two participants stated that another problem that could occur in collaborative teaching would be, "if personalities didn't match" and "If someone is in there working as an individual rather than as a team. I think where you run into difficulties is if it isn't a true collaboration. That didn't happen with us but it could happen. You could see it happening if someone tried to take ownership and not relinquish control."

CPPT- Evaluation /Assessment (Participant Observations)

Project One - Bridges

In the planning stage of developing Project One, the classroom teacher and I had two formal meetings on how we would assess and evaluate students. In our meeting on assessment, we referred back to the planning guide developed at the first planning meeting. This guide contained all the outcomes that we had felt were being addressed in the Bridges project. There were an immense number of outcomes listed in our planning guide and therefore we concluded that it would be difficult to produce an assessment tool that physically recorded all these outcomes. We knew that we would also be assessing the students through observation of their work on their projects and the completed product. We decided to construct an assessment rubric that linked specific skills with the outcomes. These skills were ones that students were learning throughout all of the learning stations. We used a Language Arts document that contained examples of rubrics for reading and writing to help us. We then wrote a rough draft of an assessment rubric that contained the following skills: information skills for reading, comprehending and answering questions, grammar and punctuation, problem solving, technology, and viewing skills. We were not able to finish the rubric at this meeting as it was taking considerable time so we scheduled another meeting for the following day to resume the process.

At our second formal meeting on assessment, the classroom teacher and I continued our discussions on the rubric and finalized the details. We worked on writing the rubric using values for students' responses indicating whether it was a strong, good, adequate or poor response. We decided that the students would be taught about this rubric and would use this rubric during their

work on the learning stations for this project. We felt it was important for students to be involved in their own assessment and to understand exactly how their teachers were evaluating them. This assessment rubric is included in Appendix L. As indicated earlier, during the collaborative implementation and teaching of the project, the classroom teacher, the ICT teacher, and I also had the opportunity to discuss our observations of the students in regards to evaluation and assessment. The classroom teacher recorded these discussions and observations that were to be used for her own assessment.

Evaluation/Assessment (Participant Observations)

Project Two - Circles and Cycles

During the planning phase of Project Two, the classroom teacher and I had two formal meetings on finalizing outcomes for the project and on assessment. Although there had already been discussions at our planning meetings with the collaborative team, I wanted to clarify exactly what outcomes we were addressing in this project for the final draft of our planning guide and I also wanted to discuss assessment as we were unable to discuss it at our first planning meetings due to a lack of time.

In both meetings on assessment, the classroom teacher and I used the APEF curriculum documents for each core curriculum area to finalize what general and specific outcomes we felt were being addressed in the learning stations. This final draft of the planning guide was shown to the ICT teacher and the teacher-librarian for their approval. We also discussed how the project was going to be assessed noting that although assessment is usually done solely by the classroom teacher, we would collaborate during the teaching and implementation of the project. All participants of the research study were involved in observing the students for evaluation purposes

and sharing these observations with each other. The classroom teacher constructed a rubric as well that was used for her own assessment of the students' final product.

Interview Findings for Evaluation/Assessment of Student's Projects

(Both projects reported together)

Although my interview questions did not include specific questions on assessment, there were some interesting comments made by my participants on evaluation and assessment during the interviews. One participant stated that, "I liked creating the assessment rubric. I learned a lot from that. That was another benefit." This same participant also commented that they had hoped we could have had "more time at our initial planning meetings to discuss assessment to include more details in our assessment, we were very pressed for time." Another participant stated that a benefit of the CPPT process was that, " we talked about evaluation together and this gave everyone ownership and responsibility." These comments suggest that a full CPPT process must include attention to assessment.

A Celebration of Learning (Both projects)

An important part of the CPPT process is to celebrate students' learning. This celebration of learning is usually discussed at your early planning sessions to ensure that it will take place and that it will be successful. A celebration of learning can include parents, the community, and/or other classes within the school.

Our celebration of learning took place after both the projects were completed. Unfortunately, we didn't plan this event early enough, ran short of time, and therefore were only able to invite other classes from the school to attend. However, it was still a real success and I was very pleased that we were able to have the event. Students from both grade four and grade

two brought their projects down to the school library and positioned them around the room. The students were organized in their groups standing alongside their projects ready to present their work. Then students from all the other classes in the school came to the library at different times to see the students' work. The grade four and grade two students were very excited to show off their work. The visiting students seemed to enjoy seeing the projects and learning about them as I heard many positive comments from students when they viewed the projects. The grade four and grade two students looked very proud and confident. I was impressed to watch grade two students teach grade six students about technology, demonstrate their projects, and talk about the skills they had learned.

The celebration of learning showed students the importance of the work completed. They worked very hard on these projects and deserved recognition for their efforts. Teachers also benefit by witnessing students discussing what they have learned, which once again confirmed all the skills and knowledge students have acquired during the project. It is also beneficial to include parents and the community in a celebration of learning as it is a great opportunity to promote your school library program and to show the incredible amount of learning that happens in a school library. The teacher-librarian told me that she wants to "always include a celebration of learning after the library projects have been completed." It is an extremely valuable part of the CPPT process and should not be missed.

Benefits and Barriers to the CPPT Process

My interviews with the teacher-librarian, the ICT teacher, and both the grade four and grade two classroom teachers included responses to questions regarding the benefits and barriers of the CPPT process. These responses which are direct quotes from my participants are

interwoven with my own observations and reported in this section.

What are the benefits of the CPPT process?

Through my participant observations, I observed how the CPPT planning model assisted us to stay focused and keep organized. One participant said that, "another benefit is that you are thinking of all the parts of the process, you don't leave out anything." One participant also stated that the process gave us "better organization" and "that when you have a process you end up creating a good learning opportunity for students because you are following a step by step process, not leaving things out." Another participant commented on the importance of the entire collaborative team being involved in this process, "You are in there in the beginning, you see it developing, you are going through the process with all those people in the room and then you see the outcomes and the evaluation. You have the whole picture." By keeping everyone involved and informed at all times, we did not run into any major problems or difficulties with the implementation of the projects.

In our planning sessions and implementation of the projects, I observed many ideas being shaped by the expertise of three people involved in the CPPT process. Our planning sessions revealed that each person had their own unique strengths and knowledge. One participant stated that, "everyone brought their expertise to the table, there was an idea brought forward and then more and more ideas are formulated." Another participant said, "I found it was a great experience for me, the whole process of working with the three people involved. It always qualifies the belief that more minds are better than one." Through my observations, I witnessed the collaborative team developing learning stations which addressed many learning outcomes, learning styles, skills, and which used a variety of resources. Our discussions always centered

around what the students would be learning in these stations. As a participant said, "It is great to have everybody with their ideas but also with one thing in mind, the student's learning." One participant also stated that, " In a small school where there is only one teacher at each grade level, you tend to feel isolated, This way you get a teacher's support, more ideas coming to the table and everyone has different learning styles which is given to the children in a project like this." Being a part of this collaboration enabled me to share ideas, acquire feedback from other educators and gain further knowledge in a variety of areas.

Another benefit of the CPPT process was that the learning stations and ideas developed did integrate the core areas of the curriculum and address many learning outcomes. One participant confirmed my observation by this statement, "We covered all the areas of the curriculum and a lot of outcomes. We made it more interesting by having all the different stations. By having the curriculum integrated, it added to the interest level. I found the students looked forward to the changes in the stations each day, the variety of them. Students need variety and it wasn't like work to them. I never had one complaint." This was also an observation of mine that the students were always intent on their work and we didn't have any behaviour issues. Another participant recommended this type of project, "I think it is so great because we need to focus on outcomes and these projects address so many outcomes. As a teacher, I love it! It is the easiest way to teach outcomes and make good connections." Another participant stated the importance of integration, "I think we should be looking at these cross-curricular projects for everyone, it is so important to integrate all the areas of the curriculum. There is a lot of work in this in the beginning but then it goes smoothly."

Participants voiced many positive responses about the importance of CPPT for students

as well as for teachers. One participant stated that, "I think it is an important part of learning to be in the library especially working collaboratively with others. I think it is an important part of a school and the learning for students and if we didn't have it, it would be a real loss for the students and teachers. The students were more in charge of their learning. They had more ownership. When we sit down and talk about doing a project like this, that is the reflection part. I don't think we do enough reflecting. All schools would benefit from these projects." Another participant commented, "It was a great learning experience for me. It was neat to see how it all works, the whole process." I also learned a great deal from participating in the CPPT process and from the collaboration with the three educators such as more ideas for learning activities, teaching strategies, and integrating curriculum.

One participant said that, "I think we worked together well. The personalities of the individuals made it a pleasure to work together." I also observed that we all got along very well throughout both projects. We supported one another by continuously sharing ideas and gaining much needed helpful feedback.

What are the barriers of the CPPT process?

An issue that seems to always be a barrier in the CPPT process is the ability to have enough planning time. Two participants commented that, "The time is always an issue in the planning." One participant said, "We were lucky to have the time but you really need it. It should be out into your day." We were fortunate that the school's administrator gave us adequate planning time for both projects. However, this is not always the case in other schools and can become a barrier that teacher-librarians and classroom teachers must face and try to overcome.

During the implementation and teaching of the projects, there were times I became

concerned with giving too much assistance to students. I discussed this issue with the ICT teacher and the classroom teacher and we all agreed that it could become a problem and that we should monitor our assistance with students carefully. In my interviews, one participant commented on this as well, "I thought one barrier was in the evaluation. I wasn't sure how much help was being given by the teacher-librarian and the ICT teacher. We had to discuss that a lot and it had to be done right away. If we didn't we would forget and affect the accuracy." However this same participant added that, "But I would rather have it this way, then just me doing it because the students benefitted so much from having three teachers. Overall at the end of the day, the benefits outweigh the barriers. That is really the only barrier I thought."

One participant commented on the importance of everyone participating in the collaboration, "I don't think there could be any barrier unless people weren't getting their input out there. The point of getting together was that everyone had a say in what might work and what might not. If you don't have a say than there is no point, you might as well not be in the room. People's feelings could get hurt in a situation like that. Personalities are an issue, if everyone gets along, there are no problems." I observed that throughout this whole process all the participants worked well together. Everyone's ideas were shared and valued.

Student Learning

My interviews with the teacher-librarian, the ICT teacher, and both the grade four and grade two classroom teachers included questions on the benefits and problems in regards to the students' learning during the projects. These direct quotes along with my own participant observations of the student learning that occurred throughout both projects are reported below.

What are the benefits for students when the teacher-librarian, the ICT teacher and the

classroom teacher collaborate?

All my interview participants commented about the benefit to students' learning by having "3 specialists with them in mind, 3 people who are knowledgeable in their meaningful learning." As a result of having three specialists involved in the planning of the projects, I observed stations being developed that varied in skills, resources, and the learning styles that were addressed. A participant said that the students "had the experience of a well thought out and all rounded project where there were more experts than just one." Another participant said that "with more teachers planning learning different ways, we create learning stations that address all the children's learning styles. Eventually all the children's strengths are met and they enjoy it more." I observed students becoming excited when assigned to a new station each day and then being able to work on certain learning activities that were of particular interest to them.

By students having access to more educators, one participant noted that this also provided them with more access "to greater resources, more resources, and quality resources." In the planning and implementation of both projects, I observed all three educators contributing to the provision of a variety of different resources such as many texts, medias, and technologies.

Two interview participants stated that another benefit to student's learning was the fact that by having three teachers involved in the teaching of the projects, "the students have the assistance of 3 adults while they are learning which provides "more one on one assistance with students." Another participant confirmed this benefit by the following statements, "There is no down time, no delay in learning. That is one thing I noticed about this whole thing, the kids are all purposeful all the time. In this model, the students aren't sitting waiting for help. They get help right away and keep on working. You are facilitating not the old model of direct teaching. I

think this model is fantastic myself." In my participant observations, I also observed that by having three teachers available, the students received any direction they needed immediately and then they went right back to their project work. This is also very beneficial for students that experience greater difficulty in their learning as they receive extra assistance that may not be possible in a classroom with only one teacher.

One participant commented that when students "see 3 people collaborating together, it shows them what can be done in a group. Part of their learning in an elementary school is how do we get along in a group. If we work together, they learn what great things come out of that." During both projects, I observed the students working collaboratively and helping one another in their group. They would take turns reading directions and then have a discussion of how they should accomplish the task togther. One day, I observed a child from grade two helping her partner with reading information from a book. When the child that was reading was finished, the other child congratulated her partner by saying, "Good job (Name), great reading!"

One participant stated that working in the school library rather than the classroom "gave the students a certain amount of freedom and that "they like the space and it is a good change in environment for students." This participant then commented that when students are "working in small groups they can handle more detailed learning of this type." Another benefit reported by a participant was that the students "got to work with different individuals themselves than just in the classroom."

Through my participant observations, I noted some specific learning experiences that students had when working on the learning activities. In both projects, I observed how the students appeared to become more independent in their work as the project progressed. For

example, when students were assigned to a new station, they needed less assistance in following the directions for their learning activity and in completing the task. Once they knew the routine, they became quite independent in their work.

Another benefit to the students' learning by having more teachers available was that the students received assistance they needed in target areas. For example, I observed all three educators helping students with their reading and writing skills. We guided the students in using proper grammar, word usage, and complete sentences. I also observed that these skills appeared to improve in all the students throughout the projects.

One day, in the grade four project, I observed two students working on the station where they had to complete the task of building a bridge using various household materials. I had an interesting discussion with the students. They told me that they had a plan and described this plan in detail to me for how they were going to build the bridge. When I asked them how they came up with these ideas, they said, "they had learned it from previous learning stations in this project." It appeared to me that these students were learning some problem solving and critical thinking skills from this particular learning activity and transferring their learning from one context to another.

As many stations included information literacy outcomes, through my observations, it appeared that the students from both projects were acquiring information skills. It seemed as if the students were becoming more proficient at accessing information from a variety of resources, locating specific information for their needs, and using that information effectively. They seemed to require little assistance with these skills as the projects progressed. When I asked students if they found the stations difficult, they always answered with confidence, "No, it was easy."

What are the problems for students when the teacher-librarian, the ICT teacher, and the classroom teacher collaborate?

A potential problem for students when three teachers are involved in teaching students at the same time was that "You may need to feel purposeful as a teacher and be going too far, there is the tendency to help too much. In that area, we have to be careful we aren't taking away opportunities for discovery and learning." Another participant suggested that "we almost should make ourselves look busy so they could be more independent." However, the participant added that "It was also the first of the year so they did need more help and we had to take that into consideration. there was too much assistance because there was three people." In my observations during the implementation of the project, the ICT teacher, classroom teacher, and I had discussions on this potential problem of giving "too much assistance to students." These discussions helped us be more aware of how to enable the students to become more independent and allow more discovery of their learning.

One participant stated that, "We need to be more conscious of students who are on a modified program and adjust the stations accordingly, we tend to forget that." I did observe one student that required a great deal of assistance during this project and perhaps this student's work should have been adjusted. This is definitely something we should be more aware of. However, as there were three teachers available, this student did receive the assistance he or she needed to complete the work.

Another participant stated that a potential problem could be if "the teacher-librarian or the ICT teacher do not know the learning level of the students. They wouldn't know which students are independent workers." In our projects, I observed that this problem was avoided by the ICT

teacher, the classroom teacher, and I having many discussions on the specific learning styles of the students. This same participant also said that, "some students are only able to work with one teacher, with 3 teachers they may feel overwhelmed." I did not observe this happening in our projects but it is something that could certainly be an issue for some students.

Information Literacy

My interviews with the teacher-librarian, the ICT teacher, and both the grade four and grade two classroom teachers included questions on the area of information literacy and its relevance and importance to our students' learning. The Prince Edward Island Ministerial Directive (2000) concerning school libraries defines information literacy "as the ability to ... access, interpret, evaluate, organize, select, produce, and communicate information through a variety of texts, medias, technologies, and contexts to meet diverse learning needs and purposes"(p. 1). My participant observations and direct quotes from my interview responses are incorporated together and reported in this section.

What has this project taught you about Information Literacy?

One participant stated that, "I think it is very important for students to know how to obtain information from a variety of resources and in a variety of ways" and in this project "they used a lot of different tools." For both projects, a variety of resources were used to help students learn how to access information from different sources. There were stations that used books (Non-Fiction and Fiction), books with cassettes, a video, and technologies including use of the internet and computer programs such as a spreadsheet and wordprocessing program and the library program, Microcat. Another participant commented that, " I really enjoyed the library skills station that you made, it was awesome" and the project taught me about "selecting new

medias, something I will always use." Another participant stated that by these projects including information literacy, "it has reconfirmed for me that it is successful when I now see it done with other classes, it is a wonderful way to learn."

One participant commented that, "this project gave me a comfortable feeling that I was covering the outcomes of information literacy and that the students are learning what they need for the next grade." Both projects did incorporate many information literacy outcomes which are outlined and included in this thesis's appendix.

One participant said that, "The technology expertise is so important in these projects. The internet provided so much information." Students are exposed to so much information by having access to the internet. Therefore, a role of educators has become to help students gain the necessary skills to use this technology effectively.

How important is Information Literacy to a student's learning?

All participants agreed on the definite importance of developing curriculum that ensures students are acquiring information literacy skills. One participant said, "It is one of our outcomes for students to become a critical reader and I think that is important for students. When you expose students to many types of information, this helps with critical literacy. They are reading and thinking, is this the information they need. The reality is they are living in the information age, they need to be critical readers. I think when you have different methods of obtaining information, they are using their literacy skills." One particular station that was developed for the grade four project was a research station that used a number of non-fiction books to answer questions on the topic of bridges. Students were involved in reading these books and making decisions on selecting correct information that answered their questions. Students had to

determine which information was appropriate for their needs. They also had to use reference tools within the books to search and locate the information.

Another participant stated that, "It is important for students to know what is relevant to make decisions about the information. I think it is invaluable to their learning. I think it is our role to teach them how to access information properly. We should show them all the resources and how to use them." One learning station in the grade two project focused on developing students' library and information skills. At this station, students using the library computer program Microcat, searched for Non-fiction books on a specific topic, found the books on the library shelves with the computer's information (title, author, call number of book), and then answered questions using the books. They also had to use reference tools such as the index and glossary in the books to help them answer the questions.

One participant commented that, "Students need the information skills. They have to know it and use it well. If you don't expose them to this, you are doing them a disservice. They need to have that information, how to access the information, how to wordprocess." This same participant stated that, "It is very important now because of the billions and billions of information they get and that the students get lots of exposure to technology at this school." Both projects included stations that incorporated technology such as the internet and a spreadsheet and wordprocessing program. Students were involved in accessing information from a number of websites and making decisions about which information would suit their needs and complete their task. In the grade two project, students used a spreadsheet program to complete a story that had been previously written for them in the wrong order. Students had to follow specific directions, type in the correct information into the spreadsheet cells, and then the story would

appear in the correct order for them to read when complete. Another participant added that information literacy "is a lifelong learning process."

The Role of the Teacher-Librarian

My interviews with the teacher-librarian, the ICT teacher, and both the grade four and grade two classroom teachers included questions on the role of the teacher-librarian and of the potential importance of having the teacher-librarian involved in the projects. These participants' responses along with my own observations of the teacher-librarian's role in both projects will be reported below.

What would you say is the role of the teacher-librarian?

All participants stated that the role of the teacher-librarian is to "provide resources and ideas" and "help plan and organize themes" for resource-based learning projects. In our planning sessions I observed the teacher-librarian offer ideas, knowledge, and resources suited to the themes of the projects.

One participant also said that the role of the teacher-librarian is "to assist the teacher in developing a project that meets the curriculum outcomes." During the planning meetings, I observed the teacher-librarian help the classroom teacher with integrating the core areas of the curriculum and addressing learning outcomes in the project. The teacher-librarian has a great deal of previous experience with integrating curriculum and the outcomes-based education model.

One participant commented on a teacher-librarian's role in a school by stating, "The teacher-librarian should act as a school leader to guide classroom teachers on how to fully utilize the library and its resources to its capacity." I observed the teacher-librarian informing teachers

of ideas and ways the library could be used for both projects by indicating available library resources and possible activities that could be implemented. I also observed the teacher-librarian taking on a leadership role by starting the planning meetings and guiding the process.

How was the role of the teacher-librarian important to this project?

The participants all said that the role of the teacher-librarian in both projects was "very important." The teacher-librarian "knew the resources and the material that could be used for the project" and was "an important team member." One participant stated that the teacher-librarian "was a key figure in the planning stages." In the planning meetings, I observed the teacher-librarian taking an active role in providing knowledge and resources that were beneficial to both projects.

One participant commented on how the teacher-librarian's knowledge has an effect on students' learning by this response, "The teacher-librarian is a specialist in the area of resource-based learning and information literacy and this knowledge contributes to successful and meaningful learning for the students."

Student Interviews

My student interviews consisted of four students, two boys and two girls, from both grade four and grade two, for a sample total of eight students. The student's responses are organized into five general areas resulting from the interview questions and are reported in this section. As the projects varied in content, the student responses for grade four and grade two are reported separately.

Grade Four - Bridges Project

Favorite activities

In the interviews, students were asked what was their favorite activity while working on the library project. Two participants said that their favorite station was the art station because, "we got to build our own bridge." One student said that they liked the technology station best because of the activity they were able to do. Another student said that their favorite activity was the science experiment because, "it was fun seeing what happened to the nails, how the sand makes them rust."

What the students learned

In my student interviews, I asked the students to tell me three things that they learned while doing this project. All participants listed a variety of different areas of content that they learned from the project. For example, one student said that, "I learned about all different kinds of bridges, how to build a London bridge, and how the coated nails didn't rust as fast as the uncoated nails." Another student stated that, I learned a lot of things like about the Confederation bridge, about safety on the bridge, and how bridges are built with many different kinds of machines." One participant stated specific information they learned from certain stations such as, " At the math station, I learned how long the Confederation bridge was, I didn't know that." Another student said that they learned a new skill by, "using the dictionary" and reference books "to find information." All the interview participants had no difficulty thinking of at least three things they learned while working on the Bridges project.

Things they didn't like or would change about the project

In the interviews, I asked the students if there was anything they didn't like about the project or if there was anything they would like to change about the project. The students gave some insightful and interesting responses to these questions. One student said that they "didn't

like one station because it took a long time to do." Another student offered that at the art station maybe " you could build a certain type of bridge with more directions." One participant stated that, "It was all fun but the research station took really long. We had to do a lot of research and writing." When this same participant was asked if there was anything we should change about the project, the participant added that, "I don't know, I really liked it because a lot of it was research and information. But the research was too long. It was our first station and we are still doing it." One student also said that the, "research station had a lot to do in it and we should have more time to work on stations that take longer." These responses indicate that student's opinions are very valuable when evaluating and reflecting on the project's success. These opinions are helpful to teachers when making any changes or revisions to the project's learning activities.

Differences between working in the school library vs. the classroom

Students were asked if they noticed anything different about working in the school library as opposed to working in their own classroom. One participant responded in relation to the variety of resources they used in the project by, "we used books to find things and went to websites on the computer." Two students commented on the fact that, "you got to learn about bridges." One student added that you got to " work with two people all the time" and the student "liked that." This same participant also stated that they liked working in the library because, "there is more space to move around, it is less crowded and you can hear better." Another participant stated that the topic was different from last year, " Last year, in the library we learned about agriculture. This is about bridges and how to make bridges."

Other information

In concluding my interviews, I asked the students if there was any other information they wished to add to this interview. One student said that, "It was really fun. You got to learn about different bridges, go on the computer, watch a video and learn how to build a bridge." Another participant also said " It was fun"and "We got to do different things, build a bridge, do an experiment, go on the computer, and watch a video where I learned some things about bridges." One participant stated that, "I really liked it because a lot of it was research and information."

Student Interviews

Grade Two - Circles and Cycles Project

Favorite activities

My interview questions for grade two were exactly the same as for the grade four students. My first interview question asked them to tell me what their favorite activity was while working on the library project. One student said that they liked the "Library skills station the best because you got to find books and stuff like that." Another student said they liked the "Circle of friends station because I got to make the faces and color them." Two participants stated that they liked the art station because "they liked making the butterfly house and they got to paint."

What the students learned

I asked the grade two students to tell me three things that they learned while working on this library project. All the students listed different areas of content they learned about the theme, Circles and Cycles. For example, one student said they learned , "about the life cycle of the caterpillar and it can become a butterfly in 17 days." Another participant said that, "I liked

doing the water cycle because I never knew those words before." Another student told me they learned that, "when chickens come out of the egg, they are all wet." One participant reported learning about a specific skill and said, "I learned how to use the library computer." These are only some of the responses from the students. They had no difficulty telling me three things they learned throughout the project.

Things they didn't like or would change about the project

Students were asked if there was anything they didn't like about the project and if there was anything that we should change about the project if we were to do this project again. All of the participants named specific stations that they found difficult or may not have liked as much as the other stations for various reasons. For example, one student said that they didn't like, "coloring the butterfly as it was hard to cut out and put the head on." This same student offered the suggestion of changing one station to have less "cutting and pasting." Another student suggested that we have, "two art stations." One student said that they didn't like, "the math station," because "I didn't like doing the fractions." Again many of these responses would be beneficial to the classroom teacher, the ICT teacher, and the teacher-librarian when they are evaluating the project and deciding how the project may be implemented next year.

Differences between working in the school library vs. the classroom

Students were asked if they noticed anything different about working on this project in the library as opposed to working in their classroom. One participant discussed all the different things you did in the library, "You got to go on the computer, you got to find books, do a spreadsheet and make a butterfly." One participant stated that in the library we learned about the "life cycle of an animal." Another participant said that "we didn't have to write a lot."

Other information

To conclude my interviews, I asked the students if there was any other information they wanted to add to this interview. This question was a particularly difficult one for the grade two students to understand as they all responded by saying they had nothing to add. So instead, I asked them if they liked the project. All the participants said, "Yes, I liked the project." One student said they liked the project because, "I got to do painting." The students' responses seemed to reveal that they enjoy activities which are active, allow them to be creative, and give choices in their learning.

Summary of Findings

The findings of the study indicate the important and necessary role the teacher-librarian plays in curriculum development, the CPPT process, and which point to a leadership role for the teacher-librarian in building a collaborative school environment. The findings show the benefits and barriers to using the CPPT process in curriculum development and how this process can foster collaboration among educators in a school setting. The findings also show how using the CPPT process can be beneficial to both teachers and students' learning.

Chapter 5: Discussion

Within an action research framework this study tracked, examined, and presented findings of how a teacher-librarian, two classroom teachers, and an ICT teacher used the Collaborative Program Planning, Teaching and Evaluation (CPPT) model to develop curriculum through two resource-based learning library projects in an elementary school library. The projects involved nine learning stations that integrated core areas of the curriculum including ICT and information literacy, addressed provincial specific curriculum outcomes, and produced interesting and meaningful activities for students. The two student projects were planned, prepared, and taught collaboratively, and took place over a five week period. The study used the following guiding questions throughout the research process:

- How do teacher-librarians act as leaders in curriculum development and implementation in an elementary school?
- How do classroom teachers and teacher-librarians use the Collaborative Program Planning, Teaching and Evaluation model in curriculum development and implementation?
- What are the benefits and barriers to curriculum development and implementation from using the CPPT process?
- How are information literacy outcomes integrated into the outcomes-based education environment and the CPPT process?
- What are the benefits for students when teachers and teacher-librarians collaborate in developing, implementing, and teaching curriculum?

A discussion arising from the study's key findings which correspond with the guiding

research questions will be presented under the following headings:

- The CPPT Process - Benefits and Possibilities
- Factors for Success
- Benefits to Teachers
- Benefits to Student Learning
- Leadership Role of the Teacher-Librarian

The CPPT Process -Benefits and Possibilities

The CPPT model provides a "coherent, collegial framework" (Frost and Durrant, 2004) to assist educators in developing a collective vision and goals in planning activities. For a school library context, Doiron and Davies (1998) define, "(CPPT) as a process that involves teachers and teacher-librarians as partners in the development of curriculum that integrates resources, information skills, and shared program objectives. The partners plan, teach, and evaluate together activities that meet the interests of students within the stated learning goals of the school" (p.22). According to the above definition of the CPPT process, this research study has successfully shown how the CPPT model can be used and that the model is sound for collaboratively developing curriculum in an elementary school library. The key benefits of the CPPT process discovered throughout the study include: CPPT helps organize planning, CPPT ensures student learning, CPPT allows for sharing of ideas, CPPT focuses educators on assessment, and CPPT works in other contexts.

CPPT helps organize planning

Some comments from the research study's participants on how the CPPT process helps to organize our thinking and learning were: "You are thinking of all the parts of the process, you

don't leave out anything" and it offers "better organization" for the planning discussions. "You are there in the beginning, you see it developing, you are going through the process with all those people in the room and then you see the outcomes and the evaluation. You have the whole picture." This study used the CPPT model as a step by step guide to ensure the planning was organized and focused on the goals and outcomes, the team members wanted to accomplish. By including the collaborative team in the entire process, everyone had the same opportunity to share their knowledge and ideas, and be a part of the process from beginning to end. This was a definite asset in relieving any ambiguities that could have occurred during the process.

CPPT ensures student learning

One teacher stated, "When you have a process, you end up creating a good learning opportunity for students." This idea indicates that CPPT helps ensure student learning. The CPPT guide designates headings where you must identify the learning outcomes, resources, and activities that you wish the students to learn throughout the resource-based project. By recording these curriculum outcomes, activities, and resources during our planning meetings, student learning is always at the forefront of the team's goals, outcomes, and evaluation.

CPPT allows for sharing of ideas

Another benefit of the CPPT process was how the process provided the environment for sharing ideas, "I found it was a great learning experience for me, the whole process of working with the three people involved. It always qualifies the belief that more minds are better than one." Such comments reflect the philosophy of the CPPT process when the collaborative sharing of everyone's ideas and knowledge creates opportunities to learn from others, construct new knowledge, and build positive working relationships. Each person from the study brought

an area of expertise to the CPPT process from which that we all learned and benefitted. It is my belief that this sharing of knowledge enhances our own personal and professional development.

CPPT focuses educators on assessment

The benefits of the CPPT process spread to an educator's assessment of student's learning so that by following this guide, the team's planning meetings included early discussions of how the projects were assessed and evaluated. It became clear as to the importance of assessment being discussed earlier rather than later. When we discussed assessment at the beginning of the projects, our discussions were more focused on the entire process. We were then able to develop opportunities for assessment that better reflected the curriculum outcomes and the student learning that we wanted to address. Using the CPPT guide proved to be a helpful tool in these discussions. As one of the study's participants commented, "We talked about evaluation together and this gave everyone ownership and responsibility." It is imperative that a full use of the CPPT process include attention to assessment/evaluation as this gives ownership and responsibility to all team members.

CPPT works in other contexts

As Doiron (1999) tells us the CPPT process is an, "exploration of possibilities based on an emerging collective vision..."(p.165). The basic elements of the CPPT model follow a process of mutual collaboration and sharing of ideas by the participants which in the end helps them execute a collective vision, goals, and outcomes. This suggests that when the above elements of the CPPT process are present, it could be successfully used in other contexts. For example, a school's ICT teacher could use this planning model with classroom teachers when planning technology outcomes and activities for students' learning in the computer lab. Some

other examples of different contexts are school committee and grade-level meetings, Department of Education planning meetings and/or any other planning activities that involve the work of a collaborative team.

Factors for Success

All schools are unique cultures which may affect what factors are necessary or beneficial for successful collaboration. Teacher-librarians are constantly struggling to foster collaboration within their school library program. This research study confirms Brown's (2004) study that yielded several factors for successful collaboration. Two types of factors include: 1)Environmental factors: Scheduled Planning Meetings and Impromptu Discussions and Administrative Support and 2) Social factors: Proactive Team Leader, Shared Vision, and Mutual Respect. These attributes all work in conjunction with one another and no one factor is more important than another. When a teacher-librarian and the collaborators involved possess the social traits of a proactive leader, share a collective vision and have mutual respect for each other, then the absence of some of the environmental factors may not impede the collaboration (Brown, 2004, p.18). This study showed the presence of both environmental and social factors which resulted in a very successful collaboration. Further the study supports that social factors can supersede environmental factors and could be a determinant in overcoming the environmental obstacles and still produce a successful collaboration.

Environmental Factors

Planning time.

Participants commented on the issue of planning time as being a factor for the success of the collaboration, "Time is always an issue in the planning. We were lucky to have the time but

you really need it. It should be put into your day." While it is obvious to suggest time for planning is essential, the study gives a clearer understanding of the relationship between formal/scheduled meetings and informal/impromptu discussions. Scheduled planning meetings provide the initial impetus and launching point at the beginning of the CPPT process to ensure adequate time and the involvement of the entire team to discuss and establish the goals and outcomes for the activities and/or project. After the initial scheduled planning meetings, impromptu discussions provide for further discussion and feedback on specific issues pertaining to the project's implementation and final results. Impromptu discussions are not scheduled and include the conversations between the collaborators that may occur in a staffroom, hallway or classroom. These impromptu discussions are also important in keeping the enthusiasm and motivation for the planning process going, further encouraging the collaboration between the team members.

Administrative support.

Teachers repeatedly pointed to the importance of administrative support for a successful collaboration, "We all believe so much in this, and put so much time and effort into it, that I believe it is necessary for administrators to show support." This research study concurs with Brown's (2004) study that having administrative support is very beneficial to enhancing successful collaboration in schools. An administrator has the power to promote and support collaboration by providing flexible scheduling for planning meetings, funding for workshops, and most importantly by advocating a positive collaborative climate throughout the school (Haycock, 1999). We were fortunate to have such administrative support from an administrator who has been a long time advocate and supporter of the teacher-librarian and the school library

program. This administrator provided positive encouragement for the team's collaborative efforts along with time for the collaborative team to plan with each other within designated school hours.

Social Factors

Proactive leadership.

Brown (2004) tell us that, "Proactive team leaders help maintain cohesiveness and accountability for all team members" (p.15). Although all team members participated equally, the teacher-librarian took the lead in providing direction for the CPPT process, modeling resource-based learning, applying the outcome-based education model, and the integration of curriculum. The classroom teacher also provided valuable leadership by initiating the project, stating what learning outcomes she wanted her students to learn and clarifying the content and structure of the project. Both the teacher-librarian and the classroom teacher were proactive leaders by looking for opportunities for collaboration and following through by using the CPPT model.

Shared vision and mutual respect.

A shared vision and mutual respect are important attributes for any successful collaboration. A collaborative team member must feel that there is a purpose to the collaboration, one that is based on a collective vision, and that her/his ideas are acknowledged and valued. The team member should feel a sense of "open communication" where everyone has equal time to share their thoughts and ideas. As one participant from the study shared with me, "I don't think there could be any barrier" in the CPPT process "unless people weren't getting their input out there. The point of getting together was that everyone had a say in what

might work and what might not. If you don't have a say then there is no point, you might as well not be in the room." In our case, the collaborative team showed the attributes of mutual respect, trust, and collegiality for one another. We shared a common vision for the projects, felt comfortable working within the team, and had ample opportunity to contribute our knowledge and ideas. One participant confirmed my observations by this statement, "I think we worked together well, the personalities of the individuals made it a pleasure to work together."

Benefits to Teachers

In addition to helping develop interesting and effective learning communities, the CPPT process can provide a variety of benefits for teachers. As Frost and Durrant (2004) tell us,

> Schools can become professional learning communities when teachers experience a sense of belonging and shared values and purpose, encouraging them to make contacts, develop relationships, and explore and test practice through inquiry, evidence, reflection on experience, comparison and contrast from a range of educational perspectives.(p.324)

The CPPT model provided an excellent opportunity for teachers to share knowledge, learn from one another, build relationships, and further their own professional development. We actively used the development of "curriculum to build our community" (Sergiovanni, 1994, p.103) by talking, sharing, and reflecting on our teaching experiences. Through this reflection and knowledge building, we will be able to enhance and improve our teaching, a benefit for both the teacher and the students we teach. A research study participant confirmed my observations of the importance of reflection by the following comment, "When we sit down and talk about doing a project like this, that is the reflection part. I don't think we do enough reflecting. All schools would benefit from these projects."

As Sergiovanni (1994) tells us, "Having the courage to take the first step toward collective practice can be richly rewarding" (p.149). One teacher acknowledged the benefits of working together by, "In a small school where there is only one teacher, you tend to feel isolated, this way you get a teacher's support." As this study revealed, a collaborative team that has developed trust, mutual respect, and an open communication with each other provides many opportunities for teacher feedback and support. A teacher confirmed this by saying, "If you sensed you were going in the wrong direction, everyone was there to help provide you with clarification." All the participants including me found this collaborative experience to be very rewarding. These experiences not only strengthened the collaboration that was already in place but has become the basis for further growth and collaboration as we committed ourselves to more projects in the future. This is all evidence of a community of practice emerging and developing for this particular context.

Benefits to Student Learning

Lance et.al. (1999) state that the collaboration of teacher-librarians and classroom teachers in developing and teaching instructional units also affects student achievement. Through the two projects implemented in this study, students were successful in acquiring theme-related content knowledge, cooperative and independent work habits, experience with a variety of resources, skills in problem solving, critical thinking, and the development of their information literacy.

Due to societal changes and expanding technologies, the APEF curriculum documents state the importance of teaching students information literacy skills to function and work in today's world. This is further indicated by the inclusion of information literacy outcomes for all

elementary grades in the APEF Language Arts curriculum documents. The educators in this study agreed that it was our role to teach students how to use different resources to access, interpret, and evaluate information effectively to meet their needs. The learning stations that were developed addressed many information literacy outcomes from the APEF documents. The importance of including information literacy outcomes in the projects is reflected by this teacher's statement, "This project gave me a comfortable feeling that I was covering the outcomes of information literacy and that the students are learning what they need for the next grade."

Both projects in this study produced learning stations that integrated all the core areas of the curriculum including ICT and information literacy and addressed many provincial learning outcomes. Integration of curriculum is beneficial to a student's learning by teaching many curriculum outcomes in one project, as well as providing variety and enjoyment for the student's learning. As one teacher said, "We covered all the areas of the curriculum and a lot of outcomes. We made it more interesting by having all the different stations. By having the curriculum integrated, it added to the interest level. I found the students looked forward to the changes in the stations each day, the variety of them. Students need variety and it wasn't like work to them. I never had one complaint." The interview findings and observations showed how all educators in the study were pleased to see how much learning occurred in the projects and how the students enjoyed working on the learning activities.

Another benefit for student's learning is that "with more teachers planning learning different ways, we create learning stations that address all the children's learning styles. Eventually all the children's strengths are met and they enjoy it more." When educators

collaborate to develop curriculum, students benefit by having more expertise involved in the planning, more interesting and quality resources used in the activities, and more attention to the learning styles of students. The following statement from one of my student interviews indicated how he enjoyed the variety of the activities and felt a sense of success for the knowledge he acquired from the learning stations, "It was fun and we got to do different things, build a bridge, do an experiment, go on the computer, and watch a video where I learned some things about bridges."

One teacher highlighted how our collaborative teaching of the projects modeled cooperative skills noting that when students "see 3 people collaborating together, it shows them what can be done in a group. Part of their learning in an elementary school is how do we get along in a group. If we work together, they learn what great things come out of that." In this study, students also worked in groups on the learning activities which helped to teach them how to work cooperatively and collaboratively with their classmates. In my participant observations, I observed examples of students sharing and helping each other with the learning activities.

One teacher from this study was especially enthusiastic about how this CPPT model gives more assistance to our students, "There is no down time, no delay in learning. That is one thing I noticed about this whole thing, the kids are all purposeful all the time. In this model, the students aren't sitting waiting for help. They get help right away and keep on working. I think this model is fantastic myself." This is particularly beneficial to students who may struggle with their learning.

This study has successfully shown how students can learn a wide variety of meaningful information and valuable skills when they participate in resource-based learning projects that are

collaboratively planned, developed, and implemented by their teachers and the teacher-librarian. The teacher-librarian of this study summarized these learning benefits by, "It has reconfirmed for me that it is successful when I now see it done with other classes, it is a wonderful way to learn."

Leadership Role of the Teacher-Librarian

The CSLA/ATLC's publication, *Students' Information Literacy Needs in the 21st Century: Competencies for Teacher-Librarians* lists several personal and professional competencies that a teacher-librarian of the 21st century should possess. A summary of these competencies conclude that a teacher-librarian must have the knowledge and skills to provide leadership in CPPT, resources, technology, information literacy, and the development and teaching of curriculum (CSLA/ATLC, 2003, p.79-82). These competencies indicate the valuable position, the teacher-librarian is in to demonstrate leadership, not only within their own school library program but also within the school as an entire learning community.

"The teacher-librarian should act as a school leader to guide classroom teachers on how to fully utilize the library and its resources to its capacity." This comment shows how the teachers in our CPPT team saw the teacher-librarian as a valuable leader and partner in using the CPPT process by helping them plan meaningful learning opportunities for students that included a variety of library resources and offering many ideas for activities and teaching approaches that would best suit the selected resources.

In addition, a teacher-librarian's role is to be knowledgeable of all areas of the school's curriculum and to keep abreast of new curriculum (CSLA/ATLC, 2003). With this curriculum knowledge and their experience of integrating information literacy, teacher-librarians are a tremendous help to teachers in the curriculum integration process. The teacher-librarian had a

"familiarity with the outcomes, a knowledge of how to address as many outcomes as possible in this situation, and of integrating curriculum." During the planning, development, and implementation of the study's projects, we were very fortunate to have the leadership and direction of such a knowledgeable teacher-librarian.

Research by Lance, Hamilton-Pennell, and Rodney (1999) concluded that schools which have a teacher-librarian who collaborates with teachers on information literacy projects have students with higher academic achievement. The information age and curriculum changes have resulted in the concept of information literacy becoming a major focus of the school library program. The responsibility for the teaching of information literacy skills has then rested on the teacher-librarian. The teacher-librarian is described as a "specialist in the area of resource-based learning and information literacy and this knowledge contributes to successful and meaningful learning for the students." Such comments reflect the importance of information literacy being included in student learning and the essential role the teacher-librarian has in delivering an instructional program that encourages the development of information literacy.

Limitations of Study

The limitations of this research study were as follows:

1. The research site is one small urban elementary school which may be quite different from other larger elementary schools in other geographic communities.
2. There was a small sample of participants in the study with two classes of students, two classroom teachers, a teacher- librarian, an information technology teacher, and eight students interviewed.
3. The teacher-librarian employed at the school does not have a full-time teaching allotment

for the school library. This fact will most certainly vary in other school settings.

4. This research study collected data using two resource-based learning projects only.

5. The CPPT team had the benefit of the participation of the action researcher.

Implications for Education

Teacher-Librarians as Leaders in School Improvement

Frost and Durant (2002) state that, "The more teachers are able to exercise leadership and professional judgement, the more the school develops the conditions which favour change and improvement" (p.154). By enabling a teacher-librarian to exercise a leadership role, the school will reap the benefits. Currently, Departments of Education are asking schools to develop school improvement plans and as the teacher-librarian is already a valuable leader within the school who operates within the school culture and develops a school library program for all students and teachers, it would seem only natural to include teacher-librarians on any committees for school improvement.

Teacher-Librarians as Leaders in Curriculum Implementation and Integration

The leadership role of the teacher-librarian is not just in a general sense, this role is diverse as it includes many different areas where the leadership can unfold. A part of this role is for a teacher-librarian to be knowledgeable of all core areas of the school's curriculum and of any new curriculum being implemented at the various grade levels. Therefore, a teacher-librarian could be of great assistance to our Department of Education in taking a leadership role in curriculum integration and implementation at the school level.

Teacher-Librarians as Leaders in Information Literacy

With information literacy as the primary goal of a school library and the mandate of our

provincial curriculum, the teacher-librarian is a valuable leader and partner in helping students develop their information literacy while working with teachers to achieve information literacy outcomes.

Using CPPT in Other Schools and in Different Contexts

Using the CPPT model in this study proved to be a successful and rewarding experience for all. The findings have provided a detailed description of how to use this process effectively. As the CPPT model's primary goal is that of successful collaboration, it has applicability to other contexts. The CPPT model could be used in other school contexts such as junior high or high schools whereby the teacher-librarian, teachers, and administrators could use the process to collaborate on curriculum development and integration, teaching strategies or school improvements. The CPPT model could also be used for school, committee or department meetings where a process was needed for planning collaboratively with a team. As this research study showed, every situation will encounter environmental obstacles that could deter participants from pursuing the collaboration. However, if the participants possess the social factors of mutual respect, a shared vision, proactive leadership and a belief in the value of the collaboration then these environmental obstacles can be overcome.

Implication for Administrators

Frost and Durrant (2002) state that, "The collaborative approach could be seen as essential to building trust and therefore the social capital that an organization needs not only to nourish its members but to produce results" (p.153). The administrator in this study supported and facilitated this CPPT process, an asset to the success of the collaboration. This indicates how an administrator has an important role in successful collaboration leading to many school

improvements.

Topics for Future Research

This study completed research on how to use the CPPT process in one elementary school. More research would clarify how the process works in other larger elementary schools, and junior or high schools and when other educational partners collaborate.

In addition, other areas to be explored would include the importance of teacher-librarians in curriculum development and school improvement. Teacher-librarians and teachers collaborate on many other types of curriculum projects such as the information process and literacy activities and these projects could be tracked. Research could also be conducted on a teacher-librarian's leadership on school committees designated for school improvement.

Final Thoughts

As Sergiovanni (1994) tells us, "Becoming a community of learners, by contrast, is an adventure not only in learning but an adventure in shared leadership and authentic relationships. It requires a certain equality and a certain willingness to know thyself, to be open to new ideas, and to strive to become. It is an adventure of personal development" (p.155). This research study reflected a journey of personal development and discovery for me. I gained a great deal of knowledge about the significant leadership role a teacher-librarian plays in the CPPT process, curriculum development, and school improvement. Using the CPPT process as a model for collaboration provided the participants and me with valuable opportunities to share ideas, further our personal and professional development, and build positive authentic relationships. These experiences are both beneficial to the participants and the context in which they were developed and I know we will build upon these growing relationships.

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Appendix D

Director of Instruction/Program Services
Eastern School District
P.O. Box 8600
Charlottetown, P.E.I.
C1A 8V7

September 15, 2004

Dear_____:

I am writing to seek permission from your school board to conduct a research study entitled: *Teacher-Librarians and Classroom Teachers: Partners in the Collaborative Curriculum Development Process*. I am presently a graduate student at the University of Prince Edward Island and this research study is a requirement to fulfill a Master's degree in Education. I have worked as a teacher-librarian in my proposed research site for the past eight years and therefore have already established relationships within the school and its participants. In my work as a teacher-librarian, I have discovered specific areas in the school library program that I would like to see change and improve and this research study is my avenue to do so.

This study will explore and describe the collaborative process of a teacher-librarian and classroom teachers when they develop and teach curriculum in an elementary school library. My belief is that when teacher-librarians and classroom teachers collaborate, the benefits for students include, being able to work on projects or activities that engage them in an active learning process, ones that are meaningful, and pertinent to their learning needs.

The goals of my research study are for classroom teachers, the teacher-librarian and myself to collaboratively plan, develop, and teach resource-based learning projects in the school's library. These resource-based learning projects will use an outcomes-based educational model, integrate core areas of the curriculum including information technology, and teach information literacy outcomes. These projects will be planned and developed using the APEF curriculum documents. Each project will take approximately 4 weeks to complete and will include some planning meetings with teachers.

After receiving official permission from your School Board to conduct this study, one school and the participants will be contacted for their consent. The principal of this school will receive a copy of your permission letter and an information letter describing the purpose and procedures of the study. These information letters will make it clear to the principal and the participants that their participation is completely voluntary. I would like to have two classroom teachers, an information technology teacher, eight students, and the teacher-librarian of this school as my participants in my research study. Each participant will receive a detailed information letter about the study with a consent form for them to sign. Parents of the students will also be sent an information letter with a consent form for them to sign for their child's participation. After the projects are complete, two teachers, the information technology teacher, the teacher-librarian, and

Appendix E

School Name
School Address

September 15, 2004

Dear Principal's Name:

I am writing to seek permission from you to conduct a research study within your school in the Fall of 2004. My research study is entitled, *Teacher-Librarians and Classroom Teachers: Partners in the Collaborative Curriculum Development Process*. I am presently a graduate student at the University of Prince Edward Island and this research study is a requirement to fulfill a Master's degree in Education. This study will explore and describe the collaborative process of a teacher-librarian and classroom teachers when they develop and teach curriculum in the school library. My belief is that when teacher-librarians and classroom teachers collaborate, the benefits for students include, being able to work on projects or activities that engage them in an active learning process, ones that are meaningful, and pertinent to their learning needs.

The goals of my research study are for classroom teachers, the teacher-librarian and myself to collaboratively plan, develop, and teach resource-based learning projects in the school's library. These resource-based learning projects will use an outcomes-based educational model, integrate core areas of the curriculum including information technology, and teach information literacy outcomes. These projects will be planned and developed using the APEF curriculum documents. Each project will take approximately 4 weeks to complete and will include some planning meetings with teachers.

After receiving your permission to conduct this study in your school, the participants will be contacted for their consent. I would like to have two classroom teachers, the information technology teacher, eight students, and the teacher-librarian as my participants in my research study. Each participant will receive a detailed information letter about the study with a consent form for them to sign. Parents of the students will also be sent an information letter with a consent form for them to sign for their child's participation. After the projects are complete, two teachers, the information technology teacher, the teacher-librarian and eight students will be asked to answer questions in an informal interview within the school library. They will be given this set of interview questions along with the information letters and consent forms. Although all students from the two classes will be involved in working with their teachers, the information technology teacher, the teacher-librarian, and myself on the resource-based learning projects in the library, only eight students will be chosen for the interviews.

The names of the participants and the name of the school will not be used in any data collection. It will be my responsibility to ensure the anonymity and confidentiality of my participants and the research site during this study. All the data will only be accessible to myself and my thesis advisors. This data will be destroyed upon completion of my thesis.

Appendix F

Participant Information Letter (Classroom Teachers, Teacher-Librarian, ICT Teacher)
September 20, 2004

Dear _____,

I am writing to ask for your voluntary participation in a study about how teachers and teacher-librarians can work together to develop and teach curriculum that meets students' learning needs. This study is entitled, *Teacher-Librarians and Classroom Teachers: Partners in the Collaborative Curriculum Development Process.* I am completing this study to fulfill a requirement for the degree of Master's of Education in Leadership in Learning at the University of Prince Edward Island.

I have chosen this research topic because of my professional and personal belief in the importance of teacher-librarians in education. I believe that when teacher-librarians and classroom teachers collaborate, the benefits for students are in being able to work on projects or activities that engage them in an active learning process, are meaningful, and pertinent to their learning needs. With the increasing use of technology, there is an abundance of information available to students. These changes have resulted in a need for students to develop the necessary skills to effectively deal with all this information.

If you agree to take part in this study, you will be asked to participate in three activities. You will be asked to participate in planning sessions with myself, the information technology teacher, and the teacher-librarian to develop a resource-based learning project for your students. You will then be involved in the collaborative teaching of this project with myself, the information technology teacher, the teacher-librarian, and your students for approximately 4 weeks. Upon completion of this project, you will be asked to participate in an interview where you will be asked a number of pre-set questions. These questions will be focused on your feelings and opinions of the project that was just completed. This interview will be quite informal, will be conducted within the school setting, and will not take any longer than 30 minutes of your time. With your permission, the interview may be audio-taped. After transcribing the contents of the interview, you will be asked to check the transcript for any errors or omissions, and we will then make any necessary changes. If I need further clarification on your comments, I may approach you informally for more information.

In order to protect your identity in the study, I will be assigning a pseudonym to the audio-taped interview and to any writing that results from the study. This will include all our planning sessions and my written observations of the project. My thesis advisors and I will be the only people that have access to this information. I will make every effort to maintain confidentiality within the law. However, while I will also endeavour to maintain anonymity of the teachers participating, I may not be able to guarantee it in the context of a small school.

At the conclusion of this study, all of the information collected during this study will be stored in

Appendix G
Parent Information Letter

September 20, 2004

Dear Parent,

I am conducting a research study entitled: *Teacher-Librarians and Classroom Teachers: Partners in the Collaborative Curriculum Development Process* and I am seeking permission to involve your child. As part of your child's regular classroom program, your child will be involved in a library project with his/her teacher and class in the Fall of 2004. This library project will be similar in structure to previous ones that your child may have been involved in. Upon completion of this library project, I would like to ask permission for your child to participate in a short interview with myself. This interview will take no longer than 15 minutes and be completed within the school's library. I will include the set of questions that your child will be asked in this interview along with this letter. I would also like your permission to use your child's work in an assessment of the student's learning that took place during the project.

I am a teacher-librarian who has worked at your child's school for the past eight years. I am presently a graduate student at the University of Prince Edward Island completing this research study as a requirement for my Masters degree in Education. I have enclosed a copy of the School Board's Permission Letter to conduct the study and the school's letter giving me permission to do the study in the school. Before I can work with the students, I will need parents to sign the enclosed consent for their child.

The goals of this research study are to explore how teacher-librarians and teachers can work together to develop and teach library projects that integrate all areas of the school's curriculum, include technology, and are pertinent to the student's learning needs. The library projects will also be assessed in regards to the student's learning that occurred during the projects to further determine their success. Therefore, I hope that you will give consent for your child to take part in the research project.

I want you to know that your child's participation is completely voluntary and the information supplied by your child will not be shared with anyone. Your child's name and school will not be identified in any data collected. All data will only be accessible by myself and my thesis advisors. Once the study is completed, all data will be destroyed. Your child will miss no more than 15 minutes of regular class time to participate in this study. Your child's participation or non-participation will not affect his/her standing.

If you agree to have your child participate in this study, I would also like your child to give his or her assent to take part. Since your child is below the legal age, they need your signed consent to participate, but I would also like the child to give their assent as well. I would appreciate if you would sign the enclosed consent form and return it in the sealed envelope to your child's school. I have enclosed a package of information that includes:

Appendix H
Interview Guide -Classroom Teachers, ICT Teacher, Teacher-Librarian

Role of Teacher-Librarian:

1) What would you say is the role of the teacher-librarian?
2) How was the role of the teacher-librarian important to this project?

Planning Sessions:

1) What did the teacher-librarian bring to the planning session?
2) What did the information technology teacher (classroom teacher) bring to the planning session?
3) What did you bring to the planning session?

Teaching Times:

1) What were some of the benefits of the teacher-librarian, the information technology teacher, and the classroom teacher teaching together?
2) What were some of the problems with the teacher-librarian, the information technology teacher, and the classroom teacher teaching together?

Collaborative Program Planning, Teaching and Evaluation model:

1) What are the benefits of the CPPT process?
2) What are the barriers to the CPPT process?

Student Learning:

1) What are the benefits for students when classroom teachers, the information technology teacher, and teacher-librarians collaborate?
2) What are the problems for students when classroom teachers, the information technology teacher, and teacher-librarians collaborate?

Information Literacy:

1) What has this project taught you about Information Literacy?
2) How important is Information Literacy to a student's learning?

Debriefing Questions:
1) Is there any information that you wish to add to this interview transcript?
2) Is there anything you would like to see included in this final thesis?
3) Do you have any suggestions of how I could have improved this study?

Appendix I
Interview Guide - Students

1) What was your favorite activity when you were working in the library?

2) Tell me three things that you learned while working on this library project.

3) What was different about working on this project?

4) What did you notice about your classroom teacher, the teacher-librarian, and the technology teacher working together?

5) Tell me one thing you didn't like about working in the library.

6) Tell me one thing you would like us to change about this library project.

Debriefing Question:

1) Is there any information you wish to add to this interview?

Appendix J
Planning Guide

Theme or Topic:
Grade 4- Bridges

Time Line:
4-5 weeks October 2004

Learning Outcomes:

Language Arts:
These outcomes are also identified as information literacy outcomes taken from the APEF language Arts curriculum document.

GCO: Students will be expected to select, read, and view with understanding a range of literature, information, media, and visual texts.

SCO: use pictures and illustrations, word structures, and text features (e.g. table of contents, headings, and subheadings, glossaries, index) to locate topics and obtain or verify understandings of information.

GCO: Students will be expected to use writing and other forms of representation to explore, clarify, and reflect on their thoughts, feelings, experiences and learnings and to use their imagination.

SCO: illustrate, draw, and use graphics.

GCO: Students will be expected to create texts collaboratively and independently using a wide variety of forms and audiences.

SCO: create written and media texts collaboratively and independently in different modes (expressive, transactional, poetic).

GCO: Students will be expected to use a range of strategies to develop effective writing and other ways of representing and to enhance their clarity, precision, and effectiveness.

SCO: demonstrate an understanding of many conventions of written language in final products.

SCO: correctly spell many familiar and unfamiliar commonly used words.

SCO: demonstrate an increasing understanding of punctuation, capitalization.

SCO: select, organize, and combine relevant information from two or more sources to construct and communicate meaning.

GCO: Students will be expected to interpret, select, and combine information using a variety of strategies, resources, and technologies.

SCO: answer with assistance their own questions and those of others by selecting relevant information from a variety of texts.

GCO: Students will be expected to respond critically to a range of texts, applying their understanding of language, form, and genre.

SCO: identify how conventions and characteristics of different types of print and media texts help them understand what they read and view.

Math:

These learning outcomes were taken from the P.E.I. Specific Curriculum Outcomes Framework for Grade 4 published in April 2004.

GCO A: Students will demonstrate number sense and apply number-theory concepts.

SCO-A3: model and record numbers to 99, 999.

SCO- A4: compare and order whole numbers.

GCO B: Students will demonstrate operation sense and apply operation principles and procedures in both numeric and algebraic situations.

SCO-B2: demonstrate an understanding of multiplication meanings and application.

SCO-B3: demonstrate an understanding of the various meanings of divisions.

SCO-B11: solve and create word problems involving whole number computations.

SCO- B15: mentally solve appropriate addition and subtraction computations.

GCO C: Students will explore, recognize, represent, and apply patterns and relationships, both informally and formally.

SCO-C3: use patterns to solve computational problems.

GCO D: Students will demonstrate an understanding of and apply concepts and skills associated with measurement.

SCO-D8: estimate and measure in millimetres, centimetres, decimetres, metres, and kilometres.

Social Studies:

We used the P.E.I. Specific Curriculum Outcomes Framework for Grade 4 published in April 2004.

The Social Studies outcomes in this framework are arranged in themes that pertain to a "new" Social Studies program that has not been implemented yet. Therefore, we could not use these outcomes for our Bridges project.

One of the themes in the Curriculum Outcomes Framework is called "Exploring Canada Today", so we included activities about bridges that had a Canadian component. Example: a station on the Confederation Bridge and the Hartland Bridge.

444: explore and describe symbols of Canadian Heritage.

Also GCO: Time, Continuity and Change

Students will be expected to demonstrate an understanding of the past and how it affects the present and the future.

Science:

P.E.I. Specific Curriculum Outcomes Framework for Grade 4.
Again, these curriculum outcomes are related to themes for a new program that has not been implemented yet. There is one GCO that was applicable to our project.
GCO 4: Students will be encouraged to develop attitudes that support the responsible acquisition and application of scientific and technological knowledge to the mutual benefit of self, society and the environment.
1998 APEF Science Draft-Atlantic Canada Science Curriculum
From this document, these outcomes were appropriate for our project.
Inquiry: perform experiments, record and interpret data, and draw conclusions.
Collaboration: work collaboratively while exploring and investigating.

Health:
There are no GCOs or SCOs in the APEF documents for Health as of yet. We noticed that the Grade 4 Health program includes concepts on safety. So we included a station about safety on the bridge. Students learn about how bridge workers try to ensure a safe work environment. They also learn how Strait Crossing works to make the bridge safe for travelers and for the environment.
Art:
There are no GCOs or SCOs in the APEF documents for Art as of yet.

Learning Resources:
Books
Video
Science Materials
Websites

Learning Activities:
Station # 1 Safety on the Confederation Bridge (Health)
Students will read information on how the company tried to keep their workers safe while they were building the bridge. They will also read about how Strait Crossing keeps travelers safe on the bridge and helps to protect the environment. Students will answer questions about this information and label and color a diagram on safety.
Station # 2 Science Experiment- Bridge Materials (Science)
Students use various materials to conduct an experiment that demonstrates how steel can easily rust from salt, sand, and water. Students will see how steel that is protected may not rust as fast. Students will use the scientific process and complete a sheet with states their hypothesis, materials they used, steps of the experiment, and the experiment's conclusion.
Station # 3 Research Station (Language Arts, Information Literacy)
Students will use three different nonfiction books to answer questions about six types of bridges. They will have to use the index and table of contents of these books to access their information. They will have to decide which information best answers the questions. They will also draw sketches of the six types of bridges.
Station # 4 Information Technology (Technology and Social Studies)

Students will use one website to interactively choose what type of bridge would be located in a certain location in a community. Students will use another website to learn information about the Hartland Bridge. Students will read and answer questions about this Canadian bridge.

Station # 5 Math

Students will use a blueprint drawing of a bridge to figure out measuremnts of this bridge. They will measure this blueprint in millimetres and have to convert this measurement to metres for an actual measurement. In this station, students will also answer some problem solving questions related to bridges that utilize their math skills.

Station # 6 Viewing a Video (Language Arts)

Students will view a video called, Big Cable Bridges, and then answer questions about the video. The video is about 35 minutes long and gives information on how bridges are built.

Station # 7 Building a Bridge (Art)

Students will use any materials they like to construct their own bridge. They will have ideas from what they have previously learned about bridges.

Station # 8 Skills (Language Arts)

Students will complete different activities that incorporate many writing and information skills. They will use a dictionary to look up and record meanings of words related to bridges. They will write four of these words in a sentence of their own. They will correct a paragraph that contains mistakes in capitals, spelling, commas, apostrophes, and periods. They will also have to find nouns and verbs in this paragraph.

Station # 9 The Confederation Bridge (Social Studies and Language Arts)

Students will read information about the history of how the Confederation Bridge came to be. They will learn about the plebiscite of 1988 where Islanders voted whether or not they wanted the bridge to be built. Then students will decide what they would have voted if they were there in 1988 and have to write three reasons for their vote. Students will also read a picture book about building the Confederation Bridge that uses lots of interesting vocabulary. After reading this book, students will write a cinquain poem using words from the story.

Evaluating the Learning: Assessment

We developed a rubric that will assess their learning using a scale of strong, good, adequate, and poor responses. The rubric included an assessment of the following skills: information skills (read, comprehend, and answer questions), grammar, punctuation, problem solving, technology, and viewing. The students were shown this rubric before the project started and given a detailed explanation on how they will be assessed. As well, students will have the opportunity to assess their own learning using this rubric.

Appendix K
Planning Guide

Theme or Topic:
Grade 2 - Circles and Cycles

Time Line:
4- 5 weeks, November 2004

Learning Outcomes:
These outcomes are taken from the Primary and Elementary Specific Curriculum Outcomes Framework, Department of Education 2003.

Language Arts:
GCO 1: Also Information Literacy Outcomes
Students will speak and listen to explore, clarify, extend, and reflect on their thoughts, ideas, feelings, and experiences.
SCO 1.1: express thoughts and feelings and describe experiences.
SCO 1.2: ask and respond to questions to clarify information or gather further information.
GCO 2: Also Information Literacy Outcomes
Students will be able to communicate information and ideas effectively and clearly, and to respond personally and critically.
SCO 2.3: respond to and give instructions or directions that include two or three components.
SCO 2.4: engage in and respond to a variety of oral presentations and other texts.
GCO 3: Students will interact with sensitivity and respect, considering the situation, audience and purpose. This specific GCO is also an Information Literacy Outcome.
SCO 3.1: demonstrate a growing awareness of social conventions such as turn-taking and politeness in conversation and co-operative play.
GCO 4: Also Information Literacy Outcomes
Students will be expected to select, read, and view with understanding a range of literature, information, media, and visual arts.
Early
SCO 4.1: regard reading/viewing as sources of interest, enjoyment, and information.
SCO 4.2: expand their understanding of concepts of print.
SCO 4.3 select independently, and with teacher assistance, texts appropriate to their interests and learning needs.
SCO 4.4: use some features of written text to determine content, locate topics, and obtain information.
SCO 4.5: use a combination of cues (semantic, syntactic, graphophonic and pragmatic) to sample, predict, and monitor/selfcorrect.
SCO 4.6: use a variety of strategies to create meaning.
Transitional
SCO 4.3: use pictorial, typographical, and organizational features of written text to determine content, locate topics, and obtain information.

SCO 4.4: use and integrate with support the various cueing systems (pragmatic, semantic, syntactic, and graphophonic) and a range of strategies to construct meaning.

GCO 5: Also Information Literacy Outcomes
Students will be expected to interpret, select, and combine information using a variety of strategies, resources, and technologies.
SCO 5.1: locate appropriate information with assistance (classroom, library, home, community), interact with information, use a range of print and non-print materials to meet their needs, use basic reference materials and a database of electronic search.
GCO 7: Also Information Literacy Outcomes
Students will be expected to respond critically to a range of texts, applying their knowledge of language, form and genre.
SCO 7.1: use their experiences with a range of texts to identify some different types of print and media texts, recognizing some of their language conventions and text characteristics.
GCO 8: Also Information Literacy Outcomes
Students will be expected to use writing and other forms of representation to explore, clarify, and reflect on their thoughts, feelings, experiences, and learnings and to use information.
SCO 8.1: use writing and other forms of representing for a variety of functions.
GCO 9: Also Information Literacy Outcomes
Students will be expected to create texts collaboratively and independently, using a variety of forms for a range of audiences.
SCO 9.1: use a variety of familiar text forms and other media (messages, letters, lists, recounts, stories, poems, records of observations, role plays, Reader's Theatre)
GCO 10: Also Information Literacy Outcomes
Students will be expected to use a range of strategies to develop effective writing and media products to enhance their clarity, precision, and effectiveness.
SCO 10.1: develop strategies for prewriting, drafting, revising, editing/proofreading, and presenting/publishing.
SCO 10.2: use some conventions of written language.
SCO 10.3: demonstrate engagement with the creation of pieces of writing and other representations.
SCO 10.4: with assistance, experiment with technology in writing and other forms of representing
SCO 10.5: select, organize, and combine, with assistance, relevant information to construct and communicate meaning.

Math:
GCO A: Students will demonstrate number sense and apply number theory concepts.
SCO A1: order numbers and use ordinal language.
SCO A 4: identify simple fractions using models.
SCO A 5: describe numbers in a variety of ways.
GCO F: Students will solve problems involving the collection, display, and analysis of data.
SCO F 2: create and interpret pictographs and symbolic bar graphs.
GCO G: Students will represent and solve problems involving uncertainty.

SCO G 1: demonstrate an understanding that some events are more likely than others.
SCO G 2: demonstrate an understanding that probability predictions need not always come true.

Health:
GCO B: Students should be able to select and apply behaviours that promote a healthy lifestyle.
SCO B 1: demonstrate an understanding that individuals make choices about how to express feelings.
SCO B 4: demonstrate listening skills.
GCO C: Students should be able to develop strategies to enhance relationships that encourage participation in the development of a healthy community.
SCO C 1: demonstrate an understanding of the importance of the importance of co-operation within the family.
SCO C 2: explain how changes can occur within a family (e.g. birth, death, new baby...)
GCO E: Students should have a knowledge of principles and strategies that would enable them to develop a positive self-image.
SCO E 1: demonstrate an understanding of their uniqueness and that they are different from others.

Science:
GCO 1: Students will develop an understanding of the nature of science and technology, and of the social and environmental contexts of science and technology.
SCO 101-7: observe and describe changes in the appearance and activity of an organism as it goes through its life cycle.
SCO 102-6: identify constant and changing traits in organisms as they grow and develop.
GCO 2: Students will develop the skills required for scientific and technological inquiry, for solving problems, for communicating scientific ideas and results, for working collaboratively, and for making informed decisions.
SCO 201-5: record relevant observations of changes in the appearance and activity of an organism as it goes through its life cycle, using written language, pictures, and/or charts.
SCO 201-7: identify and use a variety of sources of science information and ideas to find out about the life cycles of other organisms.
SCO 203-2: recognize the stages of development of the organism, using applicable terminology and language.

Social Studies: Draft only.
Unit One: People
SCO 2.1.1: describe changes in their lives and explain their reactions to these changes.

Art:
GCO 2: Students will be expected to create and/or present, collaboratively and independently, expressive products in the arts for a range of audiences and purposes.
SCO 2.1.2: use a combination of visual elements and principles of art and design in art-making.
SCO 2.1.4: express through art-making feelings, ideas, and understanding.

SCO 2.2.3: work independently and with others in creative art-making.
SCO 2.4.1: demonstrate respect for their own work and that of others.
SCO 2.4.2: recognize how art is a human activity that can emerge from personal experiences.
SCO 2.5.4: explore that there is a relationship between the natural and built environments.
SCO 2.6.2: discuss how people can respond emotionally to what they see.
SCO 2.7.1: use appropriate safety procedures when art-making.
SCO 2.7.2: to choose and make decisions as to what tools and materials they could use in their art-making.

Learning Resources:
Books (Moving House, The Butterfly House, The Very Hungry Caterpillar, Life cycle Non-Fiction Books, Feelings books)
Cassettes
Websites
Appleworks Spreadsheet program
Fraction circles (Math manipulatives)
Circle of Friends cut-outs

Learning Activities:
Station #1 Math -Circle Graphs:

Students use "fraction circle" math manipulatives to complete questions about fractions. Students also complete problem solving questions and questions relating to probability.

Station # 2 Library Skills:

Students use the Library computer program called "Microcat" to search for books on life cycles. Students copy the titles, call numbers, and authors of four of these books and then locate these books on the library shelves. Using these four books on life cycles, the students complete questions relating to using an index and a glossary. Students then complete an activity sheet on putting call numbers of Non-fiction books in the correct order of how they would be shelved in a library.

Station # 3 Circle of Friends:

Students read short books on feelings. They then cut out a circle of friends pattern and glue it onto construction paper. Students draw and color faces that show people's various feelings. Students cut out these faces and glue them onto their circle of friends. Students also complete a sheet of sentences that contain feeling words. (e.g. I feel happy when...)

Station # 4 Water Cycle:

Students use an interactive website to complete a diagram and answer questions about the water cycle. These questions involve the students learning vocabulary about the water cycle.

Station # 5 Moving House:

Students listen to a cassette of a book called Moving House and follow along in the book. Students learn about how a family deals with the change of moving to a new house. Students

complete questions about the story. Students then make a timeline of the story by cutting out and pasting pictures from the story on a timeline sheet. Last, students complete their own timeline of events from their lives by cutting out sentences of such events and pasting them onto an activity timeline sheet.

Station #6 Chickens Spreadsheet:

Students use the Appleworks spreadsheet to complete a story about chickens. Students must locate the appropriate cell for each word or phrase from the story and type them into this cell. When all cells are complete, the students will discover a story to read about chickens. They will then answer questions about this story.

Station # 7 The Very Hungry Caterpillar:

Students listen to the story, The Very Hungry Caterpillar, on a cassette and follow along in the book. Using pictures and words from the story, students cut and paste them into a calendar to show the life cycle of the caterpillar. Students then decorate the calendar by drawing and coloring a picture about butterflies.

Station # 8 Butterfly Cinquain Poem:

Students use words their teacher provided and write a cinquain poem about butterflies. Students must write a rough copy, edit their work, and complete a good copy of the poem. Then the students make a butterfly using a pattern.

Station # 9 Art:

In the art room, students make a butterfly house using paint, colored paper, screen, and a box. They were read a story about making a butterfly house before they started this station. This book gave them many ideas for the construction of their butterfly house.

Appendix L
Bridges Project Assessment

Student Name :_____

Using information skills to read, comprehend, and answer questions:

4	Strong	Student's answer contains all of the expected points.
3	Good	Student's answer contains most of the expected points.
2	Adequate	Student's answer contains some of the points. The student may be able to provide a more complete answer but only with guidance or prompts.
1	Poor	Student's answer contains very few or none of the expected points. Even with guidance or prompting, the student demonstrates difficulty in completing the questions.

Grammar and Punctuation:

4	Strong	Student's answer contains all the capitals, periods, commas, and the use of apostrophe where appropriate.
3	Good	Student's answer contains most of the capitals, periods, commas, and the use of apostrophe where appropriate.
2	Adequate	Student's answer contains some of the capitals, periods, commas, and the use of apostrophe where appropriate. With prompting or guidance, the student may be able to use the appropriate grammar and punctuation in their answers.
1	Poor	Student's answer contains very few or none of the capitals, periods, commas, and the use of apostrophe where appropriate. Even with guidance or prompting, the student demonstrates difficulty in using appropriate grammar and punctuation in their answers.

Problem Solving:

4	Strong	Without guidance, the student was able to follow directions and create strategies to solve problems.
3	Good	With some guidance, the student was able to follow directions and create strategies to solve problems.
2	Adequate	With constant guidance, the student was able to follow directions and create strategies to solve problems.

1	Poor	The student experienced extreme difficulty, showed no understanding of concepts and was unable to complete the problems.

Technology Skills:

4	Strong	The student demonstrated a proficient use of technologies by using websites and retrieving information.
3	Good	With little guidance, the student demonstrated a good use of technologies by using websites and retrieving information.
2	Adequate	With constant guidance, the student demonstrated adequate use of technologies by using websites and retrieving information.
1	Poor	Only with constant guidance did the student complete their questions using websites to retrieve information.

Viewing Skills:

4	Strong	After viewing a video, the student's answers to questions contained all of the expected points.
3	Good	After viewing a video, the student's answers to questions contained most of the expected points.
2	Adequate	After viewing a video, the student's answer to questions contained some of the points. The student may be able to provide a more complete answer but only with guidance or prompts.
1	Poor	After viewing the video, the student's answer to questions contained very few or none of the expected points. Even with guidance or prompting, the student demonstrates difficulty in completing the questions.

Appendix M
Research Station # 3 Types of Bridges

You will be using 3 different books to complete this station. Answer the following questions on a separate sheet of paper.

Use the book with the title, Superstructures, Bridges by Chris Oxlade, the Table of Contents in this book will be very helpful.
1) Describe the **beam bridge, arch bridge and the suspension bridge**.

Use the book with the title, How We Build Bridges by Neil Ardley, the index in this book will be very helpful.
2) What is the purpose of the **beam bridge, arch bridge and the suspension bridge**. (Where might it be used?)

Now, using the book with the title, Bridges by Etta Kaner, answer the same questions as above. The index of this book will be very helpful.

1) Describe the **bascule bridge, the vertical-lift bridge and the swing bridge**.

2) What is the purpose of the **bascule bridge, the vertical-lift bridge and the swing bridge**? (Where might it be used?)

After you have completed all these questions, please draw a small sketch of each of the six types of bridges that you learned about and label them.

Appendix N
Library Skills Station Gr. 2

1) Go to the library computer and use the computer program called Microcat.

2) Press the enter key to choose **Search**.

3) Type in the words **life cycles** in the search space.

4) How many titles does it say the library has?

_____

5) Find 4 of the first books that the computer shows you on the library shelves.

6) Print all 4 titles of the books, the author's names, and the call numbers below.

_____

_____

_____

_____

7) Using these 4 books, find one book that has an **index**. What is the title of that book? Go to the back of the book and find the index.

8) Using the **index**, look for the word, **honey.**
What page number comes after this word?_____

9) Go to that page and look for one sentence with the word honey in it.
Print that sentence below.

_____

10) Now find a book that has a **glossary**. The glossary is at the back of the book.

11) Print the first word in the glossary and the meaning of that word.

_____