Into the Center of the Curriculum

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[1] This article is chapter one in: Williams, Robin T. and David V. Loertscher. *In Command: Children and Teens Build Their Own Information Spaces and Manage Themselves Within Those Spaces*. Hi Willow Research & Publishing, 2007. Available from www.lmcsource.com. This chapter will also appear in the December issue of *Teacher Librarian*, 2007.

Introduction

A number of events precipitated the theme and organization of this research retreat some 20 years after the first one held in Park City, Utah in 1987. A number of organizations have taken a look at their professional standards and have issued new editions. These include the American Association of School Librarians, The International Society for Technology in Education with their NETS standards, and 21st Century Learning – all have issued documents in 2007.

It seemed appropriate to do two things at this retreat:

1. Consider what we know about school library media programs as they exist in the present.
2. Create a new vision for the school library for the 21st century.

The papers in this collection are in two sections. The first represents papers and research about current library media programs. The second section is a group of papers that hint at the future with possible directions. At the conference, participants will be asked to formulate a new vision and produce some substantive methods for achieving those visions. At this writing, we can only guess what form the findings will take. It is hoped that all the participants will create some sort of response, written document, or institute some practice leading to real progress. The urgency of reinvention weighs on this profession since the first real wave of school librarieans were hired less than a half century ago and are now retiring. Who will replace them? And with what vision? It is certain, that the vision of the 1960s when this intervention in American education cannot lead us into the future.

As with previous retreat proceedings, we ask the writers of papers to format their papers as they wish them to appear. This accounts for some differences in formatting.

Each paper has received the scrutiny of a peer review for quality and appropriateness. The authors are congratulated for meeting high standards.

The "Are Two Heads Better Than One Action Research Project" at www.davidvl.org

David V. Loertscher
Professor, School of Library and Information Science
San Jose State University

Background

As the Lance studies began to demonstrate the link between school library media programs and achievement, the news spread like wildfire throughout the school library community because it was a refreshing piece of good news to be broacast far and wide. And, school library media specialists did just that. The broadcast the news. In some quarters, the link was believed. In others, it was received by local administrators as good news for Alaska or Pennsylvania, or New Mexico...but in our state, in our schools, did the findings really apply.

Some principals who noticed a very traditional program in their school libraries where the facility was ignored by students and teachers had real reason to question whether the investment in their school library was producing anything of value. Reports from many of my students at San Jose State University indicated that a sizeable amount of doubt and obvious lack of enthusiasm demonstrated that something more thank state and national research evidence was needed.

But how should that evidence be collected and disseminated? Frankly, in my travels, school librarians were quick to furnish data about the inputs to their programs including budgets, size of LMC staff, size of facilities and conditions in general. They also could supply data from the emerging availability of their automated systems, but few other data or research about the impact of their efforts to make a difference.

For many years, I have felt, written about, and "preached" that collaborative planning between the library media specialist and the teacher was at the core of making a differnce in achievement. It has been a hard sell. However, the reports of those who took this advice from me and did major experimentation in their own programs was overwhelmingly positive. In other words, when it did happen, it worked.

During the years of the Library Power Project funded by the Dewitt Wallace Reader's Digest fund, I personally traveled to every library power site working to develop collaboration and the reporting of that collaborative experience as a part of the evidence that the national evaluationon team, of which I was a part, was looking for. That large-scale test demonstrated that major headway could be made in the transformation of library media programs from bystanders into the heart of the curriculum of the school.

The major problem was, that Library Power lasted only three years. It was not long enough to get collaboration institutionalized in all the districtus in all the participating schools. However, one can interview those who participated in Library Power and still see remnants of the collaborative spirit that developed at that time.

One of the major effects of NCLB has been to lock down the classroom even more than it has been in the past. Teachers have been told to shut their doors, get control, and teach a lock-step curriculum to guarantee that scores would rise. Many library media speciaiists across the country report that teachers no no longer have time for "library." Such reports seem to say: We have to do what is central and the library is not that central in our teaching. The idea that the library might take away from the central elements of teaching and learning anger no only me but every colleague I talk with.

It is quite certain, that the bird unit practices so common in libraries around the country were and still are zeros when contributing to learning, so I have been banning bird uiits across this country and even internationally every time I could snare an opportunity. If a teacher does only bird units in the LMC, then it is wise to cancel library visits because they are not contributing. That may be a bitter pill, but one that must be faced.

Another strong argument has been that: If I go to the library and we do have a great experience, it talkes too much time and as a teacher I must cover a prescribed amount of content. So, while I love you, librarian, and we have a great time together, I just have to retreat to my classroom and stuff stuff in these kid's heads. No matter that the scores in this country are not rising at the expected rate. The scores would rise if these teachers would put more pressure on skill, drill, and kill. One wonders how long this terrible phase in American education will last.

I reply to such nonsensical arguments by saying: You mean, that given a unit of instruction that can only last from Monday to Friday is better off in the classroom alone with one adult than if two adults were working together for that same amount of time in the library? You have to be kidding! That makes no sense. You mean that you take kids who can't understand the textbook and are bored with the lecture from that environment to the information-rich environment of the library and things are not going to get better? Well, you are right if what happens in the library is a bird unit – a wholesale of copying of facts from one place to the other followed by deadly PowerPoints.

The argument has been: Well, I would rather have them come to the library and do bird units than not come at all. I reply, I'd rather they did not come at all. There is just too much pressure to achieve and the library just cannot be party to activities that retard learning. Those is fightin' words to many.

So, I am now giving the following advice:

1. Cancel all bird units from the library.
2. Ask the teacher who wants to come: How much time do we have for this topic?
3. Then, within that time frame, as two adults, make each library experience a fantastic learning experience.
4. And, collect the evidence that kids learned more in that experience that could possibly have learned had they stayed bac in the classroom.

I am most interested in evidence coming to the principal in such a stream that at school board meetings, at principals meetings, when talking with parents, when writing in the literature that every principal could say: The best learning in the school happens in the library!

Is that unreasonable? Is this just a pipe dream that I, along with other ivory tower school library professors have dreamed up and just used as a stick to beat people over the head and make them feel guilty?

Well, there is my rant. There are a thousand excuses why the best learing does not and cannot happen. I try; I try to ignore most of them and say: Why not?

Well, Loertscher, if you expect people to be able to demonstrate that learning in the library with two adults at the helm is better than classroom only learning, then you had better have a plan to show it. Don't just tell us; show us.

Thus was born the action research project, Are Two Heads Better Than One?

During the Fall semester of 2006, I was granted a faculty research grant from San Jose State University to carry out this action research plan. So, in the spring semester of 2007 I had a course release to do so.

I designed the action research project and then tried to beg, plead, and encourage folks to participate. It has not been easy. Many of our professionals in the field are just not accustomed to examining learning at the learner level. They know how many books they circulatate. They don't know how many are read. They know how many information literacy lessons they teach, but thoey don't know how much the kids learn. Some express the idea that they are too busy teaching the next class and have no time to follow up on the previous one. My question is: If I don't know how effective I am, why do I keep doing what I am doing? The geranium on the window sill just died, but the teacher went right on. Professor Binns of Harry Potter fame died one day, but he just kept on lecturing. Why do I remain a prisoner of what I may suspect is incompetence? Those are tough questions for any of us to face.

Enough of that.

Methodology

In the action research, I have tried to make it as simple and as time efficient as possible. Here is the method.

1. Before the collaboration, the teacher takes out a class list and predicts how each student would usually do on a unit in the classroom when they are alone. Does Juan or Maria or Girard usually excel, meet, or exceed unit objectives?
2. The teacher puts that list away.
3. The collaborative unit happens. Both the teacher and the library media specialist team teach the unit in the library. They plan the unit together; they teach the unit together; they assess the learning together.
4. The teacher pulls out the prediction sheet and sits down with the library media specialist to fae the music. How did Juan, Maria, and Girard actually do? Who did better? Who did worse? Why? What could we do better next time to get a better result?

Is that too hard? Does that expect too much? Could a principal expect a report about this? What would the likely results be? How many units like this could each library media specialist be expected to report? I would be happy if they reported one such experience and build from there. And if we don't, I fear for our role, our jobs, and the existence of school libraries in this nation. It is as simple as that. Simplistic? Well, the trend in hiring clerks instead of professionals is ringing very loudly across this land.

Results

Participants were and are encouraged to write a few paragraphs about their action research projects. They can report them to David Leortscher at reader.david@gmail.com or, they can actually post them on theaction research wiki at davidvl.org.

A few reports are "ready to read." Others have been promised.

I am reprinting several here as examples.

Our Elementary School Research Project Together

Sally Daniels
Currently working at Cicero-North Syracuse High School
Formerly at Cicero Elementary School Cicero, New York
(last year when this took place)

Reprinted from: Action Research on www.avidvl.org
(ed. Note: This was a longer than expected report but welcome)

Each year my school district requires teachers to identify and work on specific professional development goals. During the 2005-2006 school year I identified assessment as the area I wanted to work on. For several years I had been wondering if the students were really getting what I was teaching and I came to realize that assessment was the piecethat I was missing in most of my lessons.

I spent a great deal of time reading and learning about assessment during the year, so when it came time to do the 4th grade research papers in the spring I was ready. I had worked closely with one 4th grade teacher in the past and decided to pilot my assessment piece with her class. We got together to schedule the lessons in the library and I asked her if she would be interested in including more higher level thinking skills in the assignment and adding some assessment pieces. She wanted students to research a famous New York State person. We developed an assignment that centered on the essential question "What was the person"s contribution to his/her community, state, country, or world." Students had to tell how experiences in their person's childhood, education and work impacted their person's contribution.

I used two tools to assess what the students were learning during this research assignment. One was a rubric that we developed based on an idea from Violet Harada and Joan Yoshina's book Librarians and Teachers as Partners: Assessing Learning. Students knew that I was going to grade their notes on four criteria: Accurate and complete; related to my topic; meaningful to the student and well organized. The second assessment was a three part reflection sheet that I found on the CISSL website: http://www.scils.rutgers.edu/~tgera/new_cissl/research/imls/

This reflection sheet was given to students at the beginning of the research, during the middle of the research, and at the end of the research.

After an introduction to the project and the research process students were given the first sheet to fill out. The questions asked students to tell what they already knew about their topic, how interested they were in the topic, what they find easy about doing research and what they find hard about doing research. Most students knew something about the person they were researching and were interested in them. Students thought that reading and finding information was easy and that taking notes and understanding the questions was difficult.

The second reflection sheet asked the same questions in relation to what they knew now. Most still felt that finding and reading information was easy but it was hard to figure out good information to put down in their notes. I started noticing some higher level thinking with some of their responses.

The third reflection sheet was given after completing the research paper and asked them to answer the same questions again by thinking back on their research. It also included a final question: What did you learn in doing this research project? Please list as many things as you like. Some of the responses were:

- How to take notes

- I learned how to correctly do a research report
- I learned how to research things, how to look up things, and how to have an organized research.
- The process of making a research report is harder than it seems, and it takes a long time to make.
- I learned how to do research so it wasn't so hard.

When I finished reading their reports and marking their notes I called the teacher and asked if I could come right down and speak to her class. They looked at me kind of nervously as I walked to the front of the class with the packet of their papers. I began by asking how they thought they did on their papers, did they learn about their New York State person, did they learn the steps of the research process, and how do they feel about their final report. Then I told them they should feel very proud of themselves and what they accomplished. We asked you to do a very hard assignment and every one of you succeeded. In fact, these are the best 4th grade research papers I have ever seen. There is not one plagiarized word in any of them. They include the facts about your person as well as your own ideas about their contribution to society and New York State history. Outstanding job!

Although I didn't keep track of the students' grades I knew that every student had succeeded in doing a difficult assignment without plagiarizing and I know they learned about how to do research. In contrast, another 4th grade class also completed their research papers that week. Other than scheduling the class for lessons on resources and how to do a bibliography I did not collaborate with this teacher. I did get a chance to read and review their finished papers and I was very disappointed in them. Most had many passages of words taken directly from the encyclopedia or the Internet. Yes they cited the sources they used, but did they really learn anything about research or their topic? I think not!

Are two heads better than one? Absolutely! Does full collaboration lead to student achievement? This evidence tells me it does.

Assessment can make a huge difference in what we do. I no longer wonder if what I am doing is making a difference. I know it does!

If you want to learn more about this research lesson look for a longer article about it in an upcoming edition of Knowledge Quest.

Of this project, the teacher said:

"Sally and I had simple goals for our 2006 NY State biography research. They were efficiency and quality. We divided the teaching tasks accordingly. Through Sally's teaching expertise, students learned numerous relevant skills along with benefiting from her follow-through. Being realistic with our goals for fourth graders, students researched print and on-line sources with both our assistance. I shared the tasks of guiding students with note taking and writing process skills to the final draft. The process was a valuable one for me. Sally offered solid feedback, positive suggestions, while boosting my confidence level along the way." Anne-Marie O'Connor Cicero Elementary School Cicero, N.Y."

Notre Dame High School, Salinas, California

(reprinted from: Action Research tab on www.davidvl.org)

Unit done with 9th-11th graders.

To begin the unit, the teacher and I gave a general overview of each of the four topics: Electronic Privacy, Internet Bullying, Social Networking Sites, and Internet Safety-Protecting Yourself and Your Computer. Students were put in groups and each was assigned one of the topics. Each group had a scenario that included an ethical problem related to their topic. Using pre-selected websites and online resources, each group researched their topic and used their research to look for solutions to their problem. After coming up with an initial solution as a group, students swapped groups and presented their problem and solutions to member of other groups. The other groups added their own possible solutions and viewpoints. Students from the original group used these new opinions and insights to possibly modify their original solution. The original groups then re-formed and created a new and final solution, combining their original idea with those of the other groups. Each group then presented their final solution to the class.

The teacher and I found that students performed better than was expected. The class is comprised of many low-performing students who often have trouble staying on task and concentrating. For some reason, the format of switching groups and talking with member of other groups really worked well. Many "trouble" students who usually have behavior problems were able to stay on task. In fact, when I mentioned to one group, "Did you guys realize you have been staying on-task this whole hour?" not even the students could hardly believe they were able to do it.

There were also several students who were high-performing students. Most of these students naturally acted as the leader in their groups. I saw many of them coach their lower-performing groupmates towards ideas and also play devil"s advocate, pointing out problems or weaknesses in a suggested solution. The format of this assignment really seemed to lend itself to groups of mixed-level abilities.

Reflections and Next Steps

If it were possible to collect 200-300 of such reports, some short, some longer, we woud be able to see patterns across schools and begin to build solid theories and questions for both scientific and qualitative research. Perhaps those who self report only want to be known as successful so do not report their failures, although there is one major challenge reported on the wiki. Even in the absence of negative reports, be begin to study higher-level learning as it plays out when two heads really collaborate.

If only:

1. Many such reports were available.
2. We could start a major conversation on listservs about the challenges and opportunities of learning rather than: Should we put special stickers on AR books?
3. Professors had a wealth of such examples to draw upon.
4. We could do some major research for the educational community and government policy makers on this topic.
5. Principals could read 20 or 30 of such reports from their own school librarian.

I can only dream and challenge all of us to participate to answer the question: Are two heads really better than one?

Action Research Projects
Westport Public Schools, Westport, CT

"Are Two Heads Better Than One?"

... a challenge from David Loertscher

Lynne Shain,
Assistant Superintendent for Curriculum & Professional Development
Bill Derry
Coordinator of Information and Technology Literacy
Kelly Harrison & Aimee Anctil
3red Grade Teacher and Library Media Specialist
Karen Clark and Rita Hennessey
7th Grade teacher and Library Media Specialist
Robin Stiles
High School Library Media Specialist

How does an already high performing district engage in continuous improvement, with a particular focus on assuring that our students have the 21st Century skills they need in information, media, and technological literacy?

With this essential question, the Westport, CT Public Schools have been involved in a quest to provide our students with learning activities through which they gain these skills. A catalyst for this work has been David Loertscher's leadership both in coaching three action research projects in our schools this year and in planning and leading an ITL (Information and Technology Literacy) Summer Institute for our educators. Our teachers and administrators are energized by the possibilities of continuing related Action Research projects begun during the last school year and in starting new projects as well. This kind of "authentic" work will promote collaboration and deeper understanding for our students and educators.

Lynne Shain
Assistant Superintendent for Curriculum & Professional Development

Background

Action Research Projects/ Westport Public Schools, Westport, CT 06880
Bill Derry, Coordinator of Information and Technology Literacy

Action Research, Educational Action Research, Teacher as Researcher – different names with similar concepts -- "hot" topics presented at conferences for at least the last 10 years! It seemed so clear that this kind of "authentic" work would promote collaboration and deeper understanding, if not with the students, then definitely with the participating staff. In the 2005-06 school year I finally collaborated on a small action research project to determine if students would know more about information literacy the more their teachers collaborated with the media specialist during the school year. With a pre-test and post-test, the data strongly suggested that students do learn information and technology literacy skills better when their classroom teacher collaborates with the media specialist. The activity convinced me that action research has the potential to bestow many benefits, including, but not limited to: increased collaboration with staff, an elevated importance of the learning activities related to the action research, and students' increased use and understanding of information and technology skills. At the end of that year I left my job as elementary media specialist to become the district's coordinator of information and technology literacy. I wondered if other library media specialists were interested in conducting action research projects, and if so, how could we get started?

That summer, a chance encounter with David Loertscher at the 2006 National Educational Computing Conference in San Diego provided the answer to that question. We were reminiscing about our 1993-1996 Library Power experiences in New Haven, CT and talking about his book, Ban Those Bird Units when he brought up his plan to nationally promote action research projects. He had set up a wiki which defined an action research project focused on the question, "Are two heads better than one?" He wanted to know if data could be collected to demonstrate that students would achieve at a higher level if their teacher and library media specialist planned and taught collaboratively rather than the teacher working alone. He said that if I could find three library media specialists (one elementary, one middle, and one high school) willing to take on the project, he would serve as a mentor and coach in the process.

Three media specialists rose to the occasion. During our first staff meeting in August of 2006 we held a Skype conference call with David and the three library media specialists. Over twenty others, technology teachers, administrators and the other media specialists, listened to the planning process,.. The conference call outlined the steps in the action research project, discussed the "value added" roles of the media specialist, introduced the idea of a "Big Think" or getting students to think at a higher level, and described methods for documentation. After this call each media specialist found a classroom teacher with which to collaborate, and they undertook an action research project. The results of these projects is synthesized in the following brief reports from each media specialist, and can be read in more detail on David Loertscher's Action Research website (http://www.seedwiki.com/wiki/lmc_action_research). Additionally an Information Studies graduate student participating in an Internship from Fairfield University. Michael McNiff, assisted with documenting the project.

As a "first step" into the action research process we have gained much information, and I am hopeful that more action research will be conducted this year. The curriculum review committee for Social Studies recently recommended to the Board of Education that a year long action research project be conducted. It is no accident that this comes on the tails of our three successful action research projects. After sharing our action research projects with all schools in the district and at the AASL conference in October, it is hoped that more action research projects will be conducted by collaborating media specialists and classroom teachers this school year. If so, we will add these projects to David Loertscher's Action Research page.

Kings Highway Elementary School, Westport, CT
Action Research 2006-2007:
"Are two heads better than one?"

Collaborating Teachers: Kelly Harrison (3rd Grade) & Aimee Anctil (LMS)

What? What was the project? Who was involved? How was it structured?

During the 2006-07 school year, Kelly, a 3rd grade teacher, and I, the school library media specialist, collaboratively planned, taught, and assessed a unit focusing on the following essential question: "How have the native people in each of the five regions of the United States adapted to their environment to meet their basic needs of food, clothing, and shelter?" In the past, Kelly had taught this unit independently, with the exception of 4 - 5 support lessons that I taught in the Library Media Center. However, Kelly had expressed a desire to overhaul the Native American unit to foster enduring understanding in her students. In addition, Kelly had some concern with the effectiveness and efficiency with which her students had or had not used ITL (Information and Technology Literacy) skills within the scope of this unit. It was the combination of Kelly's desire to revamp the unit coupled with her reflective approach to teaching that led me to invite her partnership in the 2006-2007 action research call from David Loertcher: "Are two heads better than one?"

Kelly and I began by using the backward design model and asked, "What do we want our students to know and be able to do by the end of this unit?" In addition, we considered the steps laid out by David Loertcher on his action research wiki. With this in mind, we grouped our 21 students into the data table provided. We also examined the social studies essential question and objectives as well as the ITL objectives for 3rd grade. Kelly and I noticed that there were many ITL objectives that would be utilized within this unit, however, we began to identify the "power objectives" - those objectives that were either new for 3rd grade or were particularly meaningful within the planned context. We began to record our planning and selected objectives which were written in a Universal Planning Tool (UPT). Finally, we decided on the mid-unit assessments, the culminating assessments, and the Big Think. We recorded these on the UPT and drafted rubrics for each assessment.

Students went through the full information problem solving model including: pre-searching, developing questions, using trash and treasure to note take, citing sources, and synthesizing their information. This was based on an expert to jigsaw model wherein students focused on one region of Native Americans to learn what food, clothing, and shelter they had and their relationship to the environment in which they lived. Then, they were regrouped to become an expert in one area (food, clothing, or shelter) and, utilizing the jigsaw model, became engaged in " The Big Think."

So What? What impact did the collaboration have on student learning?

In examining the student data table, it is clear that the majority of the students improved their performance. In the high ability group, all 5 students moved to "exceeded unit objectives." In the average ability group, 3 students moved from "usually meets unit objectives" to "exceeded unit objectives," and 4 students moved from "struggles with unit objectives" to "met." However, what was most inspiring to us was that within "challenging ability group," one student jumped from "struggles" to "exceeds" while 2 students moved from "struggles" to "met." We also implemented a "Trash and Treasure" prompt-like assessment that students took before the Native American unit and once again directly following it. Over half of the students made significant growth in their ability to extract important information from non fiction text and also to synthesize the information into their own words. Lastly, our data from observations indicated that more kids demonstrated greater confidence in their ability to speak in front of a group, to express their opinions based on their research, and to apply their learning in the "Big Think." It was certainly a moving experience for both of us to stand back and watch our students debate with passion, show pride in their work, and learn within an authentic, albeit challenging, environment.

Now What? How will the results inform teaching in the future? How will it impact colleagues and our school culture?

Neither Kelly nor I had ever taught a fully collaborative unit before. At its conclusion, we felt strongly that our students' success was the result of having two caring teachers who provided smaller group work, more individual contact, different perspectives in our planning, and two eyes focused on improving student learning.

We are considering another action research project for the upcoming school year. We felt that the impact the collaboration had on our thinking as professionals as well as our students' learning was meaningful and empowering. Using the data to answer a question was important, as we often rely on gut feelings, instinct, or our rose-colored glasses (seeing the results we want to see). We also plan to share our action research results in grade level meetings as well as within the school's and our district's ITL Committee. Hopefully, other teachers will be inspired to try an Action Research project as a way to gather data to inform their teaching and learning.

Bedford Middle School, Westport
Action Research 2006-2007:
"Are Two Heads Better Than One?"

Collaborating Teachers: Karen Clark (7th Grade Science) and Rita Hennessey (LMS)

Project:
When I approached Karen Clark about doing a fully collaborative unit together, she readily agreed. After some discussion, we decided upon the astronomy unit. Our essential questions were "How does the Earth relate to the solar system? How does the Earth relate to the universe?"

Within this unit, we covered both Science standards and Information and Technology Literacy Standards (complete information is available in the Unit Plan under "Project Details" on David Loertscher's Action Research wiki). Using both standards, we used backward design to create the unit. Both of us co-taught and co-assessed the unit (the unit plan and all rubrics used are also available on the wiki). In the past, I would give support lessons on research and how to write the Works Cited list, create a pathfinder for the students, and assess the Works Cited list. For this unit, we assessed note taking, the Power Point presentations, and the Works Cited list.

Research began in the Media Center, and continued in the classroom. We were able to bring laptops into the classroom to enable students to continue to research, if needed, and begin their slideshows.

Karen Clark had created a prediction table (based on past student performance), and determined that 50% of students would struggle to meet expectations, 35% would meet expectations, and 15% would exceed expectations. At the conclusion of this unit, 75% of students met or exceeded expectations (one student was excused due to a long term illness). While only one high-ability student improved performance, two average ability students and two struggling students increased their performance as a result of having two teachers collaborate on this unit, proving that yes, two heads are better than one. There was more teacher/student contact time and more time to give one-on-one help when needed.

Big Think:
After students completed their research, they presented a PowerPoint on their planet. This was the traditional end to the unit, but we took it further by implementing what David Loertscher called "The Big Think." Students took on the roles of NASA task force representatives. In this role, students defended and deliberated which planet (if any) to explore next, and why (or why not).

Are Two Heads Better Than One?
Yes – more students met expectations that we had predicted.
Each of us had different ideas to bring to the table, and our discussions always resulted in a new & better plan. We were able to bring both our strengths into play to further student understanding and achievement. Overall, this was a successful collaboration; the hardest part was finding mutual planning time. As a result, we relied on e-mail to send drafts back & forth, and share ideas.

Staples High School, Westport, CT
Action Research Project

Robin Stiles, Library Media Specialist

Answering the essential question "Are two heads better than one?" I submit to you that not only are two heads better than one but that two sets of eyes, two pairs of hands, and two hearts that care about the depth and breadth of student learning at Staples High School can make a world of difference. Patrick, my collaborating English teacher, and I started this process with a class of reluctant juniors and we count them among this year's select cadre of seniors who have become stronger students and library advocates. The twelve students from our Action Research class were among the first at the beginning of this school year to greet me with big smiles, questions of summer, and among the first to visit and use the library!

It is a graduation requirement for every junior in our school district to write a research paper complete with annotated bibliography, outline, note cards, rough draft and final draft. The up side to this project is that the student may pick the topic of their choice, a concern or an issue that interests them. The Effective Writing and Research Skills class of Patrick's that I chose to work with was a mixed bag of individuals. Students in this class may not have done well on the sophomore CAPT (State of CT Achievement tests), may have attendance issues for a variety of reasons, may have family issues at home that make it difficult to learn, may be learning disabled, and in the case of one young lady transferred in speaking fluent Ukrainian, all of which can create challenges for writing an English research paper.

Patrick, who I collaborated with, is a very special individual who truly enjoys reaching and teaching students. Patrick has a special way about him that makes the student feel comfortable, makes the student feel worthwhile, and makes the student realize that he or she is special and that he or she can achieve goals set in front of them. The research paper assignment, broken into chunks, was completed during the second semester of the year. Students met at least one a week in the LMC for guided instruction as well as meeting me individually during their free periods. Patrick's class was simultaneously working on literature selections in class along with their research for their paper which made continuity difficult. My favorite lesson of Patrick's was on how to write an outline. The description of this lesson is available on David Loertscher's wiki. The students knew that either Patrick or I were always available to help.

Meeting times between Patrick and me were limited and email was important for planning. We combined objectives from the English Department curriculum and from the Information Technology and Literacy Department curriculum for this effort. Usually, as a library media specialist working with a collaborating classroom teacher, the project is largely designed without me, I provide resources and instruction in how to locate and access information related to a project, and rarely have a hand in final products or assessment. We shared everything: planning, teaching, and assessment. This included the allowance of 10 points per student to have a research conference with me and a completed pathfinder with notes and keywords attached. Those extra 10 points could make or break student's grade. This idea of adding 10 library media center related points was a major contribution from David Loertscher's guidance in the planning of our Action Research. All of our handouts, outlines, and assessments may be found on David Loertscher's Action Research Wiki.

Transforming note cards into a rough draft had to be the most difficult challenge for the majority of these students. One young lady who chose to write about the subject of rape had a most difficult time. She was working almost a full time schedule after school and on weekends at a part

time job, making her very tired during school most of the day. It was a constant challenge to keep her motivated. About two thirds of the way through the project she really wondered what the point of all this was. At about the same time she confided in me that a friend of hers read her notes and was very interested in a lot of the information that she had gathered. Later we found out that her friend had experienced a rape situation which really devastated her. The understanding that her research might have great relevance for others really began to sink in to this young lady at this stage of the research process. This was the point where we began to talk about "The Big Think" with our students and introduced the reasons or goals for taking their research to the next level. They had "aha!" moments where they critically thought about their research having an impact on others.

Our "Big Think" was a round table discussion sharing answers to some overlying essential questions listed below that we put to our students.

Essential Question:

- With respect to your given topic, what did your research indicate was the best solution to "fixing" this issue?
- How will that influence the way you conduct your life?

Supporting/Guiding Questions:

- If you were selected by a local news station to share your research findings with a larger audience (local community, the nation, the world as a whole), what key aspects of your topic would you want the public to recognize or understand about your topic?
- How can that knowledge help change and/or shape the world?
- After researching this social, environmental, and/or global issue, how will you (or have you) change(d) the way you live your life or the way you think about life? If not at all, explain why not.

The English Department has been reconsidering options to the Junior Research Paper. I would have loved to have had time to allow our students the creative opportunities to produce videos, music, workshops about their topics, start new clubs at the high school, create publicity related to their issues etc. but due to lack of time and a quickly advancing June deadline we met and shared our hopes and dreams for communicating our findings to others. We did in a small way increase the number of people who learned about what they researched. Previously and still in effect in many junior English classes, the student does the writing and the teacher does the reading and correcting…so two people get to learn the new information. With our "Big Think," consisting of a round table discussion, twelve students and two teachers were able to share and learn from the results of everyone's research. Including a culminating "Big Think" activity would enhance the required Junior Research Paper.

The question was put to our young lady researching rape, "What if you were able to get a speaker to come to school, what if you were able to start a hotline, what if you were able to reach your friend with a handout on how to avoid rape before hand…would it have made a difference? Could it still make a difference to someone in the future? Posters were made, a group was having a meeting, and discussion among groups of girls was started concurrently with the culmination of this research paper. "How can we all make a difference?" will be thought of for some time.

The statistics do reinforce that two heads are better than one. We pre-assessed that 23% of the students would struggle with objectives, 76% would meet objectives and 0% would exceed objectives. For the post assessment, we found that 8% struggled, 50% met objectives, and 42% exceeded the objectives. The full statistical report is available on the website.

Patrick shared with me an unsolicited email from one of the boys in our class (Student #1).

"The research paper on overfishing was definitely my favorite writing assignment. I liked writing on something I am personally interested in and the round table discussion was a great experience."

And what is that old adage that if I can reach at least one child then I will know I have made a difference? Well, with this opportunity we had two heads swelling with a little pride of a job well done rather than one! We had reached many children!

Advanced Contemporary Literacy
An Integrated Approach to Reading

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Background:
North East ISD is a Recognized school district in San Antonio, Texas with an enrollment of 61,000 students. North East has 12 middle schools, grades 6-8, where traditional reading courses were taught at each grade level. These courses consisted of teaching comprehension skills through novel studies. All students were enrolled in Reading regardless of their ability level. As a result of this one-size fits all reading program, many students, teachers and parents were concerned about the instructional rigor of the middle school reading experience. This was especially true of Gifted and Talented and Pre-AP students for whom reading comprehension was not a problem.

Course Design:
The initial design of each ACL course was created by a team of G/T certified Literacy Specialists. The components required in each course were the use of non-fiction (technical writing), Socratic dialogue, oral presentation, and student choice. The specialists generated overarching themes, essential questions, reading and discussion formats taken from the scope and sequence, academic vocabulary and suggested readings from adopted textbooks and additional supplemental readers.

A large committee was created and subdivided into grade level groupings each consisting of at least one literacy specialist, reading teacher, instructional dean, technology specialist, and librarian. Using the framework materials provided by the Literacy Specialists, the sub-committees selected and ordered the themes, refined the essential questions to address the theme, selected the appropriate research models, suggested critical reading strategies, academic vocabulary, and additional reading selections that would advance the exploration of the theme.

Brief Course Description:
Each course is rigorous and designed for students possessing advanced reading skills. Students will apply their reading skill in problem-solving, doing increasingly sophisticated research, and completing project-based assignments. Instructional strategies will include Socratic seminars and student portfolios to encourage higher level thinking and discussion of contemporary cross-curricular topics.

6th Grade:
At the sixth grade, this class will focus on a wide variety of nonfiction reading, oral presentation, and written expression.

7th Grade:
At seventh grade, this class focuses on the "reading" of contemporary media. Students will research the issues raised by the media and investigate the impact on society.

8th Grade:
At eighth grade, this class will focus on reading to support argumentation, persuasion, and debate. Students will be expected to research, read, and formulate arguments and to present their resulting position in a debate format.

Implications for the Library Program:
This high level of collaboration was the culmination of many years of informal and repeated conversations about the library as a center for instruction. These district level discussions were possible because Library Services is part of the Curriculum/ School Improvement Department. ACL has been a boon to campus libraries. The entire scope and sequence is predicated on the extensive use and teaching of research models and skills. Starting with the first nine weeks of 6th grade which is devoted to Big6 Research and then spiraling research models through the curriculum and across grades. Because this is a new course with the specific content being molded by student interest and created as we work through the first year, librarians have been vital co-creators and co-teachers. Putting us right in the middle of the curriculum where we belong.

Editor's note from David V. Loertscher
The significance of Sharon's work here cannot be overstated. I was a consultant to this district in 2006 for a "Ban Those Bird Units" workshop. We were promoting the use of high-think models in the library as the showcase of instruction. However, as with many speaking opportunities, follow-up is often limited and the impact of one's presentation largely unknown. So, when contacted in August of 2007 to come back to San Antonio to work with language arts teachers, I was pleased to do so. When I arrived, here were the entire cadre of language arts teachers from the middle schools and their librarian, on a Saturday in a voluntary all-day workshop. These teachers and librarians were facing a new course of instruction and they were largely unfamiliar with the high-think models they were to use. As the day progressed, the enthusiasm began to build – enthusiasm for the potential of combining the language arts classroom and the library into a cohesive entity.

Such a high-level collaboration is rare in the editor's experience. This is an experiment worth watching. And, if if is successful, then the challenge will be to design such an experience for lower performing students. It is also worth study because of the influence that Sharon and other librarians had to get seated at the curriculum design table.

Collaboration 101: A Work in Progress

Tina Inzerilla, MLIS
Las Positas College Library, Livermore, CA

Collaboration between library and teaching faculty involves trust, time, and hard work. I have collaborated with instructors in creating assignments that incorporate information literacy. My plan is to work towards developing partnerships with teaching faculty, creating a marketing plan, and devoting time to work closely with faculty on integrating information literacy into their assignments. Information skills are vital in today's rapidly changing electronic environment. This has presented librarians with new opportunities to creatively engage students. Providing information skills to students is a vital role of the instructional librarian.

During the last two years I was a part-time librarian at Las Positas College (LPC), a community college in Livermore, CA. My initial success in collaboration was due to the prior close relationships between existing library faculty and teaching faculty, my creative energy, and my recent immersion in instructional design models. I worked closely with the English as a Second Language (ESL) department and this gave me the opportunity to collaborate with an ESL instructor. We met for four semesters to create, co-teach, and evaluate assignments. Several assignments were based on the book *Super Teaching* by Dr. David Loertscher. This is a fantastic resource for assisting with the development of assignments incorporating information literacy skills by using interactive teaching models. The collaboration process included meeting to discuss the curriculum goals, brainstorm ideas, create assignments, devise assessment tools, co-teach the class which included bibliographic instruction, convene again after the class to discuss the student outcomes and redesign assignments as necessary.

Faculty are seeking successful assignments and projects that students find interesting and prevent plagiarism tactics. Faculty realize that students need to do more than Google information but at times are at a loss on how to manage incorporating critical thinking and information skills into assignments that have traditionally worked for them. Librarians can be an important part of this curriculum development. As information managers, librarians know information resources both print and electronic, use technology on a regular basis, and are on the forefront of seeing student success or failure with assignments. To sell our expertise, we need to find ways to meet faculty in their own arena, understand their teaching concerns and obligations; then develop library services or products that they can easily utilize in their teaching environment.

This August, 2007 I was hired as a full-time faculty librarian at LPC. As the Instructional Librarian, collaboration with faculty is a priority for me. I have already started collaborating with faculty on utilizing library resources and incorporating information literacy. In order to have a successful partnership with faculty, trust and confidence needs to be developed between library faculty and teaching faculty. An excellent way to develop a working relationship and credibility is to join committees that faculty must be on. Committees I considered joining deal with shared governance, curriculum, and

technology such as Academic Senate, Honors, Distance Education, and Basic Skills / Student Success. I chose to immerse myself in Student Learning Outcomes (SLO's), an important curriculum process that is part of accreditation. All California community colleges must demonstrate that they have implemented SLO's. I am a co-chair of the SLO committee acting as a trainer of SLO's working closely with faculty to ensure they understand and can meet their obligations. Using my instructional abilities, I train faculty on the creation of their SLO's including assessment rubrics and data entry into eLumen, a software designed for tracking and monitoring SLO's. This has garnered me credible exposure and demonstrated my abilities as an instructor who understands the curriculum process, assignments and assessment.

My experiences have demonstrated to me the need to consciously implement specific steps to keep this instructional process moving forward. As Instructional Librarian, I am preparing to increase my working relationships and outreach to faculty based on the following outline. Previous collaborations have shown me that this process works well in our academic environment.

- Faculty
  - Contact instructors with common goals
  - Discuss teaching strategies that involve critical thinking skills
  - Meet with instructors in a casual environment
  - Brainstorm assignment ideas
  - Create jointly developed assignments – the *Super Teaching* models will be a launching point for discussion
  - Co-teach assignment
  - Follow-up meeting with instructor to discuss student outcomes
  - Revise assignment as necessary
- Marketing
  - Write articles to be included in the campus newsletters such as *LPC Wired*, the technology newsletter
  - Present at department and division meetings
  - Utilize and showcase successful partnerships to generate interest amongst teaching faculty
  - Workshops on library services for faculty
- Target Groups
  - ESL
  - English
  - History
  - Political Science
- Review Collaboration Process
  - Review assignments and student outcomes
  - Select successful projects as show pieces
  - Brainstorm new ideas with Library staff

Marketing is a key component to establishing awareness of the library's instructional abilities. A successful collaboration can then be used to market the resources of the

library and build faculty confidence in the library. Other marketing ideas, I am working on are developing interactive library guides or pathways that are suitable for distance education and the typical community college student who likes access to resources 24/7. Also I am developing specific workshops or Flex Day activities for faculty based on feedback. These include Google Tips, Using the Internet for Research, Using the Library Citation Generator (NoodleBib), and Setting Article Alerts in Library Databases.

As Instructional Librarian, I am excited to be part of the instructional scene bringing a new emphasis and understanding of the importance of information literacy skills for today's learners. Collaboration 101 is like any class with accompanying assignments: it is a work in progress that will require changes, updates, creative input, time, energy, assessment, and hard work.

Unpacking the Baggage of Collaboration: Some Factors to Consider

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As we become school library media specialists (SLMS), we are taught to embrace the roles and responsibilities expressed in *Information Power* (1998). As instructional partners, many of us focus our energies on attempting to build collaborative relationships with teachers. For some, these efforts pay off handsomely; for others, collaboration has become more an elusive grail than an attainable goal.

A number of studies both in Michigan (Drake, 2006; Mardis, 2007; Mardis & Hoffman, 2007) and in other states (e.g., Jones, 1997; McCracken, 2001; Pickard, 1993; Slygh, 2000) documented the gap between role theory and role practice of SLMS found that few SLMS are able to practice instructional partnering role to a great extent.

Barriers to collaboration may be due to teachers' career stages; SLMS need to understand the types of support they can offer teachers at various points in their careers. The Concerns Based Adoption Model (CBAM) (Fuller, 1969; Fuller & Bown, 1975; Hall & Hord, 2006) of teacher development has helped to illustrate the ways in which teachers progress personally and professionally in three stages. In their view, the three stages were:

1. Early career: concern for self image and perceptions of competency;
2. Mid-career: concern for instructional tasks and situations;
3. Late career: concern with instructional impact on students.

SLMS have essential roles to play at each point on a classroom teachers' journey, if the opportunities for collaboration are assessed with savvy.

Early Career Teachers

Teachers in their first three to four years respond to a number of challenges. During this time, teachers are struggling to establish their classroom routines, a sense of curriculum content and schedule flow, and school culture. This initial period is also the time of great attrition; only 54% of new teachers make it through their first five years (NCTAF, 2002). In fact, this high level of teacher turnover is a pressure on school budgets and may affect consistent school library funding.

Two major factors affect teacher retention: school-based support and training in the selection and use of instructional resources (Darling-Hammond, 2001). SLMS have a tremendous opportunity to establish relationships with young teachers by supporting them with SLMS resource expertise and with the school library media center collection that respect their self-consciousness and reluctance to ask for help.

Mid-Career Teachers

Teachers in their seventh to 15th years of teaching are characterized as being "mid-career." By this time, teachers are comfortable in their roles in the classroom. Getz (1996) found that as teachers progressed in their careers, their familiarity with the processes of teaching deepened and they tended to become more conservative in their attitudes toward discipline and collaboration, especially with SLMS. The explanation for this shift has been attributed to a lack of contact with the school library due to classroom isolation and the "washing out" of preservice education when teachers have achieved their own mastery of curriculum content and student behavior (Zeichner & Tabachnick, 1981).

A strategy to employ when working with these teachers, then, is to appeal to their sense of classroom-boundaries. Starting opportunities for connection should occur in the teachers' own classrooms through booktalks brought to the Language Arts students or resource evaluation lessons taught in the science lab.

Late Career Teachers

Van Deusen (1996) found that SLMS were perceived as outsiders to planning and instruction and had to carefully and strategically build collaborative relationships with teachers by acknowledging teacher expertise in content and proving SLMS expertise in process. O'Neal (2004) confirmed these findings in a Georgia study that revealed that teachers tend to have very traditional conceptions of the roles of school library media specialists and resist expansion of those roles or integration of school library program standards.

Relationships with these teachers should honor teachers' content area expertise and exploit traditional uses of the media center. While the late career English teacher might be reluctant to engage in a podcasting activity with a SLMS, the teacher might be open to a presentation to the class about citation style or plagiarism. A late career science teacher might be reluctant to include a SLMS as a science fair coach, but might be open to using the school library as a showplace for completed science projects.

These suggestions merely represent starting points for building relationships or, as Kuhlthau (2004) calls them, "zones of intervention."

When we are increasingly fighting for the survival of our profession, it's important to understand that we have a vital role to play in keeping quality teachers in schools. We have flexible areas of expertise to lend to this effort in addition to collaboration through instructional partnering. By supporting teachers through their

challenges at each point in their career, we can assert our essential role in fostering an effective and healthy school environment.

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Promoting Information Literacy & Teacher-Librarian Collaboration through Social Marketing Strategies: A Human Information Behavior Study

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Introduction

Professional directives such as those published by the American Association of School Librarians (AASL) and the Association for Educational Communications and Technology (AECT) through their *Information Power: Guidelines for School Library Media Programs* (1988) and *Information Power: Building Partnerships for Learning* (1998) assert that collaboration between school librarians and school library media specialists and teachers is a fundamental professional responsibility. AASL/AECT believes that librarian-teacher collaboration can not only improve student achievement but that it is essential in improving students' information literacy skills and behaviors. Nevertheless, little in the way of field research exists concerning teacher-librarian collaboration that adds insight into these assertions. The teacher-librarian literature shows that most of the writing on this issue reflects commentary and reflections on personal experiences in developing collaboration activities.

Goals & Objectives of the Project

This research project attempted to field test a strategy for teacher-librarian collaboration based on social marketing techniques designed to promote collaborative activities between teachers and librarians in the creation of instructional units that would likely promote student achievement through the better use of information literacy skills and information seeking behaviors. The strategy was also designed to help teachers understand the importance of information literacy and to help them integrate information literacy skills and information seeking behaviors into classroom instruction. The approach of the study was influenced by theoretical assumptions contained in social marketing; sociological collaboration, exchange theory, and community psychology.

Defining Terms

Social Marketing. Social Marketing is a concept promoted by Philip Kotler and Gerald Zaltman in the 1970s where they reasoned that the same marketing principles that were used to sell products to consumers could be used to promote socially beneficial ideas, attitudes and behaviors to target audiences. They believed that Social Marketing was different from commercial marketing in that it sought to influence social behaviors not to benefit the marketer, but to benefit the target audience and general society. Since the 1970s Social Marketing has been widely used to promote a variety of pro-social behaviors including, reducing smoking, drug

abuse, heart disease prevention, and promoting contraceptive use, and organ donation. Social Marketing seeks to influence behaviors by changing behaviors, beliefs, attitudes, and actions or to reinforce existing positive behaviors. To bring these behavior changes about, Social Marketing promotes communication with the target audience through well-conceived educational activities, and public information management. Social Marketing, like commercial marketing follows the AIDA model: A Attention; I Interest; D Desire; and A Action. A Social Marketing message must be noticed and it must attract attention (A). It must generate interest (I) in the organization and in the product and/or services being promoted The message must show that the product or services will be of benefit to the customer now or in the future; thereby it creates a desire (D) for the product or service, The last element is action (A). The potential client must be motivated to take positive action regarding the service or product. Social Marketing does not indoctrinate, but it does educate and inform possible customers about choices and potential for betterment of both the individual and the group.

Social Exchange Theory. This theory suggests that an interaction involves voluntary exchange of resources (including goods, talents, and expertise) between individuals, groups, and organizations. These entities have resources of value that they are willing to exchange for likely benefits. From an economic point of view, benefits must be weighed against the cost of exchange and sharing in terms of what the received benefits will be. Because exchange theory involves social networks, characteristics of relationships, social structures, power configurations, exclusion patterns, negotiation skills and styles, and prevailing influences are important to understand.

Community Psychology Theory. Community psychology is the study of persons in context of their environments, emphasizing the ways that society impacts individuals and their communities. It is likewise concerned with how individuals interact with social groups such as churches, businesses, schools, and other institutions. In a larger context, community psychology focuses on social issues, social institutions, and other settings that influence individuals, groups, and organizations. Some definitions suggest that within service organizations such as libraries, the role assumed and behaviors by the practitioners or professionals affects the behavior of the organization and that in turn affects the behavior and attitudes of the community that it serves. (Penland, Nelson, and Prilleltensky Community Psychology Network is created by Matthew J. Cook, available at http://www.communitypsychology.net/cmmtypsych.shtml http://www.comminit.com/changetheories/ctheories/changetheories-27.html

Social Collaboration. Social collaboration is concerned with social rules and processes that govern, bind and even separate people. Social collaboration involved individuals, groups, institutions, businesses, governments, and associations. (General Theory of Collaboration).

Librarian-Teacher Collaboration. The American Association of School Librarians defines librarian-teacher collaboration as "a symbiotic process that requires active, genuine effort and commitment by all members of the instructional team" as they all work together in planning, executing and maintaining a viable learning community that meets student's and others' learning goals (pp. 50-51). Implied, if not directly stated here, is the belief that collaboration is an equal process occurring between librarian and teacher.

Theoretical Constructs and Literature Review

The basis of exchange theory is explained and discussed by Cook, Fiske, Gergen, Racine, and Willer. Mattessich and his colleagues considered collaboration theory in terms of cooperation, and group problem solving. As mentioned earlier, Kotler and Zalman conceived social marketing concepts based on their understanding of commercial marketing theory. Weinreich furthered those concepts by suggesting practical and useful applications.

School library theorists and practitioners who have addressed various theoretical and practical issues involved in the processes of librarian-teacher collaboration and information seeking behaviors include Berkowitz, Donham van Deusen, Putnam, and Wolcott All of these writers address the positive attributes of collaboration with teachers. In recent years Achterman, Bush, Coatney, Capozzi, Doll, Haycock, MacDonel, Milbury, Robinson, Stripling, Tu, Turner and Riedling, Youssef, and Weisman have continued this discussion by contributing practical suggestions involved in collaboration between librarian-teacher. Dissertation research by Gate, Martinez, Phillipson, Seavers, Slygh, and Thomas have addressed issues and problems from practical and theoretical levels associated with librarians and teachers collaboration.

Methodology

For the purpose of this study, the investigators assumed that social marketing is not complicated and can fit into most school library media environments. To test this assumption this study used two approaches based on social marketing techniques and theory. It tested for behavior attributes held by teachers that might serve as predictors of willingness to collaborate with librarians. It also tested for behavior attributes (positive and negative) occurring when teachers and librarians are engaged in collaboration involving information literacy skills. The research approach used was twofold. The first test (T1) used student-librarians enrolled in a graduate level practicum course required to meet requirements for a state-mandated certification for school librarians, offered through a university in spring of 2004. This approach also required the cooperation of the students' field librarian supervisors (i.e., building school librarians) and selected teachers in the host schools. The second approach (T2) employed 2 focus groups of teachers invited by the schools' librarians from 2 schools not involved in the collaboration project (T1). The focus groups consisted of faculty drawn from one elementary and one high school. The focus groups met only one time after school and responded to a set of questions posed to them by an experienced facilitator (not the investigators) regarding collaboration between teachers and librarians. To help foster discussion, scenarios of problems that librarians might encounter were given to each focus group. Although these scenarios were used to prompt discussion, the discussion was not limited to issues raised in these. (See Exhibit 2).

The cohort of student-librarians (T1) was asked to take part in this study as a part of their usual "problem solving" assignment. The two investigators of this project developed guidelines for the student librarians for the collaboration project that included directions for design of marketing strategies (e.g., announcements, leaflets, conferences), and instructional unit design procedures that involved both subject content and information literacy skills. Included in these instructions were suggestions for services to offer, limitations to set, and time frames to follow. As a marketing incentive, students were told that they could offer $200 toward the purchase of library resources to a teacher who agreed to participate with them in planning and presenting a unit of study to their students emphasizing information literacy skills. Students were instructed

on how to engage in a collaborative process and how to keep observational records such as field notes, unobtrusive observations, and informal evidence. A summative evaluation asked both the student-librarian and the teacher to reflection on the experience. Analysis was based on available data from 5 schools (4 elementary and 1 middle school). (Data from the 2 high school sites were unavailable for analysis).

Responses from both groups were transcribed and analyzed by the two investigators based on a case study approach as suggested by Good (1972) as well as a commercial computer-based content analysis program . In order to ensure objectivity in preparing the case studies the following the procedures were followed based on guidelines suggested by Huberman and Miles (1994).

- Sites and participants were selected in a logical matter.
- Data collection and recoding followed standard instrument construction methods used to develop case histories.
- Careful reading of the participant journals, focus group transcriptions, and answers form the teacher questionnaires were performed.
- Data summaries based on a standard code for analysis reflected in the various data formats was constructed.
- Careful attention as given as to how the study was conceived analytically in terms of problems to be investigated, definitions to be used, and approach and methodology to follow.
- Presentation of the data was based on a counting and coding procedure of the major categories reflected in the data.

The clinical case report method followed in this study is also based on the idiographic approach method endorsed by Schwarts and Jacobs (1979). This approach holds that clinical case reports of individuals are representative enough of a specific group that generalizations can be made about the behaviors of individuals belonging to such groups or cohorts. Exhibit 1 is an example of the case summary approached used in this research.

Findings

Test of the Social Marketing AIDA Model.

Attention (A)--Gaining attention of a potential market and convincing this market to acquire the products or services is essential in Social Marketing. In an effort to draw attention to their role in collaboration, most, if not all of the student librarians in the T1 test first developed flyers that, in various ways, were distributed to faculty. The building librarians were very protective of how and where this was distributed. Because the student librarians were basically visitors in the school, they had very little say in this decision. One building librarian would not allow the distribution saying that the principal might not approve. Another librarian decided to allow it to go only to a selected group of teachers with whom the librarian had a collaborative relationship. For the most part, simply relying on flyers was not successful as most teachers did not respond to them. In some cases, emails sent to the faculty or to selected teachers (targeted markets) did produce responses. Often the building librarian simply had to approach a teacher and asked for participation. What this appears to suggest is that gaining attention using

social marketing within a school environment to promote collaboration is a social interaction process that must be built overtime with good interpersonal skills and the building of respect for and trust of the librarian based on his or her skills. In two cases teachers responded to the public announcement based either on the cash incentive offered and/or on a desire to help a student librarian with an assignment. Overall, social marketing strategies must be strong enough to generate attention through personal needs or a sense of meeting professional service expectations.

Interest (I)—promos interest in the service or product offered. On the whole, the strategies used in the field studies (T1) initially generated little interest on the part of the faculty to engage in a collaboration project with student librarians. The demands on teachers' time seemed to be a prohibiting factor as well as mandatory testing requirements that left little free time for "extra" activities. The role of "vistor" that student librarians were forced to assume also might have been a factor in lessening the overall interest in the collaboration projects. Data suggest that to market their services and products librarians must create an interest in what they have to offer and to show that their services have immediate and long-lasting value to teachers. Strategies used by marketers to establish and sustain interest in an organization and its services include crafting an image of the organization as a comfortable and inviting place from which good services and programs are routinely expected and of the effective and approachable people who manage and staff the organization. Responses from the focus groups (T2), although consisting of self-selected teachers who responded to librarians' invitations to join the focus groups, showed more interest in collaboration with librarians than did teachers in the field test (T1) and reflected the teachers' attitude that librarians had much to offer them for improving their teaching effectiveness and student achievement.

Desire (D) and Action. (A)–Clients recognize that services and programs offered will benefit them now and in the future; they are likely to act to acquire or request such services. Desire leads to action. Responses from the field tests (T1) showed that teachers initially did not desire to participate in a collaboration project with the student librarians. Only two teachers responded directly to the advertisement. The cash incentive of $200 seemed to have played only a small role in encouraging teachers to engage in collaboration within the context of this study. Nevertheless, once the field tests were completed, teachers (with one exception) found the experience rewarding. All teacher collaborators indicated that they would be willing to collaborate with their school librarian in the future. The focus groups (T2) indicated the same willingness to collaborate with librarians stating that they and their students would benefit from collaboration. No marketing campaign is successful without Action (A) on the part of the potential client. In the field studies (T1) most of the action was initiated by the school librarian asking for teacher participation rather than teachers recognizing the value of collaboration opportunities and coming forward based on the advertisement strategies used. Nevertheless, Social Marketing theory suggests that important action processes take place in the action segment and many of these were reflected in the data. These included the following:

Efficiency;
Negotiation skills;
Social, professional, and personal benefits incurred through collaboration;
Power to help make decisions;
Social and administrative support for collaboration;
Skill and instructional expertise of librarians;

Territoriality;
Teacher authority and control; and
Initiation of contact.

Themes from the Research

Common themes to emerge from both groups (T1 and T2) are summarized in the following discussion. Teachers indicated that they were efficient in collaboration and that they could negotiate with librarians in a collaboration project. Most teachers in the field test (T1) indicated that they were pleased with the results of their student librarian collaboration, noting they benefited personally and that their students benefited from exposure to new resources and information approaches. Student librarians indicated that they were allowed some discretion in how they prepared and presented lessons; but in most cases, the student librarians were expected to simply design instruction and resources around what the teacher had already planned or had customarily taught. In other cases, teachers were open to new ideas, approaches, and resources. What seemed to be of the most benefit to teachers in these student librarian collaboration projects were exposure to new resources and the expertise shown on the part of the student librarian to engage their students with information technology and print resources. Having a student librarian assume some of the planning and presentations also gave them more time for other important matters.

The focus groups (T2) indicated the value that librarians offered in terms of information expertise, thus affecting their effectiveness as teachers. Learning about resources, having help from the librarians to make them better teachers, and seeing how students benefited by new information literacy experiences were the social and personal rewards incurred from collaboration and noted by both teachers and members of the focus groups

Teachers in both groups felt that their administration would expect and support collaboration with librarians. Teachers in both groups felt that their school librarians were very capable of collaborating with their projects. Student librarians noted the limited time frame in which teachers worked, and they felt that this lack of time often interfered with their effective collaboration. Because of time constraints, student librarians often found it difficult to maintain contact with their teacher collaborators. For the most part, student librarians found their teacher collaborators to be flexible and open to negotiation and accepting of ideas from them.

The student librarians also learned more about teacher needs and how to meet these. It is necessary to note that student librarians were still in a subservient role due to their stature as student librarians and this undoubtedly influenced their effectiveness as collaborators. Problems did arise in one field test situation where there was an obvious personality conflict. The student librarian perceived the teacher to be non-communicative, disinterested and unresponsive to requests for information about the planned unit. On the other hand, the teacher felt that the student librarian was not competent, was not available, did not manage her time well, and that she did a poor job of presenting the lesson to the class. The student librarian perceived the teacher to be disengaged and non-attentive during the lesson presentation. Nevertheless, this teacher agreed, based on prior experiences with librarians, that collaboration with a school librarian was beneficial.

One aspect of collaboration that the data from these two groups did not completely reveal was that of territoriality. Just how much authority are teachers willing to allot to the librarian in

collaboration? Data from the field test (T1) indicated that teacher style often determined this. Teachers who were more open and relaxed in their approach to teaching seemed more willing to release some authority than teachers who were more structured. The focus groups (T2) indicated that giving up some authority and territory rested with the perceived competency of the librarian.

In terms of initiation of collaboration, the focus groups (T2) noted that the openness of the librarian and an invitation to collaborate from the librarian was helpful in fostering collaboration. Some teachers would be willing to initiate collaboration, but they seemed to need some sign of assurance that the librarian would be open to such collaboration. This indicates that the school librarian has the prime responsibility to open collaboration dialogues. Both groups indicated that time were a factor in collaboration. Both teachers and librarians have limitations on their time and they both must understand the work and time demands placed on each other.

Data also indicated that collaboration can be enhanced by librarians bringing ideas, concepts and directions to teachers. Requirements of state mandated exams also played a role in teacher-librarian collaboration. If used correctly, these exams can foster collaboration between teacher and librarian in skill development. One teacher in T2 indicated that collaboration with the school librarian has caused her students' score to increase significantly.

Predictive Behavior

The data indicated that predictive behavior of teachers toward collaboration is tied to their available time and the responsibilities that they have as teachers. If they clearly see benefits to them and their students they will likely enter into collaboration if an avenue is available to them. They ask: will collaboration promote learning for both them and their students? Will it save them time?, and will it help students better perform on mandated exams? Teachers are more likely to enter into collaboration if they have confidence in the librarians and if they have had good experiences with librarians in the past. Although not completely evident from these data, it appears that teachers are not really accustomed to collaboration in the complete sense of collaboration being a process between equals. For example, in this study student librarians were not always given authority to structure or present lessons. It appears that in such cases, the assumption made by teachers was that the student librarian was an auxiliary support person. In one case, this was reinforced by the field school librarian insisting that the student librarian follow a prescribed program of information literacy instruction and that the student integrate that process into work with the teacher. The student librarian felt that this limited her role as an equal collaborator with the teacher.

Focus groups (T2) indicated that collaboration is enhanced when the school librarian is a full member of the teaching staff and recognized as such and is included in curriculum planning. Focus groups felt that knowledge of students and how they learn is essential for a librarian attempting to collaborate with teachers.

A computer generated content analysis of transcriptions of combined responses from both groups (T1 and T2) and based on coding categories provided by the investigators revealed similar results as those discussed above (see Table 1 and Exhibit 4). In addition, this analysis showed that the student librarians in T1 experienced some levels of anxiety and feelings of inferiority in their interaction with their teachers-collaborators. This most likely can be explained by the subordinated student-teacher role that they played in this collaboration experiment.

Discussion

Collaboration research in recent years enforces much of what we found in this study. For example, Mattessich and Monsey reviewed 133 studies of research literature relating to collaboration from many areas including health, social science, education and public affairs. Their summary, along with more specific librarian-teacher collaboration studies are presented below in relation to our study.

Environment and Collaborative History. Collectively, environment includes *history of collaboration*, the group or unit engaged in *collaboration is seen by others as leaders in collaboration*, and a *climate that is politically and socially favorable to collaboration* is developed and maintained. In our study, the most successful projects occurred when a history of librarian-teachers collaboration was established and ongoing. Data from both the field tests and the focus groups indicated that a history of collaborating with the librarians played an important role in teachers' willingness to engage and continue a collaborative relationship with librarians. These data also suggested the importance of the school librarian's leadership in helping to establish a politically and socially supportive environment for collaboration. Slygn found that a positive sense of professional community--as suggested by factors found in the School Library Project--voiced by teachers, librarians, school principles reinforced librarian-teacher collaboration.

Studies by Cate, Martinez, Phillipson, and Thomas highlighted the importance of environment in successful librarians-teacher collaboration. Cate found that a healthy environment promoted collaboration in that personal growth occurred, social relationships developed, and collaborators leaned new skills and gained new understandings. We likewise found indications of this in both our field tests and in comments from the field tests and focus groups.

On the other hand, Phillison in her study of how the school librarian might collaborate as an outreach agent to the local community found that an environment that promotes competition as a measure of success can complicate collaborations; but this can be lessened if the role of the school library is negotiated and measured as a bridge between school and the larger community. Martinez also noted in her study of school library outreach programs for at-risk youth that collaboration promoted the development of useful social networks as well as increased librarians' knowledge of skills and intervention theories.

Memberships Characteristics (including Process and Structure). Collaboration membership includes *Mutual Respect and Understanding*, *Self-interests and a shared stake*, *Multi-memberships*; *Ability to Compromise, Flexibility, Adaptability,* and *Clear roles and policy guidelines.* Mattessich and Monsey found that mutual respect and understanding is necessary for collaboration. Mutual respect and understanding factors were likewise found in our study in data from the focus groups as well as the field projects.

Mattessich and Monsey noted that collaboration is reinforced by self-interest and a shared stake in the outcomes of collaboration. This is a fundamental finding in our study as teachers noted that collaboration was beneficial to both themselves and to their students. By the very nature of the assignment, student-librarians showed a very high interest that their collaborations

succeed based on their own need for accomplishment. Multi-memberships indicators from our study are inferred by the close oversight given by the field librarians to the projects, knowledge of their teachers, their understanding of policy and the personal preferences and management styles of their building-level principals.

Data from the focus groups showed an awareness of the effects of policy, procedures, and communication in fostering collaboration. The need for compromise and flexibility was strongly suggested by the focus groups. These factors varied in the field test situations. In some situations the teachers were willing to make needed compromises and to be flexible. In other cases they were not because of personal preferences. In these cases, with a few exceptions, the needs of the teachers prevailed.

Communication. Mattessich and Monsey found process and structure requires both *frequent and open communication* and *informal and formal communication links* for collaboration success. We found this in our study as well. Both teachers and student-librarians in the filed test (T1) complained of the difficulty in meeting and getting messages to each other. In our study, communication generally consisted of regularly scheduled conferences and emails. Informal contacts proved problematic because of the scheduling of the student-librarians times at the school and student–librarians were not often available for informal meetings with their collaborating teachers. The more successful projects occurred when both teachers and student-librarians were willing to make adjustments so that necessary meetings could occur. Problems occurred when either the teacher or student-librarian could not make these adjustments.

Shared Goals and Mission, Purpose. A shared vision of goals and mission is necessary for success, according to Mattessich and Monsey literature review. The field tests demonstrated this in several ways. Teachers were willing to participate in collaboration because they perceived it helpful in improving student performance. They appeared also willing to collaborate to help both the building librarian and the student-librarian in training as a professional obligation.

Data from the focus groups indicated that teachers well understood the goals and purposes of librarian-teacher collaboration, and that they held a shared vision. Although Mattessich and Monsey noted that successful collaborations are foster by a sense of unique purpose, we did not test for this predictor. Nevertheless enthusiasm from the focus groups for collaboration suggested a feeling of uniqueness.

Resources and Convener. According to Mattessich and Monsey a *financial base* is required for successful collaboration. In our study a monetary cost from collaboration was not calculated. Nonetheless, if staff time required for collaboration as well staff needs are considered as resources then resource support becomes paramount. The data from our study indicted that time factors and staffing is crucial to successful, ongoing collaboration and that both are not readily available. Seavers noted the importance that staff time available played in the success of collaboration. Staff as factors in collaboration was discussed separately by both Martines and Seavers as an essential requirement for successful collaboration.

Collaboration requires someone to convene and manage the group. Mattessich and Monsey noted that a skilled convener must have interpersonal and organization skills. Field test data clearly indicated the importance of the convener role that the building-level librarians played in our study. Librarians in their schools had developed the trust and respect of

participating teachers to the extent that they were willing to enter into collaborative experiences with student-librarians. Focus groups also indicated teachers' respect for their librarian as conveners and initiators of collaboration. Thomas also found this leadership and convener factor in her study of librarian-teacher collaboration related to the planning and delivery of unit on poetry for sixth grade students.

Other Considerations

Social exchange theory and community psychology theory are two theoretical concepts that influenced the development and interpretation of data from this investigation Social exchange theory involves the sharing of resources and talents with others in exchange for benefits. Cost and benefits of the exchange must be carefully weight in terms of overall cost. Social exchange also plays a role in social marketing strategies in that the cost and benefits of social marketing must be considered. Our study was designed to test social marketing strategies as a means of promoting collaboration. In some sense our data indicated some success. Nonetheless, the cost factors were great in terms of staff time. Elements of social exchange theory is found imbedded through our study as well as librarian-teacher collaboration studies by Cate, Martinez, Phillipson, Seavers, Slygh, and Thomas.

Over the years community psychology has evolved to now places emphasis on helping communities improve through informed, professional intervention. The theoretical aspect of community psychology is our study is implied from the fact that collaboration is an intervention process designed to improve a school community. These concepts are developed further in studies by Martinez and Phillipson

In summary, based on data in this study, teachers in both test groups were supportive regarding collaboration with librarians. For the most part, these teachers had had positive experiences with librarians in the past and seemed willing to enter into collaboration. This eagerness was reflected in the perceived value that collaboration would bring to them as teachers and to their students. They may not have aware the AASL/AECT's definition of collaboration, but they certainly saw the librarian as a valuable asset in collaboration. The investigators assumed that this positive attitude from the teachers regarding collaboration was based on the social and professional competencies of the school librarians in the test schools and librarians in previous schools where the teachers had worked.

Nevertheless, the time restrains on both teachers and librarians worked against extensive collaboration. For example, with a large high school having over 200 teachers teaching in different subject areas, the librarian and his or her limited staff cannot hope to collaborate with each on an equal basis. Choices and selection of collaboration projects must to be made based on management needs. Routines for collaboration need to be established. These probably need to be developed in policy and made known to faculty. Teachers in the focus group (T2), especially those from the high school, recognized and understood this.

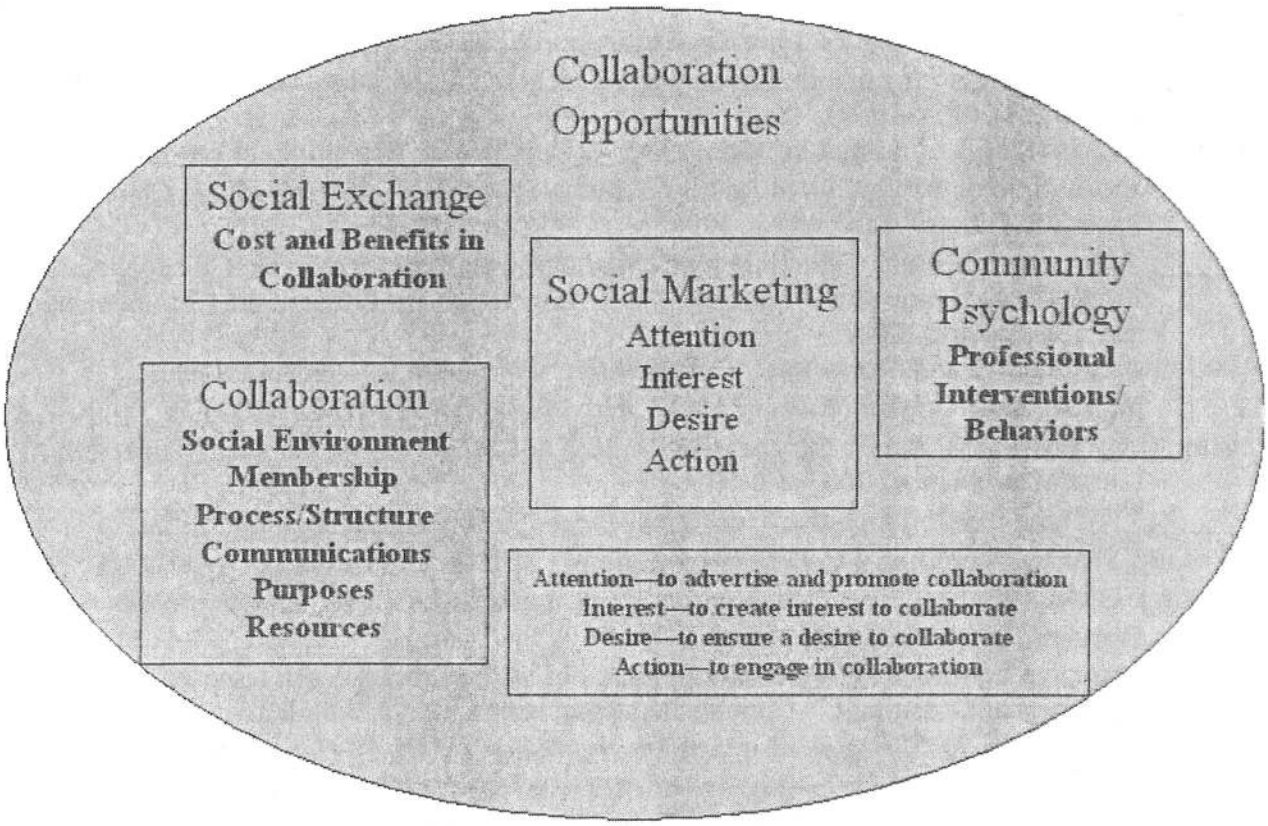
In terms of this research project, the bureaucracy of both the university where the research project was based and one school system in the study limited the access to students, librarians, and teachers (e.g., protocols dealing with the study of human subjects and legal and privacy constraints). Because this and the small sizes of the test groups the study must be reviewed as exploratory.

As discussed in the methodology section of this report, the Schwarts and Jacobs (1979) idiographic approach followed in this study, suggests that that the characteristics found in this investigation are likely representative of schools having effective school librarians who have established social and professional networks necessary for collaboration. Therefore we argue that positive collaboration is possible only where the school librarians have been successful in applying some of the major attributes of the basic theoretical concepts and practice in this study including social exchange and social marketing practices as outlined in this study.
We suggest that collaboration takes on different dynamics in schools where librarians have not been successful in their social or professional roles and are not accepted by teachers as equal to the tasks of teaching and collaboration. We further suggest that perhaps in these types of unproductive collaborative situations a better understanding of exchange theory and social marketing strategies by librarians can improve the collaborative nature of the teacher-librarian interchange. Exchange and social marketing used in an informed way can be effective in bringing about needed change, and creating a culture conducive to teacher-librarian collaboration.

A School Community Collaboration Model

A model serves as a pattern or explanation of events or phenomena. It can be narrative and mathematical, and it can present its interpretation in symbolic or abstract terms. Models can explain scientific relationships, social or organization conditions or a communication patterns.

Community psychology theories and models in general and those applied to library environments in particular suggest that the behavior of a community is influenced by how community workers--in this case school librarians-- interpret the role of their organizations in their community of work and how they then model their own behaviors according to that understanding (Penland and Williams; Levine and Perkins). In other words, if school librarians see the organizational role of the library as one that fosters collaboration with teachers, then their behaviors will foster a collaborative atmosphere. Based on community psychology theory and the principles of Social Marketing theory, we suggest the following model for promoting collaboration.



Conclusion

School librarians have a professional mandate and social expectation to collaboration with teachers. Collaboration promotes not only better teacher effectiveness and student learning, but it can advance the professional standing of the school librarian in a community of learners. Although there are several approaches that can advance collaboration with teachers, Social Marketing offers an approach that has been very effective in the promoting and improving social good in many areas important to society and culture.

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Exhibit 1.

SAMPLE OF INFORMATION LITERACY AND TEACHER COLLABORATION PROJECT

INSTRUCTIONS AND ASSESSMENT FORMS

1. Observational Records:

Please keep a formal diary of your observations about both yourself and your teacher behaviors as you proceed through this project. Divide your manual into the following sections and record your observations for each type of behavior there.

A. Observations of Teachers

Nonverbal behaviors

Points of agreements

Points of disagreements

Issues that required negotiations

Nature of negotiation resolution

Indications of satisfaction with process and project

Important comments made by teacher (positive/negative). See questions in section C below.

B. **Student self assessment (Record your own behaviors).** Make a separate section for each category and record your observations there.

Nonverbal behaviors

Points of agreements

Points of disagreements

Issues that required negotiations

Nature of negotiation resolutions

Indicators of satisfaction with process and product

Indicate your feelings about apply social marketing in promoting better collaboration between teachers and librarians

C. Self Refection of Teachers (At the end of the consulting stage ask your teacher to answer these questions. For consistency, have your teacher write down the answers.

1. Working with the librarian in this collaboration project was helpful? Comments:

2. Would you be willing to discuss other collaboration opportunities with a librarian should you have the opportunity? Comments

3. Would you take the initative to begin another collaboration project with a librarian? Comments

4. Do you believe that a collaboration project with a librarian has or is likely to improve your teaching effectiveness? Comments

5. Do you believe that this collaboration project with a librarian has or will increase students' achievement levels? Comments

6. Do you see any personal rewards or gratification for you from having engaged in this collaboration project? Comments

7. Would you be willing to enter another collaboration project with a librarian on an equal basis (that is sharing ideas and being willing to adjust your ideas based on input from the librarian about effective teaching strategies based on his/her knowledge of resources?) Comments

8. Do you see any social rewards for your collaboration with the school librarian (recognition from administration, students, other faculty, parents, etc?) Comments

9. Do you feel that currently you would have support from the administration to continue to engage in collaborative projects with the school librarian? Comments

10. Do you feel that you would be effective in the future in negotiation with the librarian in a collaboration project, (asking for resources to be purchased, asking for direct assistance in instructional preparation; logistic support from the librarian, etc.). Comments

11. Generally do you feel that most school librarians have the experience, training, and skills needed to engage in collaboration with you in preparing instruction? Comments

12. Were the promotion techniques based on social marketing as used in this project to encourage teachers to participate in this project appropriate? Comments appreciated.

C. Final product exhibit

After the project is complete please make sure that you give to Dr. Immroth all materials developed in this project.

D. Required forms of consent.

The University requires that all research participants be advised of their rights and assured of confidentiality. Please advise your teacher of this, and make sure that your teacher signs the attached agreement and consent form.

Exhibit 2.

Case Report No. 1

Type of School:
Elementary
collaboration with second grade teacher.

Marketing: Attention, Interest, Desire, Action

Flyer produced interest from second grade teachers for this and project by extension the field supervisor as a result of the publicity and interaction of the teachers-librarian and teacher.

Flyer was good in alerting faculty to resources and services available in the library.

Social marketing help connect teachers to the library for collaboration.

Already existing social networked helped and perhaps even made this possible.

Marketing technique can best result from the targeting of one particular teacher?

Librarians must prove that collaboration is a values investment of time on part of the teacher

Librarians need to bring ideas and examples to teachers along with information that others have collaborated.

Student: Collaboration Project Reaction

Please with outcome. Students were observed able to execute research skill objectives of the lesson.

Student Interaction with Teacher

Initial phone reaction was somewhat negative. To student teacher seemed hurried. Student was nervous as this teacher was not generally responses to invitation by field librarian. Student was nervous became she was new to faculty and did not know faculty well. During First part of lesson student was nervous.

Teacher and student agreed on information literacy project—teaching WebCat to second graders and its execution. Agreed that this would be a logical fit into previous work.

Time frame for instruction needed to be reduced because of teacher time schedule.

Time frame needed to be negotiated. Compromised was agreed to.

Teacher seemed skeptical at first of the project. Willing to try it for the benefit it allowed for free time.

As students responded successfully to the instruction, teacher's attitude changed and become positive.

Teacher Reactions

Helpful to know where the books were.
Willing to continue other collaborative projects with librarian
Would be willing to initiate collaboration project, librarians are helpful.
Librarian's collaboration and active teaching helps free her for TEKE skills
Collaborative project with librarians will help students by offering wider awareness
Reward came into giving more time for TEKE skills
Would be willing to collaborate on an equal basis
There may be social reward—not sure
Support from administration to continue collaboration projects
Would be effective in future in negotiate with librarians in collaboration.
Feels that librarians have experience and skills to work in coloration projects for instruction.
Promotion techniques for this project were fine.

Exhibit 3.

SCENARIO 1
Put yourself in the place of a librarian:

An experienced teacher of an advanced language arts class (honors class) has come to you with a request for you to gather up and make available all materials on Texas Native American folklore. He/she plans an assignment in which students will be asked to find an authentic Native American poem from a Texas Native American tribe. The teacher plans to have the students write their own poems based on poems they selected, following the styles and motifs of the poems selected. She has given the student 2 weeks to do this.

You, the librarian see some real problems with this assignment. First of all, you know that this type of materials is not readily available in your library and probably has not been widely published outside of scholarly folklore journals which are not well indexed. You know that your collection cannot accommodate this assignment and that it will require extensive searching in a research library. Secondly, you wonder whether these 7th graders will be able to master the writing of such a poem within the time frame given by the teacher.

How would you as the librarian suggest a collaborative project with the teacher in which you together design a more productive assignment?

SCENARIO 2
Put yourself in the place of the teacher.

You are an inexperienced art teacher and you have been searching for ways to better interest your average students in art and helping them understanding how art is an integrated part of their culture and society. You have two ideas. One is to have students conduct research folklore characters such as Pecos Bill and to design commutative stamps based on their understanding of the characters and their exploits. The second is to have students identify an historic event in history (especially history of minorities and other groups outside the mainstream of standard history) and, in small groups, to have them develop class murals depicting the selected events. You know very little about folklore and your knowledge of this type of history is limited. You do not know the librarian well, but you feel that this is a project on which you both might collaborate.

How would you go about suggesting this collaboration to the librarian?

Exhibit 4

Case Analysis Category Sheet

Case no. _____

Type of School:

Nature of Contact and Its Effectiveness

Interactions

Description and Nature of the Product and its Execution (Successes and/or failures)

Student Reactions

Teacher Reactions

Summary

Two Heads Are Better than One: Influencing Preservice Classroom Teachers' Understanding and Practice of Classroom-Library Collaboration

Report on the Longitudinal Case Study

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Abstract

Two Heads Are Better than One: The Factors Influencing the Understanding and Practice of Classroom-Library Collaboration was a longitudinal, qualitative case study that proposed to identify the factors involved in educating future K-8 classroom teachers about collaboration for instruction with teacher-librarians. The study monitored the growth of teacher education students' understandings of collaboration through their preservice education, student teaching experience, and first year of classroom teaching. The study participants were enrolled in a teacher preparation program facilitated by the researcher, a former teacher-librarian. The goal of this study was to suggest critical components of preservice education, student teaching, or first-year teaching experiences that influence novice classroom teachers' collaborative work with teacher-librarians. The preliminary report on the study was published in the 2005 Treasure Mountain proceedings. This report provides an overview of the entire study, a brief review of relevant literature, the data collected, and the findings from four surveys as well as other sources of data. This case study shows that interventions during preservice education are important influencers. However, the findings clearly indicate that the educators serving in K-8 school library positions and the supports, or lack thereof, for classroom-library collaboration during student teaching and first-year classroom teaching are the most influential factors in determining whether or not novice educators collaborate with teacher-librarians for instruction.

Introduction

Information Power: Building Partnerships for Learning focuses the work of school library programs on nine information literacy standards for students and identifies three spheres of influence for teacher-librarians: literacy, technology, and collaboration (AASL & AECT, 1998). The role of the teacher-librarian as an instructional partner with classroom teachers is clearly specified. Although quantitative research studies in sixteen states and one Canadian province have shown student achievement increases when full-time, certified teacher-librarians collaborate with classroom teachers (Library Research Service, 2007), the practice of classroom-library collaboration is not as wide spread as it could be.

The willingness, the eagerness, and the ability to collaborate are equal responsibilities of the classroom teacher and the teacher-librarian. One of the barriers to classroom-library collaboration is that preservice classroom teacher education emphasizes individual interactions between teachers and students rather than collaboration among teams of educators who jointly design, deliver, and assess curriculum (Hartzell, 2002). The participants in this study, however, engaged in collaborative lesson planning, implementation, and assessment throughout their preservice coursework. They were schooled to expect collaboration with their teacher-librarian and classroom teacher colleagues, and they were prepared to engage in this level of collegiality for the benefit of student learning and the betterment of their own professional development.

These new educators are among the 2.2 million that the U. S. Department of Education predicts will be needed over the next decade (Howard, 2003). They are new classroom teachers who, according to the National Education Association, are at risk of leaving the teaching profession within the first five years, in part, because of the lack of support from colleagues, administrators, and parents (NEA, 2006). Unlike many of their fellow novices, these new teachers entered their profession with high expectations for classroom-library collaboration during their student teaching and first-year classroom teaching experiences. This case study set out to determine which learning experiences, called interventions, during their preservice education most influenced these new teachers' understanding and practice of classroom-library collaboration.

This study also delineates the response from the school library community to the study participants' high expectation for collaborative teaching experiences with teacher-librarians working in the field. During their student teaching and first year of classroom teaching, the study participants entered the profession with a predisposition toward classroom-library collaboration for instruction. The findings of this study help the teacher-librarian profession identify strategies for influencing receptive new colleagues toward the practice of classroom-library collaboration.

If school library professionals recognize that the teacher-librarian's ability to significantly impact student achievement is contingent on effective collaboration with classroom teacher colleagues, then this study provides the profession with a novice classroom-teacher perspective on the support he or she expected and needed in the field. This information helps teacher-librarians better meet the instructional needs of classroom teacher colleagues and their learning communities. This study recommends components of preservice teacher education. More importantly for the library profession, it also points to strengths and weaknesses in the teacher-librarian community with regard to exemplary, collaborative practices in school librarianship.

Research Questions

The meaning of the word "collaboration" was critical to analyzing the data in this study. The following definition appeared on each of the four survey instruments: "Collaboration occurs when educators co-design, co-plan, co-teach, and/or co-assess curriculum-based lessons or units of study" (Appendices A, B, C, & D). The survey questions evolved as the study participants matriculated through their teacher preparation program, their student teaching experience, and their first-year of classroom teaching; each set of questions built on the questions from the previous survey. The overarching question for this study was: What are the factors that influence preservice and first-year classroom teachers' understanding and practice of classroom-library collaboration? Each of the four surveys focused on the participants' developing knowledge and practice of collaboration:

1. What were preservice classroom teachers' prior experiences with school and college libraries? When they began their teacher preparation program, what was their understanding of the roles of school librarians and their initial knowledge of and experience with classroom-library collaboration?
2. Which of the classroom-library collaboration-focused learning engagements (interventions) during their preservice education influenced preservice teachers' thinking about school library programs, the instructional role of teacher-librarians, and the benefits of classroom-library collaboration?
3. Which behaviors of teacher-librarians, preservice teachers' mentor teachers, and preservice teachers' themselves influenced the study participants' understanding and practice of classroom-library collaboration during their student teaching experience?
4. Which behaviors of the teacher-librarian, their classroom teacher colleagues, and novice teachers' themselves influenced their understanding and practice of classroom-library collaboration during their first year of classroom teaching?

In addition to framing the surveys (Appendices A, B, C, & D), these questions guided the face-to-face focus group interview that was conducted after the student teaching experience. Participants who volunteered for the focus group were asked to elaborate on their survey responses in an open-ended question and information exchange format. Through an exploration of these questions, this study explored what could be effectively taught during preservice education. It also addressed what kinds of post-preservice education experiences novice teachers needed from colleagues during student teaching and their first year in the classroom in order to perpetuate their value for and practice of classroom-library collaboration.

Review of Relevant Literature

Collaboration is a buzzword in education today. The concept and practice of teaching and learning in communities of practice is in resurgence. Educational leaders have been extolling the benefits and impact of building communities in school for years (Sergiovanni, 1994; DuFour & Eaker, 1998), and many principals today are inviting faculty to consider the importance of these practices in their work. Two recent studies focus on the potential of collaboration between preservice classroom teachers and K-12 students' families and communities to positively impact student success (Flanigan, 2004; Kidd, Sánchez, & Thorp, 2004). A significant number of studies describe collaboration between the student-teacher and mentor-teacher during the student teaching experience (Acheson & Gall, 2003; Beck & Kosnik, 2002; Graham, 1999; Phelan,

McEwan, & Pateman, 1996). To date, however, I have been unable to locate any studies that focus on the practice or efficacy of developing preservice classroom teachers' understanding of classroom-library collaboration.

Throughout their careers, educators are expected to cooperate or collaborate with grade-level colleagues, their administrators and other certified or licensed faculty, such as teacher-librarians, school counselors, speech and language pathologists, social workers, and psychologists, and families. Cochran-Smith (2004) identifies "opportunities to work with other educators in professional learning communities rather than in isolation" (p. 391) as one of the necessary conditions to retain high quality teachers in the profession. Future teachers can and should be challenged to think in terms of teaching and learning within a community of adult learners who will support and improve each other's professional work.

Like all educators, preservice teachers have been apprenticing for their profession since kindergarten. Their beliefs about teaching are generally well formed before they enter the university (Pajares, 1992). This prior knowledge affects what preservice teachers learn in their teacher preparation courses. "These preconceptions come from years and years of observing people who taught them and using this information to draw inferences about what good teaching looks like and what makes it work" (Hammerness, Darling-Hammond, & Bransford, 2005, p. 367). One of the challenges of preservice education, then, is to prompt future educators to question their preconceived notions about what constitutes effective teaching.

Cook and Friend (1995) charge university faculty with the role of modeling collaboration during teacher-preparation programs. Observing collaborative teaching can support preservice teachers who may not be aware of collaboration practiced by their own K-12 teachers, if they indeed practiced it. The idea of collaborating for instruction may be a new construct in the teaching framework of many preservice teachers. This creates a need for consciously planned instruction and well-articulated integration of information and learning experiences that highlight the part classroom-library collaboration can play in K-12 students' learning as well as in teachers' teaching and professional development.

Teacher-librarians and school library programs can be significant factors in helping students achieve. The research studies that document the positive impact of teacher-librarians and school library programs on students' achievement on standardized tests should be of interest to every educational stakeholder. In several of these studies, namely Colorado (2000), Oregon (2001), New Mexico (2002), Indiana (2004), and Illinois (2005), library program development and collaborative teaching are aspects of quality library services that can affect students' standardized test scores (Library Research Service, 2007). Classroom-library collaboration can help schools meet local, state, and national goals for student achievement.

It seems logical that if preservice teachers practiced collaboration or classroom-library collaboration during their preparation program, they would be more likely to integrate these practices into their future classroom teaching. A program in which preservice classroom teachers and preservice or practicing teacher-librarians practiced co-planning, co-implementing, and co-assessing lessons and units of instruction would be the ideal environment to promote this practice. As that was not available to the participants in this study, I required preservice

classroom teachers to collaborate with one another to develop lesson and units of instruction that included opportunities for coteaching in order to challenge the construct of teaching as interactions between a single, isolated teacher and individual or groups of students. I reasoned that, if they accommodated collaboration into their teaching construct, these preservice teachers could enter the profession prepared and experienced in this method of instructional design and delivery, and could seek to replicate this practice with teacher-librarians in the field and integrate this model into their professional work.

Description of the Research Context

There were 15 participants in this case study when it began. One dropped out of the study before completing the post-student teaching survey; 14 participants completed all four of the surveys. The participants were juniors in the 2004-2005 academic year and seniors during 2005-2006. They were enrolled in an undergraduate teacher preparation program offered by a state university in Arizona at a statewide campus in their local community. They entered the program having earned an associate's degree or two years of course credits at the community college. During their teacher preparation program, the majority of the participants were working full time outside of education. The study participants attended two years of evening classes and conducted one semester of student teaching. Before they engaged in student teaching in the spring of 2006, they experienced forty-five hours of teacher aide practicum, working in classrooms with students and classroom teachers, as part of their education coursework. All of the study participants remained in this geographic area to conduct their student teaching, and 12 out of 14 began their teaching careers in this state in the fall of 2007.

As a lead faculty for this teacher education program, I facilitated five courses for the study participants. Four of our classes met in a school library. I integrated the resources of the library into all of theses courses. I constructed collaborative learning engagements and offered classroom-library collaboration information in these students' junior writing course, their early literacy course, the elementary curriculum course, and their social studies methods course. These interventions were designed to influence study participants' values, expectations, and eventually, their collaborative teaching practices. I was responsible for helping students find classroom placements for some of their teacher aide practicum experiences. I supervised the university classroom course during their student teaching, but I had no input into the location of the study participants' student teaching placements.

My beliefs about the value of classroom-library collaboration for students, classroom teachers, teacher-librarians, administrators, and school cultures come from my graduate education in school librarianship. They also come from reading *Information Power* (AASL & AECT, 1989, 1998) and other school library literature, and from twelve years of experience as a collaborating elementary and high school teacher-librarian. I shared my values with the study participants along with the research studies that confirm what my practice has shown me—K-12 students, classroom teachers, and teacher-librarians benefit from classroom-library collaboration. I showed collaboratively designed, implemented, and assessed classroom-library lesson plans, sample student work, and gave testimonials. I shared with the study participants my belief that collaborating with my classroom colleagues transformed our teaching practices, accelerated our professional growth, and helped us provide students with high-quality, information-rich learning experiences. I believe these learning experiences propelled K-12 students forward as information literate, independent learners who understood, as they matured, the role of information in a

democratic society. For me, classroom-library collaboration is fundamental to effective 21st-century education. The study participants were clearly aware of my bias.

Interventions

During the first year of the study participants' preservice education, I integrated information, research studies, and hands-on learning experiences with collaboration into four of the study participants' courses. We deconstructed a classroom-library collaborative unit plan. I arranged for a panel discussion presentation by teams of classroom teachers, teacher-librarians, and principals. We deconstructed classroom-library lesson plans, and I shared anecdotal information about the impact of these lessons on students and educators. I co-facilitated a simulation of a classroom teacher and teacher-librarian planning session and demonstrated the resulting cotaught lesson. A complete description and data related to these interventions can be found at: http://storytrail.com/TwoHeads/Interventions.htm In addition, Table 1: How Study Participants Define the Benefits of Classroom-Library Collaboration is also linked from that Web page.

Methods of Data Collection and Analysis for the Components of this Study

The study participants volunteered to respond to three online surveys and one paper and pencil survey. The first survey was administered at the start of their undergraduate K-8 teacher preparation program as they were beginning their education coursework in their junior year. The pre-preservice education survey (Appendix A) focused on the participant's prior experiences with school and college libraries and librarians. It also accessed participants' understanding of the roles school libraries and librarians can play in instruction and their knowledge of or experience with classroom-library collaboration. In addition to closed questions, the pre-preservice education survey included an opportunity for participants to elaborate or clarify any of their responses. This invitation was offered on all four of the surveys.

At the end of the second year of the teacher preparation program, before they began student teaching, the study participants took the second online survey (Appendix B). These survey questions sought to identify which of the interventions during their teacher preparation program had made an impact on their understanding of classroom-library collaboration. Excerpts from participants' reflection journals, class papers or exams, and other written communication provided additional data beyond the questions on the first two surveys.

Participants participated in the third online survey at the end of their student teaching experience (Appendix C). This survey focused on the participants' actual practice of collaboration and their awareness of other educators' collaborative practices in the schools where they have served as student teachers. Specifically, they were asked to share if and how they worked collaboratively with the school's teacher-librarian, if their mentor teacher collaborated with the teacher-librarian, and if there were structures in place within the school schedule that provided time for classroom-librarian collaborative planning and teaching. This survey instrument and the one that followed included an open-ended question that asked respondents to provide a list of factors that influenced their decision to collaborate or not to collaborate.

Participants had the opportunity to volunteer for a focus group interview, which was audio-taped and excerpts were transcribed. Field notes were made during the group interview. The interview included open-ended questions that invited participants to go beyond the survey questions to elaborate on the personal meaning they ascribed to these the learning experiences (Rossman &

Rallis, 1998, Seidman, 1998). Focus group participants were invited to give videotaped testimonials.

Finally, the participants took the fourth and final survey after their first year of actual classroom teaching (Appendix D). The survey was provided in hard copy format via U. S. mail or electronic format via email. The questions from the third survey were repeated with the participant him- or herself as the classroom-library collaborator. The open-ended question regarding supports or constraints for collaboration was included to yield data related to the interventions participants had experienced during their preservice education.

The close-ended question responses were tabulated, and the data are shared in terms of percentages. The open-ended questions and the interview data were analyzed using the constant comparative method (Glaser & Strauss, 1967). I did not have preconceived notions about what would most influence participants' understanding and practice of classroom-library collaboration. My qualitative research goal, therefore, was "to reach a deeper understanding of the participants' lived experiences" (Rossman & Rallis, 1998, p. 85). Although this case study ultimately involved a small number of participants, their experiences shed light on the supports and obstacles experienced by novice teachers in relationship to their practice of classroom-library collaboration.

The Case Study Surveys

15 undergraduate preservice teachers completed the online pre-preservice teacher education survey in the fall of 2004 at the beginning the first semester of their teacher education program. After completing their coursework, the same 15 also took the post-preservice education survey online in December 2005. 14 of them took the two remaining surveys in May 2006 at the conclusion of their student teaching experience and in June 2007 at the end of their first full year of classroom teaching. Of the 14 who took the final survey, one had stayed at home with her baby and did not teach. Another had spent a semester abroad and conducted her student teaching while her cohort colleagues began their first year of classroom teaching. These two respondents' surveys were not included in the final survey data and analysis.

Pre- and Post-Preservice Education Surveys: Data and Analysis

On the pre-preservice education survey, the first set of survey questions was designed to access participants' experiences with libraries as K-12 students. In their own K-12 student careers, all but one student attended elementary and middle schools with libraries; all of their high schools had libraries. 87% of the participants described themselves as regular library users in elementary school. 27% reported that they regularly used the library during their middle school/junior high years, and 40% said they used it sometimes. Only 7% were regular library users during high school with 67% reporting that they sometimes used the high school library. 7% indicated that their classroom teachers always worked with their school librarians; 53% reported that they worked together sometimes. However, only 13% noted that school librarians played a key role in their own educational experience.

Except for the section described above and the intervention questions, the pre- and post-preservice education surveys were identical. This redundancy was designed specifically to determine the change in respondents' understanding of the roles of teacher-librarians and school library program in instruction. Table 2 provides a comparison between these data sets. The data

for the pre-preservice education surveys are indicated in regular font; the data for the post-preservice education surveys are shown in bold.

Table 2: Pre- and Post-Preservice Education: Questions Related to the Roles of School Librarians in Instruction, N=15 (pre) and **N=15 (post)**

Question: School librarians should be responsible for:	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
Teaching reading.	1 (7%) **1 (7%)**	3 (20%) **6 (40%)**	10 (66%) **6 (40%)**		1 (7%) **2 (13%)**
Teaching research skills.	2 (13%) **6 (40%)**	11 (73%) **7 (47%)**	2 (13%) **2 (13%)**		
Teaching every area of the school curriculum.	 **2 (13%)**	1 (7%) **4 (27%)**	7 (47%) **7 (47%)**	6 (40%) **2 (13%)**	1 (7%)

The small change in expectations for teacher-librarians to be responsible for teaching reading and research skills was troubling for me. After I taught the 8-week Literacy I course that focused on reading comprehension strategies and included a great deal of exploration of classroom-library collaboration to meet these instructional goals, the study participants participated in the 16-week Literacy II, a reading instruction course that focused more on teaching decoding skills. That course was taught by a reading specialist who served at an elementary school without a teacher-librarian. Reframing this question in terms of "reading comprehension" might have yielded different results. It is surprising that, by the end of their teacher preparation program, all of the respondents had not come to believe that teacher-librarians were responsible for teaching research skills. However, there was a 33% increase in the number of study participants who agreed when asked if teacher-librarians "should be responsible for teaching every area of the curriculum."

Table 3 shows these preservice classroom teachers' constructs related to the roles of teacher-librarians in instruction and in instructional support both before and after participating in their coursework. The pre-preservice education survey was especially important information for me as their course facilitator because I learned their preconceptions that would need to be challenged and hopefully modified or changed.

Table 3: Pre- and Post-Preservice Education: Questions Related to the Cooperative and Collaborative Roles of School Librarians, N=15 (pre) and **N=15 (post)**

Question: School librarians should	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
Help classroom teachers find materials.	6 (40%) **9 (60%)**	8 (53%) **6 (40%)**	1 (7%)		
Help classroom teachers design and plan lessons and units of instruction.	**5 (33%)**	4 (27%) **8 (53%)**	9 (60%) **1 (7%)**	1 (7%) **1 (7%)**	1 (7%)
Help classroom teachers co-teach lessons and units of instruction.	**3 (20%)**	7 (47%) **12 (80%)**	6 (40%)		2 (13%)
Assess students' learning on projects in which they have taught some or many components.	2 (13%) **3 (20%)**	9 (60%) **12 (80%)**	3 (20%)		1 (7%)
Provide in-services for classroom teachers to help improve teaching practices.	1 (7%) **6 (40%)**	6 (40%) **7 (47%)**	7 (47%) 0		1 (7%) **2 (13%)**
School librarians should help classroom teachers learn new technologies.	3 (20%) **8 (53%)**	8 (53%) **5 (33%)**	3 (20%) **1 (7%)**		1 (7%) **1 (7%)**

The most significant change in these preservice classroom teachers' perception of the role of classroom teachers was in the areas of co-designing, co-planning, and co-teaching lessons and units of instruction. Their surveys indicated a high level of understanding of the role of teacher-librarians as instructional partners. They raised their expectation for materials support from the teacher-librarian These data also indicated that these preservice teachers came to see teacher-librarians as support for professional development by providing in-services for classroom teachers to help them improve teaching practices.

Table 4 provides data related to questions about library programs, principal support, and the impact of classroom-library collaboration on student achievement.

Table 4: Pre- and Post-Preservice Education: Questions Related to the Library Programs, Principal Support, and Student Achievement, N=15 (pre) and **N=15 (post)**					
Question:	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
School library programs should be a critical part of the literacy program of the school.	9 (60%) **13 (87%)**	5 (33%) **2 (13%)**	1 (7%)		
School principals should set the expectation for classroom-library collaboration.	4 (27%) **4 (27%)**	7 (47%) **10 (66%)**	2 (13%) **1 (7%)**		2 (14%)
When school librarians and classroom teachers collaborate for instruction, student achievement should increase	9 (60%) **13 (87%)**	5 (33%) **2 (13%)**	1 (7%)		

At the end of their preservice teacher education, 87% of the study participants' strongly agreed that student achievement should increase when classroom teachers and teacher-librarians collaborate for instruction. The final question on the pre-preservice education program survey asked participants they had seen classroom teachers and school librarians collaborating for instruction. 9 or 60% of the respondents said they had not, 4 or 27% said they had seen classroom-library collaboration; and 2 or 13% answered "don't know."

Table 5 provides the data from post-preservice education survey questions related to the university classroom interventions.

Table 5: Post-Preservice Education: Questions Related to University Classroom Interventions Related to the Practice of Classroom-Library Collaboration, N=15					
Question: During my preservice education,	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
The texts I read about classroom-library collaboration influenced my thinking about the role of teacher-librarians.	8 (53%)	6 (40%)	1 (7%)		
Guest speakers' testimonials about classroom-library collaboration influenced my thinking about the role of teacher-librarians.	9 (60%)	6 (40%)			
The instructor's testimonials about classroom-library collaboration influenced my thinking about the role of teacher-librarians.	11 (73%)	4 (27%)			
My own experience collaborating with classmates on assignments increased the value I place on collaboration.	12 (80%)	2 (13%)	1 (7%)		
My own experience collaborating for instruction with a classmate during my practicum increased the value I place on collaboration.	8 (53%)	5 (33%)	2 (13%)		
My own experience collaborating for instruction with a mentor teacher during my practicum increased the value I place on collaboration	4 (27%)	7 (46%)	1 (7%)		3 (20%)
My own experience collaborating for instruction with college instructors increased the value I place on collaboration.	6 (40%)	7 (46%)	1 (7%)		1 (7%)

All of the participants "agreed" or "strongly agreed" that the classroom-teacher/teacher-librarian/principal panel was an effective way to influence their thinking about classroom-library collaboration. Their own experiences of collaborating with classmates on assignments and in their teacher-aide practicums were also significant influencers as were the instructor's testimonials. It is interesting to note that collaborating with the mentor teacher during practicums was the least influential of these measures. It may be that some practicing mentor teachers did not possess highly-developed collaborative skills or a value for this practice. In a culminating question about collaboration experiences, 67% said they "strongly agreed" that collaboration experiences during their preservice education increased the likelihood that they would engage in classroom-library collaboration. The remaining 33% "agreed."

Post-Student Teaching Survey: Data and Analysis

In the post-student teaching survey, study participants were asked to answer questions based on their actual experience serving in the apprentice teacher role. In this survey, the response choices changed from the "strongly agree" to "strongly disagree" ranking system of the first two surveys to a "yes," no," "don't know," or "not applicable" response. 13 students completed this survey in May, 2006. One student who completed her student teaching in the fall of 2006 took the survey in December, 2006.

Chart 1 shows the level of school library staffing support and program schedules at the schools where the study participants conducted their student teaching.

Chart 1: Level of Professional Staffing in Student Teaching School Placements, N=14				
Full-Time Certified Teacher-Librarian	Half-Time Certified Teacher-Librarian	Paraprofessional Serving in the Role	No Library	Fixed Library Schedule (All Elementary)
8	2	3	1	12

The respondents conducted their student teaching experiences in schools with libraries with varying levels of professional staffing; one conducted student teaching in a school without a library. (It should be noted that Arizona is the state with the highest percentage of charter schools. The vast majority of those schools do not have libraries on their campuses. This fact had an impact on this survey and a significant impact on the final survey.) 13 out of 14 of the participants in the study conducted their student teaching semester is elementary schools. All of these schools with library programs were organized on a fixed schedule in which classes had a specific time to visit the library each week. The only flexibly scheduled program was the single middle school library.

Table 6 details the study participants' post-student teaching responses to questions related to the cooperative and collaborative roles of the teacher-librarian.

Table 6: Post-Student Teaching Survey: Questions Related to the Cooperative and Collaborative Roles of Teacher-Librarians, N=14				
Question: During my student teaching experience,	Yes	No	Don't Know	Not Applicable
The teacher-librarian was responsible for teaching reading.	1 (7%)	10 (72%)		3 (21%)
The teacher-librarian was responsible for teaching research skills.	6 (43%)	5 (36%)	2 (14%)	1 (7%)
The teacher-librarian was an educator responsible for teaching every area of the school curriculum.		11 (79%)	2 (14%)	1 (7%)
The teacher-librarian helped classroom teachers find materials.	9 (64%)	4 (29%)		1 (7%)
The teacher-librarian helped me design and plan a lesson, lessons and/or a unit of instruction.		13 (93%)		1 (7%)
The teacher-librarians co-taught lessons or units of instruction with me.	1 (7%)	12 (86%)		1 (7%)
The teacher-librarian assessed students' learning on projects for which she/he taught one or more components.	1 (7%)	12 (86%)		1 (7%)
The teacher-librarian provided in-service training and offered other forms of professional development for me and/or other classroom teachers.	2 (14%)	10 (72%)	1 (7%)	1 (7%)
The teacher-librarian helped me or other classroom teachers learn new technologies.	1 (7%)	11 (79%)	1 (7%)	1 (7%)
I observed or heard that other classroom teachers collaborated with the teacher-librarian.	1 (7%)	12 (86%)		1 (7%)

13 out of 14 respondents, or 93%, reported that they did not collaborate with their teacher-librarian during their student teaching. No one in this study co-planned a lesson or unit of study with a teacher-librarian. Only one reported that the teacher-librarian assessed student work, and only one reported that the teacher-librarian co-taught a lesson or unit of study with him/her. 64% of the participants in the study noted that the teacher-librarian cooperated with them by helping them find materials. One reported that the teacher-librarian taught her to use new technologies.

Table 7 shows data related to the library program, principal support, and student achievement.

Table 7: Post-Student Teaching Survey: Questions Related Library Programs, Principal Support, and Student Achievement, N=14				
Question: During my student teaching experience,	Yes	No	Don't Know	Not Applicable
The school library program was a critical part of the literacy program of the school.	6 (43%)	7 (50%)		1 (7%)
The school schedule provided time for classroom-library collaboration.	3 (21%)	10 (72%)		1 (7%)
The principal at the school where I did my student teaching established an expectation for classroom-library collaboration and to provide planning time/support for collaboration.		9 (64%)	4 (29%)	1 (7%)
I noticed that student achievement increased when I collaborated with the teacher-librarian.	2 (14%)	4 (29%)		8 (57%)

Only 3 school schedules provided classroom-library collaborative planning time during the school day, and none of the principals established an expectation for classroom-library collaboration. Only one respondent reported collaborating with the teacher-librarian, but two reported that student achievement increased when they collaborated with the teacher-librarian. It is surprising that 43% still felt that the school library program was a critical part of the literacy program at the school.

Post-Student Teaching Open-ended Question, Focus Group Interview, and Individual Testimonials: Data and Analysis

The online survey allowed participants to contribute as much information as they wanted in open-ended question dialogue boxes. I used a constant comparative coding method to analyze these data. An overarching concern during student teaching was the feeling of being rushed and overly busy. Study participants came face-to-face with standards-based lesson requirements, the impact of standardized testing on their instructional decisions, and the time they could allot for various aspects of instruction. As one participant wrote, "There is so much curriculum in those required textbooks that there is little time left to do much else." Another said, "Since everything was new to me, I know that I haven't taken advantage of many of the things that [were] probably available to me."

Beyond the sense of being overwhelmed, the participants noted that the most frequent interactions with teacher-librarians were around acquiring resources for their teaching. Many commented on the support they felt when the teacher-librarian recommended and provided them with books and other materials to shore up their lessons and units of instruction. When commenting on the teacher-librarians' work with students, most respondents mentioned read alouds as the primary content of weekly library lessons. Three mentioned support for students' research projects, but that support did not include collaborative planning or coteaching. One admitted that she didn't know what students did in the library because she did not stay with her class. One said, "I felt the librarian was there strictly for students, not for the teachers!!!" Another wrote, "I do not believe that the school where I did my student teaching is aware of or would encourage classroom-library collaboration."

Study participants were invited to participate in a small group focus interview after they completed the post-student teaching survey. 8 people participated. The focus group session was audio-taped and transcribed. The discussion began with the survey questions selected for Table 6 and 7. Participants responded to the questions as well as to each other's comments. Several noted that there was no formal time during the school day for collaboration with colleagues. One person noted that this was a problem with the fixed schedule: the teacher-librarian was never "free." As a result of personality conflicts, the librarian's inexperience or qualifications, or scripted reading programs, several noted that their mentor teachers did not think the library had much to offer.

Many noted that "library time" was a "special" for which they were not responsible and that they had no real knowledge of what children did in the library. The exception was the person who student taught at the middle school level. Although she pursued the teacher-librarian at first, that teacher-librarian responded to her needs, taught her to use library software, and later sent her materials without being asked. She could talk with the teacher-librarian during her planning period during the school day, and she actually took her students to the library for instruction in research. She did not, however, collaboratively plan or coteach with the teacher-librarian.

All 8 participants were invited to provide testimonials on their experiences. 5 of the 8 volunteered. I videotaped their responses to questions that were raised during the small focus group. Respondents talked about which interventions during their preservice education helped them value classroom-library collaboration as well as their actual experiences while working in the field during student teaching. Those questions and their testimonials can be accessed online at: http://storytrail.com/TwoHeads/Post_Student_Teaching_Testimonials.htm

Post First-year Classroom Teaching: Data and Analysis

14 respondents returned the post-first year classroom teaching survey. Two of the study participants did not conduct their first year of classroom teaching in the 2006-2007 school year so their responses were not included in these data. Of the 12 remaining, 11 study participants taught at the elementary level; one taught at a junior high school.

Chart 2 shows the staffing and library schedules in the schools where study participants taught their first year.

Chart 2: Level of Professional Staffing and Type of Schedules in First Year of Classroom Teaching Schools, N=12

Certified Teacher-Librarian	Paraprofessional	No One in the Role/No Library	Fixed Library Schedule
7	2	3	6

All three of the participants whose schools did not have libraries served at charter schools. Two first-year teachers served in the same elementary school; that school had a flexibly scheduled library program as did the one middle school where one participant taught. The remaining six (elementary) school library programs operated on a fixed schedule; two of those had paraprofessionals serving in the teacher-librarian role. (Note: In Arizona, staffing school libraries with a certified professional is a district-level decision; there is no state-level requirement.)

Table 8 provides data related to the cooperative and collaborative roles of teacher-librarians. The data of the 3 respondents who taught their first year in charter schools without libraries and therefore, without teachers librarians are included in the tables that follow.

Table 8: Post-First Year Classroom Teaching Survey: Questions Related to the Cooperative and Collaborative Roles of Teacher-Librarians, N=12			
Question: During my first year of classroom teaching, the teacher-librarian	Yes	No	Don't Know
Was responsible for teaching reading.		10 (83%)	2 (17%)
Was responsible for teaching research skills.	6 (50%)	5 (42%)	1 (8%)
Was an educator responsible for teaching every area of the school curriculum.		10 (83%)	2 (17%)
Helped classroom teachers find materials.	10 (83%)	2 (17%)	
Helped me design and plan a lesson, lessons and/or a unit of instruction.		12 (100%)	
Co-taught lessons or units of instruction with me.	2 (17%)	10 (83%)	
Assessed students' learning on projects for which she/he taught one or more components.		12 (17%)	
Provided in-service training and offered other forms of professional development for me and/or other classroom teachers.	3 (25%)	7 (58%)	2 (17%)
Helped me or other classroom teachers learn new technologies.	2 (17%)	9 (75%)	1 (8%)

Even though these first-year classroom teachers entered schools with a predisposition to value and seek out classroom-library collaboration, only 3 of them experienced it in their first year of teaching. 25% reported that they observed or heard that other classroom teachers collaborated with the teacher-librarian; two of these three taught in the same school. In their view, only 50% of teacher-librarians were responsible for teaching research skills and none were responsible for teaching reading. 25% said their teacher-librarian offered in-service training or other professional development opportunities; only 2 respondents, or 17%, learned new technologies from their teacher-librarians. 83% of the study participants reported that the teacher-librarian helped them find materials. Using the criteria set out in *Information Power: Building Partnerships for Learning* (AASL/AECT, 1998), only two school libraries worked within the guidelines for quality programs established by the national association.

Table 9 provides additional data from the first year of classroom teaching survey.

Table 9: Post-First Year Classroom Teaching Survey: Questions Related to Library Programs, Principal Support, and Student Achievement, N=12			
Question: During my first year of classroom teaching,	Yes	No	Don't Know
The school library program was a critical part of the literacy program of the school.	7 (58%)	5 (42%)	
The school schedule provided time for classroom-library collaboration.	3 (25%)	9 (75%)	
The principal set the expectation for classroom-library collaboration.	1 (8%)	9 (75%)	2 (17%)
I noticed that student achievement increased when I collaborated with the teacher-librarian.	1 (8%)	6 (50%)	5 (42%)

Just one respondent noted that the principal set the expectation for classroom-library collaboration. Only 3 reported that collaborative planning time was part of the school day; two were in the same elementary school, one was at the middle school. Although they all agreed or strongly agreed on their post-preservice education surveys that student achievement should increase when teacher-librarians and classroom teachers collaborated for instruction, only one of them had this actual experience in the field. Even with this low level of library program integration, 58% reported that the library was a critical part of the school's literacy program. From my perspective, that of someone who advocates for the collaborative teaching role of teacher-librarians, these findings are especially troubling.

Post-First Year of Teaching Survey Open-ended Question: Data and Analysis

The final question on the post-first year teaching survey was: "Please list as many of the factors as possible that account for your involvement in a classroom-library collaboration or for your lack of a classroom-library collaboration experience" (Appendix D). I used the constant comparative method to analyze these data.

There were 3 first-year classroom teachers who reported collaborating with their teacher-librarian, one at elementary level and one at middle school. One elementary classroom teacher described two research projects in which the certified teacher-librarian, working with a flexible schedule, took a prominent teaching role by working with small groups of students on a rotating basis to help them "research information and organize it with a graphic organizer." This teacher then guided the children in composing rough drafts and reported that "the teacher-librarian helped me a great deal with my weakness of teaching writing." Another first year teacher who taught in the same school and worked with the same teacher-librarian noted that the teacher-librarian responded to her requests for collaboration by presenting her with lesson plans related to the topics the class was studying. The teacher-librarian then worked with this teacher's students in small groups. The second teacher noted, "It would have been helpful to co-write [lesson] plans."

The other collaborating first-year elementary teacher, who served with a professional teacher-librarian, reported that initiating classroom-library collaboration was "dependent on the classroom teachers." In this school, classroom teachers were not required to stay in the library with their students, but this first-year teacher elected to do so on occasion. This teacher reported that she appreciated the teacher-librarian for asking what the students were learning and "tailoring her lessons towards that most of the time!" (This teacher-librarian provided mini-lessons to students every other week.) This new teacher also noted that she worked with her teacher-librarian on one research project during her first year of classroom teaching; she did not provide details. This teacher-librarian and the middle school teacher-librarian were two of the three that provided inservice professional development for classroom teachers.

The first-year middle school teacher reported that working with the teacher-librarian made her lessons "more interesting and relevant for students." She appreciated being able to get the students "out of the classroom into a different environment." This teacher also noted that she did not collaborate with her teacher-librarian more often because "too many classes were using the library" and "the librarian was overworked." This person noted that learning about collaboration during her preservice teacher education was one factor that accounted for her involvement in classroom-library collaboration.

2 of the remaining 3 study participants, who served with certified teacher-librarians, taught in the same school. Their library was staffed by two half-time, teacher-librarians. Their students were given 30-minute weekly library lessons. Both reported being assigned to the same librarian who "is bitter and unapproachable" and "has retired every year for three years... and will be back again next year!" Each one hoped to be assigned to the other teacher-librarian during their second year of teaching at the school.

The other classroom teacher who served with a professional teacher-librarian reported that the lack of time to talk with their teacher-librarians prevented her from engaging in classroom-library collaboration. She pointed to a general lack of planning time in the elementary school day and to the fixed library schedule as barriers to collaboration.
The two respondents who served with paraprofessionals noted that these people were not qualified "to teach curriculum" and that the "lack of resources" didn't make the library particularly useful. One wrote, "No one (teacher) that I have worked with has ever worked [collaborated] with a teacher-librarian. They are shocked that such a thing exists! There seems to be no importance placed on the library and its staff and their possible role in students' reading and learning. What a huge loss." Along with the charter school classroom teachers who did not have the benefit of school libraries or teacher-librarians, these respondents' answers pointed to woefully inadequate state- and district-level school library staffing policies and did not shed light on the practice of classroom-library collaboration.

Similar to the post-student teaching survey, this final survey showed that interventions about classroom-library collaboration conducted in the university classroom predisposed novice teachers toward expecting to work as collaborative partners with teacher-librarians. Still, what happened when they arrived at the schoolhouse had a great deal more to do with the qualifications, practices, and personality of the teacher-librarian and the supports or constraints placed on classroom-library collaboration by the library schedule than did classroom teachers' prior learning about

collaborative practices. It may very well be that further study of the careers of these classroom teachers could reveal the latent effect of their preservice learning but that is beyond the scope of this work.

Conclusion

It seems to make sense that introducing preservice classroom teachers to the benefits of classroom-library collaboration and making a case for implementing this model through practice could speed its institutionalization. Helping preservice teachers to collaborate effectively in their preservice teacher education programs should prepare them for collegial work in schools and for career-long development as professionals. Whether those collaborations are with grade-level colleagues, teacher-librarians, specialists, or other school faculty, staff, and families, the interventions set out in this study will serve novice teachers well. "Working together in communities, both new and more experienced teachers pose problems, identify discrepancies between theories and practices, challenge common routines, draw on the work of others for generative frameworks, and attempt to make visible much of that which is taken for granted about teaching and learning" (Cochran-Smith & Lytle, 1999, p. 293). Working well in collaborative communities of practice is good for educators, and it's good for students.

However, this case study suggests that there are significant constraints in school learning communities and in the practice of teacher-librarianship that prevent classroom-library collaboration. The lack of a library or of professional staff limited classroom teachers' access to resources, co-planning, and co-teaching. Fixed scheduling in elementary schools was noted by study participants as a barrier to collaborative planning and teaching. Although the participants may not realize the impact of their response, only one of them reported that a school principal set an expectation for classroom-library collaboration. When this practice is not an accepted and expected aspect of school culture, there is less of a likelihood that it will occur.

Although teacher-librarians "must become proactive in articulating their roles, [and] they must also be ready to explain how their programs are related to education reform initiatives and to the skills students will need to succeed in the twenty-first century" (Shannon, 2002), they must also be ready to do the hard work of administering effective school library programs. Advocating for and achieving flexible scheduling and collaborative planning time are essential if teacher-librarians expect classroom teacher colleagues to value the role of teacher-librarians in instruction. These supports simply must be in place if educators are to co-plan, co-teach, and co-assess classroom-library lessons and units of instruction.

While there is agreement that students and teachers must achieve a high level of literacy and should excel at information problem-solving, it is not as widely accepted that classroom-library collaboration is among the most effective strategies for teaching literacy and information literacy standards. Collaborative learning and teaching experiences, supported by the research on the positive relationship and impact of classroom-library collaboration on student achievement, have not yet reached critical mass and succeeded in privileging this practice. The lack of requirement for professional teacher-librarians and libraries in all schools and the lack of understanding of classroom-library collaboration on the part of school principals put classroom teachers at risk of not integrating classroom-library collaboration into their professional work.

The Japanese concept of *jugyou kenkyuu*, or lesson study, has proven to be effective in achieving school improvement in that country (Marzano, 2003). This type of job-embedded professional development involves teams of educators field testing specific techniques and observing each other doing so in their own classrooms. Team members then provide one another with feedback and recommendations for modifications for teaching with those techniques in the future. Classroom-library collaboration can support this model without creating the need to hire substitute teachers to release colleagues so they can observe one another's teaching. The teacher-librarian's opportunity to impact colleagues' practices while they improve their own is a little acknowledged or studied potential of the profession. This is one way classroom-library collaboration can be of service to new educators in particular and to school learning communities in general.

The rapid-fire change of 21st-century life in the United States impacts our schools. Novice as well as veteran teachers need and will continue to need support for negotiating changing curriculum, instructional practices, and policies. In school restructuring, the most powerful impediment to reform is teacher isolation (Lieberman, 1995, p. 10). The organic nature of the classroom-library collaboration model offers the potential for on-site professional development integrated into the daily practice of classroom teachers and teacher-librarians (Moreillon, 2007). Leaders in school improvement and staff develop acknowledge that opportunities to field test new teaching strategies are critical to their adoption by classroom teachers (Marzano, 2003). Classroom-library collaboration can provide effective job-embedded professional development because feedback and ideas can be exchanged between two (or more) professional colleagues as they co-teach and co-assess new instructional strategies.

Decrying classroom teachers' lack of understanding of the value of classroom-library collaboration is pointless if school library programs and teacher-librarians are unable to provide instructional partnerships. Structures, such as flexible scheduling, joint planning time, and an expectation for collaborative work, must be in place before educators can actualize these values in their teaching practices. Changing these disabling factors should therefore be at the forefront of teacher-librarians' advocacy for the efficacy of the profession.

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List of Appendices

Appendix A: Pre-Preservice Education Survey, Available from http://storytrail.com/TwoHeads/presurvey.pdf

Appendix B: Post-Preservice Education Survey, Available from http://storytrail.com/TwoHeads/postsurveypreservice.pdf

Appendix C: Post-Student Teaching Survey, Available from http://storytrail.com/TwoHeads/postsurveystudentteaching.pdf

Appendix D: Post-First Year Teaching Survey, Available from http://storytrail.com/TwoHeads/postsurveyfirstyearteaching.pdf

Predictors for Success: Experiences of Beginning and Expert Teacher Librarians

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The current research examined the experiences of beginning teacher librarians (TL) and expert TLs to ascertain the factors that predict practitioner success. In the process, the study compares southern California TLs (and their academic preparation) with the experiences of TLs in other representative countries (e.g., Australia, Brazil, Canada, European Union, South Africa, Hong Kong, and Singapore). Factors were identified that link to TL preparation, with the intent of determining: 1) at what point in the academic-practice continuum identified skills, knowledge, and dispositions should be addressed; 2) what pre-service and in-service activities optimized learning. The investigator also uncovered universal and culturally determined practices.

Problem Statement

The teacher librarian preparation program has as its charge to prepare candidates to serve as successful teacher librarians in K-12 settings. While the intent is not to prepare them merely for their first job, the program does try to optimize the experiences of beginning practitioners. As such, part of that preparation may include field experience. Nevertheless, the first couple of years can be difficult, particularly if the TL's original expectations do not match the realities of day-to-day work or do not mesh with the school's existing values and norms.

Particularly since the profession predicts a surge of librarian retirements in the near future, it is imperative that those candidates who enter the profession will be successful, and will remain as TLs for the foreseeable future.

This study examined the academic preparation, predispositions, initial job experiences, and professional development opportunities of beginning TLs and expert TLs to ascertain possible predictive factors that can foster effective TLs.

Literature Review

The literature review drew upon the standards, academic preparation, career choice, and in-service experiences of TLs. Because their functions largely overlap those of classroom teachers and educational administrators, literature from these related fields were also examined.

Standards, Competencies, and Academic Preparation

Standards for pre-service librarians exist at state, national, and international levels. The International Federation of Library Associations and Institutions (2000) developed guidelines for library programs, which focuses on the management and use of information within systems. In 2002, the National Council for Accreditation of Teacher Education, in collaboration with the American Association of School Librarians, established student outcomes for school library

media preparation programs in the following areas: using information and ideas, teaching and learning, leading and collaboration, program administration. Most standards and library education programs incorporate theory, practice, and field experience.

Nevertheless, in reviewing the literature of the education and competencies of TLs in the United States, Shannon (2002) discovered a complex and sometimes conflicting picture; although resource management remained a constant, an increased need for technological and leadership skills became apparent, while instruction and collaboration skills were perceived unevenly. McGracken's 2000 survey indicated that TL's main roles were self-reported to be as information specialists and then as program administrators; instruction was less important, partly because of school community expectations. In surveying TL practitioners in Georgia, McCoy (2001) found that administration, information access and delivery, and collection development were core competencies; technology was less well defined. In a Northwest United States study of faculty, candidate, and administrator perceptions of ideal beginning TLs, the consensus was that the person should be able to work well with others, and have strong technical and managerial skills (Roys & Brown, 2004). Likewise, the summer 2006 issue of the *Journal of Education for Library and Information Science* included five papers about library education in Asia; the authors found that management and information /communication technologies were core elements, but great variability in education and other projected competencies existed; moreover, little attention was paid to TLs. Although academic experiences vary, several studies concur that prior successful academic librarianship preparation is key for workplace success as a TL (Oberg, 1991; Shannon, 2002; Cochran-Smith, 2004).

Career Decisions and Dispositions

Certainly, individual attributes and situational realities impact career choice and subsequent actions. TLs bring a wide variety of career paths and expertise as do many classroom teachers. In their study of beginning teachers, Chin and Young (2007) created an ecological model of development, which captured factors related to choosing a teaching career and certificate program. Six distinct personnel clusters emerged from their analysis: compatible lifestylists (teaching fit their family lifestyle), working-class activists (first-generation college students with a strong sense of service), romantic idealists (younger, reform-minded, wanting self-fulfillment in their job), family tradition followers, second-career seekers, and career explorers (males seeking additional credentials). These clusters echo the attitudes of TLs, although it is not clear which cluster would reflect those TLs who worked in other library settings.

Independent of their career motivation, some librarians are more likely to be satisfied with their jobs than others. Williamson, Pemberton, and Lounsbury (2005) collected personal data from 1500 librarians to reveal with emotional resilience, work drive, and optimism were significant predictors of career and job satisfaction. Oberg (1995) identified several personal attributes that were indicators of career success: leadership and collaborative skills to create and communicate a vision, self-confidence and self-knowledge for supervising, negotiating, and collaborating; ability to learn from role models; understanding of change processes; advocacy skills.

In-Service Experiences

Having realistic expectations of the job was another predictor for work and career satisfaction (Person, 1993; Johnson & Birkeland, 2003; Graziano, 2005). This understanding was largely dependent on prior experience working in libraries (Oberg, 1991; Macmillan, 1998; Domeracki, 2002; Yonyz & McCook, 2003). While academic preparation programs intend to prepare TLs, on-the-job expectations can differ significantly from idealized ones (Kinard, 1991; Oberg, 1991; Person, 1993; Gwatney, 2001). TLs without prior work experience often had preconceptions about their work functions that reflected current professional standards, but found that their actual duties were less professional, which led to job dissatisfaction (McCracken, 2000; McCoy, 2001). Part of the problem resides in the school's expectations of TLs, which might not be informed based on current TL standards and best practices (Kinard, 1991; Kuhlthau, 1993; Cochran-Smith, 2004). That same phenomena happens in university settings, where teaching faculty value libraries more for their reference work than for their contributions to teaching (Manuel, Beck & Molloy, 2005).

Little research about first year experiences of TLs has been conducted. Because the TL's job description has elements of a variety of other positions, the literature review was broadened to examine the experiences and challenges of first year classroom teachers and administrators. The induction activities (i.e., district-based in-service training for clear teaching credentials and library media teachers) described for these professional groups were also examined and adjusted to serve the purposes of supporting new library media teachers.

Cochran-Smith (2004) noted the importance of retention. While many people enter the teaching profession for idealistic reasons, such lofty goals will not keep them in the field without successful school conditions, site support, opportunities for professional learning communities, and advancement prospects. Johnson and Birkeland (2003) echoed this retention issue in their study of new teachers' career decisions. They mentioned the need for stable and orderly work environments, adequate resources, reasonable workload, and dependable advice and support from colleagues. In their review of recent empirical literature about teacher retention, Guarino, Santibanez, and Daley (2006) noticed that urban, low-performing schools had higher attrition rates. Schoolers with higher proportions of minority and low-income student populations also had higher attrition rates. In surveying TLs' perceptions of school climate throughout their first year, Domeracki (2002) discovered perceptions became less positive, as did job satisfaction.

In examining site-based factors, several indicators were identified as potential predictors of success. A professional school climate with a positive and focused vision was positively correlated with job performance and satisfaction (Oberg, 1991; Slygh, 2000; Vereen, 2002; Graziano, 2005). Peterson and Deal (2002) identified school cultural elements that foster positive thinking and action: norms of collegiality that encourage sharing issues and resources, norms of performance that encourage a strong work ethic, norms of improvement that encourage self-improvement, a shared sense of purpose and a shared sense of responsibility for student learning. In comparing beginning teachers in highly structured and "co-constructive" schools, Achinstein, Ogawa, and Speiglman (2004) found that a collaborative climate where beginning professionals are given autonomy and expected to be creative led to higher performance and greater job satisfaction. Similarly, Kuhlthau (1993) asserted that team-oriented, constructivist school climate led to success. In parsing school climate factors, Zhang, Verstegen, and Fan (2006) identified participation in decision-making as the strongest positive relationship with teacher job

satisfaction. Gagnon (2004) noted that new TLs need a school climate in which they can express their feelings, thus reducing stress. In short, having a "voice" is important for beginning TLs.

Support by the principal and other personnel is also crucial to TL success. (Achinstein, Ogawa, & Speiglman, 2004; Graziano, 2005; Slygh, 2000; Vereen, 2002). Gagnon (2004) noted that principals organize and structure the school environment. Similarly, Oberg (1995) asserted that principals help beginning TLs achieve by explain library services to the school community, demonstrating personnel commitment to library services, and providing the resources and structures to facilitate library program success. It should be noted that beginning teachers sometimes perceive that the principal gave less support than the principals thought they gave (Oberg, 1995; Ingram, 2002). Part of that support includes providing and encouraging professional development opportunities (Oberg, 1991; Dumas, 1994; Johnson, 2002; Hook, 2003; Achinstein, Ogawa, & Speiglman, 2004; Graziano, 2005). Clagg (2002) cautioned that staff development, *per se*, does not impact teacher retention; professional development needs to be immediately applicable to their practice; personal mentoring programs are more effective than standardized in-services. Smith and Ingersoll (2004) emphasized the need for collection induction activities such as planning and collaboration in these induction programs.

Background Theories

Three theoretical strands provided valuable conceptual models for this investigation: competency theory, change theory, and contingency theory of socialization. The first focused on the individual's expertise, the second focused on decision-making and behavior, and the third focused on interpersonal relationships.

Competency Theory

Dreyfus (2004) posited five levels of adult skill acquisition, from notice to expert. The novice can follow directions, but cannot succeed independently; they need to understand the underlying principles and context of the skills. The advanced beginner practices skills, applying them to real situations, and is given additional examples in order to analyze new situations. Competent adults develop schema to help them decide how to apply their skills, identifying important elements for planning. Proficient adults leverage their emotional involvement to make situational decisions quickly rather than having to weigh each factor abstractly. Since situations may differ widely, with accompanying factors changing relative importance, competent and proficient adults may still make mistakes because they are unlikely to anticipate all consequences. Experts have a wide repertoire of skills and experiences, and can make discriminating decisions that take into account nuanced subclasses of situations. In their discussion of master teachers, Ambrose and Bridges (2005) asserted that, among things, expert faculty understand students "in multiple ways that represent the complex human beings they are," including their cultural and historical context (5).

Van Manen's (1977) levels of reflectivity offered a developmental approach to teacher competency. Beginning teachers reflected technical rationality: technical application of skills; next, they reflected practical action: clarifying assumptions while addressing educational consequences; ultimately, they displayed critical reflection: concerned with knowledge and its context. Focusing on first-year teachers' experience, Short (2003) found that new teachers focused more on their own actions than on their students' learning, and Richardson (2003) noted

how structured mentoring program helped first year teachers transition from self-concern to concerns about effective instruction, manifesting Van Manen's model.

In the process of learning, adults also tend to progress from passive receiver of information to engaged reflective learner (Ericsson & Charness, 1994). In his review of the literature on workplace learning, Smith (2003) concluded that skill development beyond the procedural level requires human guidance and opportunities for action learning. Nevertheless, scaffolding is needed to construct goals and strategies that will lead the beginning TL through a problem space. The need for timely feedback needs to be part of this socially-contextualized experience in order to enable pre-service and beginning TLs to make appropriate changes. These findings reinforce the concept of structured service learning and field experience in TL preparation programs.

Belenky and Stanton (2000) focused on affective epistemologies of knowledge formation in relation to constructive teaching. They identified the following stages:

- silence: not seeing oneself as a learner, having a sense of powerlessness to change
- received knowledge: learning by listen to outside authority, a sense of one truth
- subjective knowers: learning by using procedures for finding the truth
- separate knowers: critical discernment, comprehending the affective domain, recognizing oneself in others
- connected knower: active construction of knowledge
- constructive knower: select and integrate a large repertoire of processes, cultivate range of abilities in others.

The researchers also recommended that pre-service academic faculty diagnose the stages of their teacher candidates, and provide developmentally appropriate learning activities to help candidates bridge to the next higher level.

Perrone's study of librarian expertise (2004) focused on the transition from competent to expert librarian, building on Berliner's 1994 research about exemplary performance. As librarians practice repeatedly, they need to exert less effort, but they also are less likely to be learning. It normally takes over 10,000 hours, or about five years, to optimize the opportunities of different situation to gain true domain-specific expertise that is manifested in flexible pattern-finding and quick, efficient problem-solving. However, if librarians focus on performance alone, they may well stay at the competent level. Dall-Alba and Sandberg (2006) echoed this possibility, defining two dimensions of professional development: improved skills (the competency level) and embodied understanding of practice (the "big picture"); beginners tend to focus on the former, but as they practice they may shift to the other perspective.

Dweck's 2006 research on self-theories offered one possible explanation for this gap between competency and expertise: a fixed mind-set vs. a growth mind-set. The former attitude assumes that intelligence is fixed; these individuals prefer lower-effort success and want to outperform other. The latter attitude assumes that intelligence is malleable and incremental; these individuals love learning, seek challenges, value effort, and persist despite obstacles. When faced with failure, the former are likely to think that results are out of their control and will try less; the latter want to master the situation, and will take a longer-term perspective.

Attribution theory is a related set of principles concerned with competency. In this theory, individuals attribute their success or failure to internal or external causes. If the cause is

stable, there is little chance for change; if the cause is unstable, the outcome might be situational so that eventual change is possible. Likewise, the locus of control impacts success; if the individual feels that he or she can control the situation, then there is hope for eventual success even in the midst of immediate difficulties (Weiner, 1986).

Self-perception and self-confidence also impact competency. Bandura (1997) asserted that "perceived self-efficacy is concerned with judgments of how well one can execute courses of action required to deal with prospective situations" (122). Self-efficacy is reflected in one's choices of actions and situations, one's persistent efforts in overcoming obstacles, one's feelings of stress and anxiety (Schmidt, Kosmoski & Pollack, 1998). Individuals with high self-efficacy are likely to perform and cope better than individuals with low self-efficacy. For example, Nahl (2005) investigated the influence of affective variables in using the Internet. She found that high self-efficacy and optimism counteracted feelings of frustration and irritation in challenging Internet tasks; additionally, high affective coping skills led to lower uncertainty and greater acceptance of technology systems.

In a similar vein, Collins (2005), known for his work on helping institutions go from good to great, identified level 5 leadership (effective expert) as combining professional will and personal humility with ambition for their institution's success; these leaders set high standards for themselves and others towards that end, and find ways to produce long-term results. He asserts that level 5 leaders know and leverage their strengths, their motivations, and their passions.

Charter (1982) discovered that identified exemplary TLs were extroverted independent leaders and learners. Comparing beginning and experienced TLs, Oberg (1995a) found that experienced TLs had stronger professional networks, and were committed to ongoing professional education, mentoring, advocacy, and policy development.

Change Theory

Beginning TLs experience significant change as they transition from one role to another: either from a classroom teacher, other type of librarian, or a student to the role of a TL. They need to change both their behavior and their attitudes. This change involves both internal factors as well as interactions with external factors (e.g., school culture and norms).

Fiske (1980) focused on middle and later life changes, which applies to the career ladder of the majority of TLs. Fiske identified four dimensions of adult self-concept: interpersonal, altruistic, master, and self-protectiveness. Individuals differ in the attitudinal and behaviorial degrees of commitment to these dimensions, and they change their priorities over time. Those central changes may be precipitated by role changes: becoming a teacher librarian, for instance. Self concerns and responses to external factors may be the impetus, but in either case, the subjective meaning of becoming a TL impacts one's changing self-concept. If, for instance, the new role of TL requires significant behavioral change, then the meaning of the role leads to greater consequence and requires more commitment. These changes can impact personal well-being along each dimension, and may result in abandoning the new role. Individual and external conditioning variables (i.e., personal resources, social support, social status, socialization experiences) all impact the individual's coping responses, interpretation of the change, and ultimate response to change (George, 1980). Brindley, Morton, and Williams (2006) reiterated the difficulties that second-career teachers faced. These mid-lifers come with precise career

expertise that might not transfer well into educational culture, and they may have non-conforming habits that clash with their "new" organization. This situation can occur with classroom teachers entering school librarianship as well as non-education librarians transitioning to K-12 settings.

Skinner's operant conditioning theory (1969) posited that individuals respond to discriminative stimuli; positive behaviors and effective reinforcers need to be identified. As the person performs appropriately, he or she can be reinforced intermittently until the old behavior is extinguished; furthermore, refinements of the desired behavior can be reinforced much in the way that teachers scaffold learning. Skinner's intent was purposeful external conditioning. However, operational conditioning might well occur on the unconscious level as new TLs respond to personally-relevant institutional stimuli such as social inclusion or principal support. Additionally, an individual can purposely self-reinforce changing role expectations by substituting a new habit (e.g., seeking opportunities for collaboration) for an old one (e.g., depending completely on oneself to instruct) with the positive reinforcement of getting to work with more students (a positive past experience that might be harder to accomplish independently as a TL). In any case, for change to occur, the new behavior has to be more compelling and beneficial than the old one.

In her study of beginning TLs who had been paraprofessional library staffers, Oberg (1991) recognized the feelings of loss and dislocation that accompanying the abandonment of prior roles and the assumption of new roles. She counseled, "Awareness and acknowledgment of these feelings will go a long way in helping novice teacher-librarians deal with the challenges of their new role; in fact, such discomfort may be an indication that a real and necessary transformation is occurring." (1)

One of the most important research-based models for change, the Concerns-Based Adoption Model, was developed at the University of Texas at Austin to address teacher resistance to innovation. It posited seven stages of concern, and asserted that change agents need to use a different approach at each point for people to advance to the next stage.

1. Awareness: briefly define the change and its benefits.
2. Information: provide factual information about how the change works.
3. Personal: link the change to the person, showing its impact and how the person will be supported.
4. Management: train the person, showing them how to manage the change.
5. Consequence: show concrete evidence that change impacts student learning.
6. Collaboration: provide opportunities to share experiences and leverage change's potential together.
7. Re-focusing: provide opportunities for pro-active improvement (i.e., more change). (Hord,1987)

At the site level, the TL's role needs to be clearly delineated, communicated, and fit into a reasonable timeframe for development. Resources (human, material, space, time, money) need to be identified and allocated to insure the needed level of support. Stages of concern should be identified, with appropriate strategies determined to help the teacher librarian accept and implement the professional role. Monitoring and assessment need to be ongoing so plans can be modified as needed. As with operant conditioning, the Concerns-Based Adoption model may be pro-actively implemented on a conscious personal level. Indeed, academic preparation is the typical means of initial role acceptance; the individual becomes interested in teacher

librarianship, gathers information and relates it to one's personal life, learns and practices the new skills with others, and refocuses his or her new role. If the stages are not successfully experienced, the potential TL is likely to drop the academic pursuit. On the other, if the final stage is reached successfully, the individual is certificated as a teacher librarian. In the new job, the beginning TL then has to revisit these adoption stages as he or she has to negotiate the TL role as expected by the school community.

A related theory focused on role development. More specifically, Toffler (1981) traced professional growth from the end of formal academic preparation and five months into employment, focusing on role-development stress. She noted two sources of role-development stress: role ambiguity where the role is unclear, and role conflict where expectations differ between employee and employer. Role development depends on both rational and emotional reactions; at the beginning, role stress tends to be more internal-based while over time the relational aspects of the job are the main predictors for successful role development.

It should be noted that the school community as much as the TL may need to grapple with change. Contemporary TLs are likely to have been taught newer instructional design approaches such as collaborative planning, newer learning strategies such as problem-based inquiry, and newer student learning issues such as information and technology literacy. When that new TL enters a pre-existing school culture that expects a traditional TL role, the newcomer has to determine the extent that he or she will need to change self-expectations – or need to change the school community's expectations. Certainly, TLs should play an active role in school improvement so they can help shape change rather than be shaped by others. As TLs examine their own strengths and the contributions of the library media program, they can articulate those assets as a team player for systemic improvement. If the school community continues to do the same things in the same way, chances are that the library media program will not be optimized. Therefore, schools themselves have to change in order to improve. Even positive change requires disequilibrium and re-adjustment, which can threaten the existing structure of power and influence and can result in different reallocation of resources and priorities. Thus, the force for change needs to overcome resistance, and needs to benefit those who accept and spearhead change. Both social and functional aspects of change need to be addressed since the school culture as well as operations are affected.

Contingency Theory of Socialization

Contingency theory of socialization examines the interaction of a new employee and an organization in pursuit of attaining the goals of general satisfaction and mutual influence Four stages of socialization exist: anticipatory socialization (prior experience and pre-assessment of the job and the organization), encounter and accommodation (learning new tasks, establishing interpersonal relationships, clarifying the role within the organization, and evaluating congruence), role management (resolving personal and work conflicts), and outcomes (satisfaction, influence, distress, turnover) (Feldman, 1976). Feldman found that role-centric socialization was more impactful than social group initiation. However, personal resolutions of conflicts significantly impacted general satisfaction with the job.

Gott (1989) and Mezirow (1991) focused on socially constructed workplace learning. Gott asserted that three types of knowledge of required for real world tasks: procedural (reflecting Dreyfus's novice level), declarative (domain), and strategic (decision-making). Mezirow identified three types of workplace learning: instrumental (similar to Gott's procedural

knowledge), dialogic (the organization and the person's role within it), and self-reflective (similar to Feldman's socialization stage of accommodation). Cunningham (1998) emphasized the effectiveness of workplace learning through interactions with other learners and experts, reinforcing social-interaction conceptualization.

In examining the emotional and cognitive stresses of organizational socialization, Nelson (1987) discovered a number of emotional factors that led to greater satisfaction: higher self-efficacy, open-mindedness, and greater risk-taking. Several studies showed how family support lowered stress (Cochran-Smith, 2004; Farmer, 2000; Johnson & Birkeland, 2003). In terms of knowledge, the more that individuals know about the job and the school, and have a strong library science background, the more likely that they will be able to handle stress, and will be successful and satisfied in their job.

Louis (1980) noted the inadequacies of organizational socialization, and identified key features of new employee experiences: surprise, contrast to assumptions, and need for change. Rather than trying to avoid all surprise or unexpected experiences, employers should help newcomers make sense of these surprises by facilitating relationships with knowledgeable peers, sharing information, and giving timely feedback. TL programs should also alert their pre-service students about possible assumptions and likely surprises when encountering the realities of the job and the organization.

Jones (1986) examined socialization tactics. He compared collective and formal initiations to individualized and informal ones. He also compared role models and self-identified situational action. Formal models tend to lower anxiety for newcomers with less self-efficacy (and likely to be associated with more routine jobs), while informal models lead to more differentiated responses to work situations, which is more reflective of TL positions. The implication is that self-efficacious professionals are more likely to be successful; organizations who want to help less confident beginning TLs need to focus on ways to reduce anxiety by providing targeted professional development opportunities and positive role models. In short, both organizational demands and personal self-efficacy impact the socialization process.

One specific perspective of this socialization theory focuses on work role transition. Nicholson (1984) posited three pre-conditions: the person's prior occupational socialization and motivational orientation, the organizational induction-socialization processes, and the role requirements. Three types of outcomes result: affective status and coping responses, identify changes, and behavioral changes. Depending on the nature and degree of personal and role development, four modes of adjustment are possible. *Replication* implies little significant change (an unlikely state for most TLs even if their prior job was in the same school). Absorption occurs as one gains the skills and knowledge to be successful and accepted; one could remain at this stage, which mirrors Dreyfus's competency level, or one can make further adjustment as follows. *Determination* is characteristic of mid-career change where the individual has a well-established self-identify and self-confidence, is skills, and desires control; the person tries to reshape the new work role and the environment. This adjustment is usually unstable; either the individual is successful and the rest of the school readjusts, or the individual makes personal changes in another direction. *Exploration* occurs with continual novelty of job demands or possibilities. This mode is more likely to happen in creative learning environments, which would match optimal TL work. If the new role offers more autonomy, the new TL is likely to absorb or follow expectations; with less autonomy, the TL is likely to determine the role differently or explore more. Likewise, if the new TL wants feedback, absorption or exploration will probably result.

One popular approach to socializing new personnel is the use of mentors. Mentorships by – and collaboration with – peers in the same subject domain result in job and career retention, although their impact is surprisingly not dependent on sociability (Clagg, 2002; Vereen, 2002; Pierce, 2004; Smith & Ingersoll, 2004; Australian Library and Information Association, 2005). Kardos (2004) reiterated the importance of matching subject-specific mentors with their beginning counterparts in order to positively impact teacher retention. Hein (2006) noted one limitation of mentorship: lack of joint available time. Nor is mentoring a natural activity for educators; making good practice explicit and crafting individualized learning activities for new peers requires training for mentors themselves (Feiman-Nemser, 2003). For mentors to be successful, Pierce (2004) asserted that several factors need to be in place: a sense that the mentor is the expert, a complementarity of needs between the beginner and expert (i.e., forming a professional identity and self-renewal), a willingness to nurtured and to be nurtured. Monsour's 1998's recommendations for successful administrative mentoring programs included similar factors: mutually respectful pairs that met at least monthly and participated in various activities characterized by networking, emotional support and validation, resource sharing, site visits, and guidance. Kram (1985) identified four phases of mentorship: 1) initiation, with its sense of excitement and expectation as the relationship starts; 2) cultivation, when all mentoring functions are at their peak; 3) separation, which may be friendly or stressful; and 4) redefinition of the relationship. Thus, mentoring is in itself a microcosm of the contingency theory of socialization.

Research Objectives and Description

The investigation examined the experiences of beginning and expert TLs to ascertain the factors, including role of employer-based induction programs, which impact their relative degree of success, particularly in implementing library media programs. It will also determine at what point in the academic-practice continuum identified skills, knowledge, and dispositions should be addressed, and what pre-service activities will optimize learning. This research compares southern California TLs (and their academic preparation) with the experiences of TLs in other representative countries (e.g., Australia, Brazil, Canada, European Union, South Africa, Hong Kong, and Singapore) in order to uncover possible universal and culturally determined practices.

Beginning and Expert TLs (as defined as those who have been nationally certified or the equivalent in other countries) were interviewed in order to determine whether the nature of, and responses to, job demands change with experience.

A series of research questions were proposed:

- What are the critical differences between first/second year and expert TLs' behaviors in terms of: time management, challenges, sources of support, library program implementation, application of career-preparation skills/ knowledge/ dispositions?
- What are the critical differences between successful and unsuccessful first/second year TLs' behaviors in terms of: time management, challenges, sources of support, library program implementation, application of career-preparation skills/ knowledge/ dispositions?
- Is there a significant difference between successful and unsuccessful first/second year TLs in terms of demographics, prior teaching experience, status in TL preparation programs, school community, or district induction programs?
- What critical factors for success can be linked to TL academic preparation, including field experience?

- What critical factors for success are more effectively learned "on the job?"
- What information and activities would be most effective in helping TLs transition into their first/second years of school librarianship?
- To what extent do TL academic preparation and TL experiences reflect universal or culture-specific practices?
-

For the purposes of this study, "successful" was defined as those first/second year TLs who:

- have been retained by their school for a second year (or more),
- receive all satisfactory or better ratings in their evaluation,
- implement library media program principles (as defined by AASL) to at least the basic level, and
- choose to continue as an TL.
-

Successful TLs *may* also include those TLs who are retained, but choose to be transferred to another locale.

Unsuccessful TLs are defined as those TLs who:

- were *not* asked to remain at the school,
- were asked to leave the TL position, or
- chose for themselves to leave the profession.

Research Methodology

To address these issues, the investigator used a mixed methods approach to provide a rich dataset and to triangulate responses.

Findings from the literature review were compared to standards for incoming and proficient TLs (California Commission on Teacher Credentialing, National Council for Accreditation of Teacher Education, AASL, National Board of Professional Teaching Standards). In general, most standards for entering professionals focused on content knowledge and skills, with some attention to dispositions (e.g., ethical behavior, effective interpersonal skills, professional outlook). Proficient TLs were expected to play a leadership role within the educational setting and the community at large. On the other hand, professional success often depended on circumstantial factors, which called upon the TL's ability to negotiate personal and school community expectations.

As a pilot ethnographic exploratory study to determine appropriate criteria for assessment, thirty-nine beginning and expert TLs from the greater Los Angeles area were surveyed and interviewed. The subjects were recruited from the list of National Board for Professional Teaching Standards certified Library Media Teachers, and from two large school districts (Los Angeles and Long Beach) via their library services. The Interviews were conducted by the investigator via real time or via online chat using a validated TL interview protocol instrument (Johnson & Birkeland, 2003). These interviews were followed by the administration and collection (via email or print) of the following assessment instruments to gather specific data about the subjects:

- Library media program implementation and values rubric (Farmer): to assess the degree to which school library programs implemented AASL principles, and the degree to which TLs valued those principles
- Library media teacher standards self-assessment (Farmer): to assess the degree to which TLs met professional standards
- TL challenges and support survey (Bourke, 2003): to identify top-ranked challenges and support systems as self-reported by TLs
- TL time management instrument (Farmer): to assess which major AASL principles were addressed throughout the work day
- TL satisfaction survey (University of Alberta, 2005): to assess TL job satisfaction and work conditions
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The preliminary data validated the instruments, and the survey was adjusted to accommodate international TLs, who constituted the second level of the research. At this point, the data revealed significant differences between first- and second-year TLs, so both years were included in the ultimate study.

IASL regional directors were then contacted to identify first- and second-year TLs and expert TLs per country (Australia, Brazil, Canada, European Union, South Africa, Hong Kong, and Singapore). A follow-up message was sent to IASL members through the association's listserv. The same set of assessment instruments were administered to gather specific data about the subjects via email and print.

Findings

As of April 1, 2007, 125 responses were collected: 45 from the U. S., 38 from Australia, 15 from Hong Kong, 10 from Canada, 5 from South Africa, 5 from Europe, and one each from Brazil and Singapore. Respondents ranged from their twenties (3) to their sixties (7) in age, with 45 % in their 50s, 30% in their 40s, and 17% in their 30s. Sixteen percent have never been married. Females constituted 89% of the respondents. Only 7% considered themselves to be a visible minority group member, and only 6% self-identified a disability. A third had dependent children; another 6% had dependent adults.

Academic Preparation

Two-thirds had education degrees, 47% had library/information science degrees, and another 31% are interested in earning a library/information science degree. Over 90% participated in field experience while enrolled in their pre-service academic programs.

In examining the responses of TLs, a few culture-specific factors were identified. Non-US programs were slightly less satisfactory than US ones, typically because of technology and collaboration elements. In a few Hong Kong cases (where TLs are required for every site), individuals were assigned to become TLs, even though there was no self-identification of that role, which resulted in lower satisfaction of the academic preparation and site situation. The most frequent recommendations for program improvement included providing more technology and practical information (particularly textbooks in the U. S., and human resource management in Australia and Canada).

Predispositions and Prior Experience

In stating the reason for becoming a TL, almost half mentioned their love of reading and sharing that interest. Longer-term TLs were more likely to mention loving libraries and books (newer TLs mentioned the act of reading more than books in themselves). The second-most mentioned reason was working with people: students, teachers, and others. A close third was the interest in the research process, and helping others find and use information/materials (mentioned mainly beginning U.S. TLs and U.S. nationally certified TLs). While a quarter liked teaching or working education, almost that same number wanted an alternative to classroom teaching. About a fifth mentioned their love of libraries, and about an eighth were motivated to become TLs because of prior library work experience. About a tenth noted an interesting in professional development or liked library working conditions.

Almost half had been classroom teachers before becoming TLs (TLs without a master's degree were more likely have taught than TLs with a master's degree, and U.S. TLs were more likely to have been prior classroom teachers). Another quarter had been teachers on special assignment or other service personnel. About 40 percent had no prior library work experience; about 15 percent had worked in public libraries, and about 10 percent had work in university libraries. Nation Board certified TLs were less likely to have had field experience than first-year TLs. The main reasons people did not go into school librarianship initially were because they thought about teaching first or there were no librarian positions available.

Induction Experiences

During their professional induction period, about a quarter of respondents did not participate for any identified experience. Little training was experienced the first year, and not much more was given the second year; only by the third year did the majority of TLs participate in the majority of training options listed. Ninety percent did independent reading; they responded that they found this activity to be the most helpful method of training. The second most helpful training was library association conferences; the least helpful was district training (site-based faculty training was also not found to be very effective). Library and technology trainings were found to be helpful. U.S. on-site training seemed to be more useful for non-U.S. TLs. On the other hand, non-U.S. TLs thought that professional workshop were more helpful than for U.S. TLs. More experienced TLs, particularly National Board certified TLs, stated that technology training and university courses were more helpful than what beginning TLs asserted.

Expectations of beginning TLs impacted their work. First-year TLs sometimes expected more collaboration. In some cases, they felt as if they had less control of their jobs than as a classroom teacher; in other cases, beginning TLs thought they had more autonomy. Expectations of the rest of the school community also influenced their work; if the prior TL was ineffective, the new TL was either welcomed with open arms – or the new TL had to work hard to overcome the bad past impression.

To cope, first-year TLs tried to learn about the school and about library technologies. They tried to find supporters at the site and within the profession. They tried to be more assertive and welcoming. By the second year, TLs felt more self-confident, and balanced school and home more effectively; they were often given more responsibility, but were given more support. In any case, the onus was squarely placed on them.

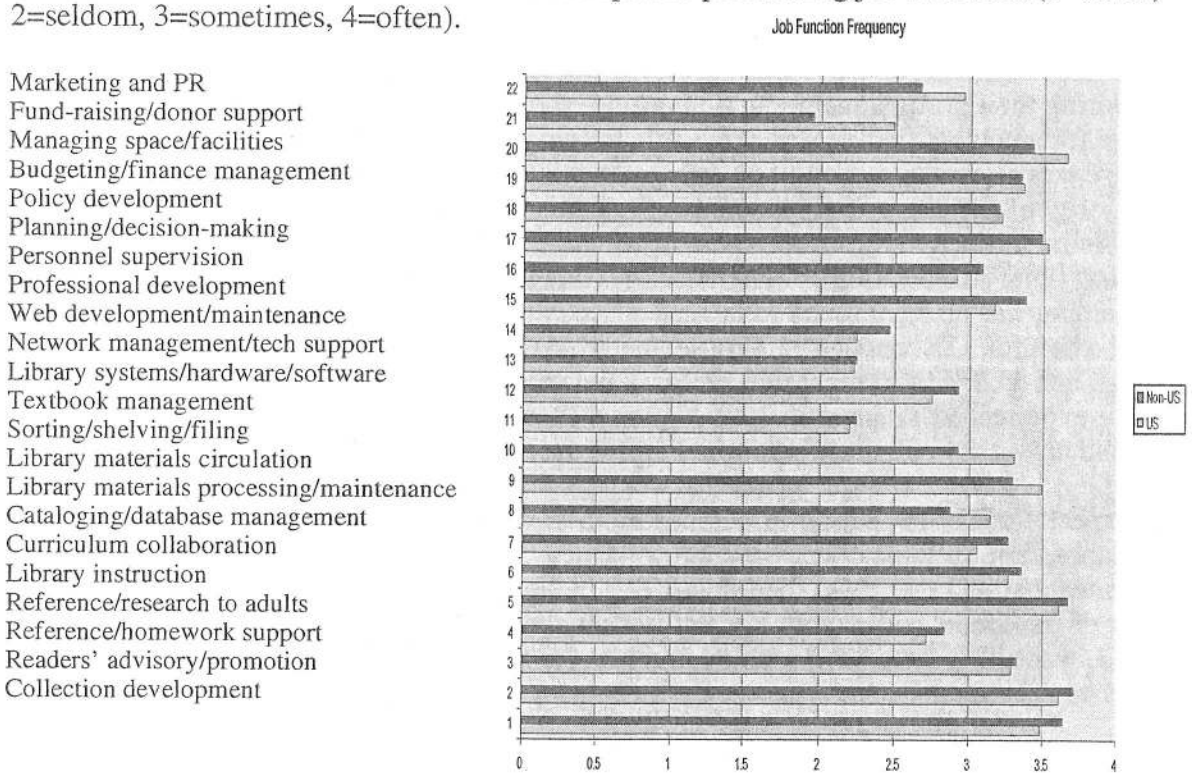
TLs who decided to leave the profession identified the following reasons:

- feeling of isolation
- preference to work with a small number of students in more depth rather than deal with all students more superficially
- feeling of lack of control and self-determination because of other people's demands on library services
- unrealistic job expectations, either because of heightened expectations raised in pre-service academic preparation or because of principal's determination.

Work Conditions

In terms of working conditions, TLs worked an average of 40 hours weekly. Hong Kong TLs tended to work longer hours, and Canadians tended to work fewer. A quarter of the respondents worked alone; the majority had at least one library clerk or technician who worked half-time or more. Almost a quarter worked with another professional librarian, and one respondent worked with seven other TLs. Usually no adult volunteers worked in the library, but several had multiple parent volunteers (20 at the most, more often in non-U.S. libraries). The median number of student volunteers was four, with libraries having a range from zero to over a hundred student help (more often in U.S. libraries).

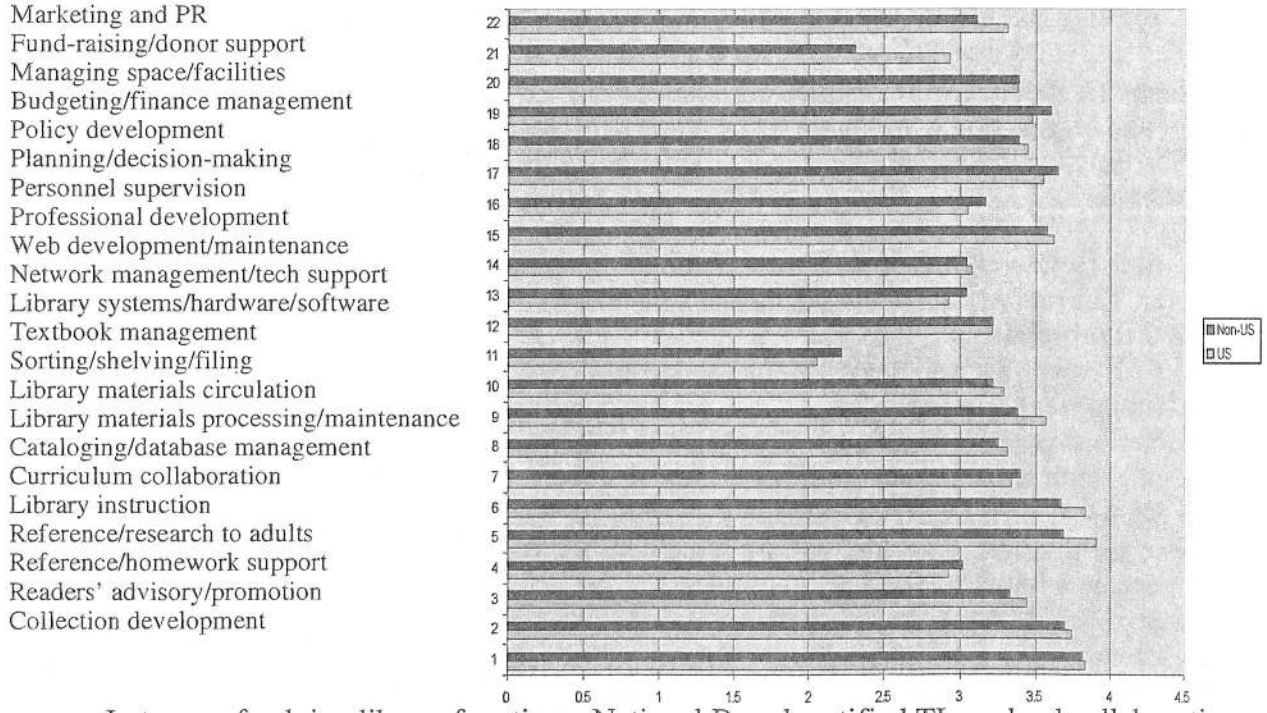
This table shows how often TLs self-reported performing job functions (1=never, 2=seldom, 3=sometimes, 4=often).



Several differences (at the .05 significance level) in job functions emerged relative to experience, as this chart shows. The symbols indicate frequency relative to the U.S. TLs in the preceding column. For non-U.S. TLs, similar patterns emerged for collection development and instruction. Less-experienced non-U.S. TLs did more materials processing than their more experienced peers.

1ST YEAR TLS	2D YEAR TLS	3-5 YEAR TLS	NATL. BD. CERTF. TLS
Collection development	=	<	<
Readers' advisory	=	<	=
Instruction	<	<	<
Reference	=	>	=
Collaboration	=	=	<
Circulation	<	<	>
Shelving	=	<	>
Textbooks	=	>	>
Web development	<	>	<
Professional development	=	=	<
Personnel supervision	=	=	<
Planning/decision-making	<	=	<
Policy development	<	=	=
Marketing/PR	=	=	<

In terms of the relative importance of each of these job functions, TLs responded according to this scale: 1=no importance, 2=of little importance, 3=important, 4=vital.



In terms of valuing library functions, National Board certified TLs valued collaboration, professional development, planning/decision-making, policy development, and fund-raising significantly more (at the .05 level) than the other TLs.

About twenty percent of the TLs had no other jobs. More experienced TLs either had few extra duties or many extra duties; they reflected the extremes. Some of the non-library jobs that TLs performed included:

- textbooks (particularly by beginning U.S. TLs)
- club/activity supervision
- technology-related work (mainly in Hong Kong and Australia)
- mentoring (mainly be experienced TLs)

In terms of the relative importance of site aspects of school librarianship,

Work Satisfaction

How satisfied were TLs relative to aspects of school librarianship at their site? In general, those TLs with master's degrees were more satisfied with their jobs than non-degree owners. Overall, the most satisfying aspects were intellectual challenge and autonomy; second most satisfying were safety and professional development issues. The least satisfying factor was district support. There was no significant difference in perceptions relative to country. Several aspects of the job were significantly positively correlated (at the .01 level). Besides the overall work conditions correlating with job satisfaction, the following significant correlations were identified:

- intellectual challenge satisfaction with TL influence, professional development, recognition
- autonomy and technology expectations
- teacher collegiality and satisfaction with intellectual challenge, prestige, information literacy expectations, professional development, recognition
- prestige and higher expectations for information literacy, technology, and reading.

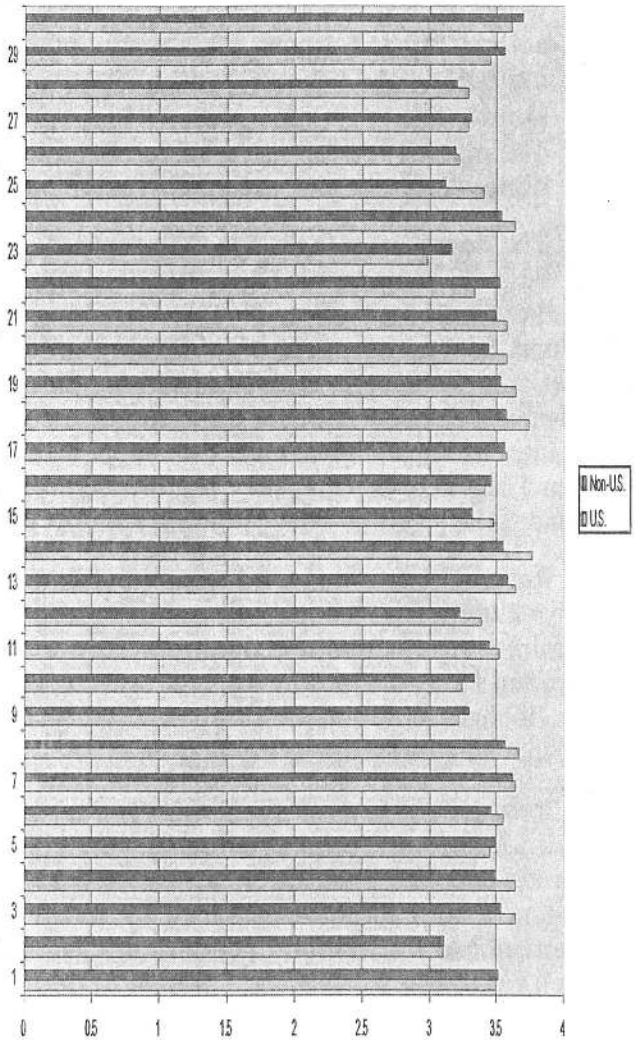
Significant (at the .01 level) *negative* correlations existed between satisfaction with parent support and satisfaction with library tasks, library influence, reading expectations, student behavior. Satisfaction with higher expectations also correlated negatively with satisfaction with student behavior.

Satisfaction with the intellectual challenge and autonomy was reported for all TLs. However, TLs reported different degrees of satisfaction of site factors depending on the length of time in this profession.

- First-year TLs were least satisfied with resources, student motivation, and information literacy expectations.
- Second-year TLs were least satisfied with equipment, student motivation, professional development, and parent support.
- Third- to fifth-year TLs were, on the majority, very satisfied with the professional calibre of the teachers, but were least satisfied with district administration support, and to a lesser degree with workload and equipment.
- Sixth- to tenth-year TLs were least satisfied with administrators, information literacy expectations, and library size.
- Eleventh- to fifteenth-year TLs were, on the majority, very satisfied with their tasks and school safety, and were least satisfied with school expectations and district support.
- Long-term TLs were, on the majority, very satisfied with their job security and professional development.

In terms of the relative importance of work conditions, all were rated highly.

General work conditions
Library size
Availability of resources and materials/ equipment for the school library
Work load
Type of tasks you perform
Intellectual challenge
Autonomy or control over the school library
Your influence over school policies and practices
Professional prestige
Expectations and norms about information literacy
Expectations and norms about technology
Expectations and norms about reading
Expectations and norms about the library
Expectations and norms about the school
Professional calibre of colleagues
Collegiality of classroom teachers
School learning environment
Student motivation to learn
Student discipline and behavior
Safety of school environment
Opportunities for professional development
Procedures for performance evaluation
Recognition and support from site administrators
Support from district administrators
Support from parents
Salary
Benefits
Job security
Overall job satisfaction



All respondents thought that intellectual challenge, autonomy, site administration support/recognition, and the school learning environmental were vital. However, significant differences in relative importance emerged, depending on how long the respondent had been a TL.

- First-year TLs rated the following aspects as vital: information literacy and library expectations, student discipline, and safety.
- Second-year TLs rated the following aspects as vital: resources, kinds of tasks performed, information literacy and reading expectations, collegiality, student motivation, and job security.
- Third- to fifth-year TLs rated the following aspects as vital: district support and job security; the majority considered the following as vital aspects: kinds of tasks performed, reading and library expectations, collegiality and professional calibre of counterparts, safety, professional development.
- Sixth- to tenth-year TLs rated the following as vital: resources; the majority considered the following as vital aspects: workload and tasks to be done, reading and library expectations, collegiality and professional calibre of counterparts, safety, and professional development.

- Eleventh- to fifteenth-year TLs rated the following as vital: reading expectation and overall work conditions; the majority considered the following as vital aspects: resources, workload and tasks to be done, prestige, library and information literacy expectations, collegiality and professional calibre of counterparts, professional development, student motivation and behavior, administrative support (both site and district), and job satisfaction.
- The majority of long-term TLs rated the following aspects as vital: resources, reading and library expectations, collegiality, student motivation, safety, and job security.

The degree of satisfaction with some site factors were found to be significantly correlated (at the .01 level) with several important aspects of the job: the types of tasks performed, intellectual challenge, influence, school expectations, student behavior, performance evaluation procedures, and parent support. For example, when TLs were happier about school and library expectations, resource availability becomes more important. Likewise, when TLs were satisfied with professional development opportunities, collegiality and library size become more important. For workload and parental support, there was a negative significant correlation; that is, when TLs liked the tasks they performed or have satisfying intellectual challenge, the workload, salary and amount of parent support was not as important.

Respondents were asked what would motivate them to perform better. Regardless of county or experience, the main issues were resources, funding, time, availability of library staff, and administrative support/recognition. Europeans wanted more school emphasis on information literacy, and Hong Kong TLs wanted more collaboration. Beginning TLs focused on need for more collaboration. National Board certified TLs wanted more policy-making opportunities, and wished that students were more motivated.

In responding to job changes over the past five years, the majority of TLs strongly agreed that their jobs become more interesting, challenging, enjoyable, and rewarding; they are more motivated to do their jobs. Over two-thirds of the respondents agreed that their job currently requires more skill and incorporates a wider variety of tasks, that they perform more management and leadership functions, and that they needed to learn more new tasks included high tech functions.

All TLs noted some kinds of challenges in their work. As with motivation, overall challenges for all segments of the study population included time, money, staffing, and workload. Many mentioned conflicting teaching loads, as well as the difficulty of balancing work and personal life. In Hong Kong one theme was the fact that other people controlled their job decisions. In Australia, it appeared that the library situation is in great transition: new sites and mergers, new curriculum, more technologies, uneven workloads. Challenges also differed according to the length of time that the respondent had served as a TL.

- First-year TLs sometimes had to clean up after a prior TL, entice people to use the library (particularly if the past TL was not outgoing), and deal with incoming books from prior-year orders. They sometimes felt overwhelmed because they were learning a new job, often at a new site. Some TLs felt isolated because they did not have their usual support group (e.g., other teachers at the same grade or within the same discipline). Some lacked clarity about their job functions and budget details. Some did not have a positive or clear working relationship with their principals. In general, the source of challenge was outside the library: the TL had to respond to others' demands or behaviors.

- Second-year TLs were challenged by textbook management, dealing with student behavior – while trying to be more students to use the library, updating technology, and dealing with new administrators.
- Veteran TLs were trying to keep current, and were frustrated with increased testing that resulted in less library-based instruction.
- National Board certified TLs were frustrated by non-supportive administrators, and were asked to do more non-library functions such as accreditation and special program coordination.

When asked how they met those challenges, beginning TLs tended to mention administrators, classroom teachers, and mentors. Expert TLs identified many more sources of help; they had established a strong support system.

While over time, TLs tended to become more satisfied with their jobs, those TLs who were identified as expert TLs did not necessarily have more positive job satisfaction or job status than non-experts. They were more satisfied than beginning TLs with the resources available, but were less satisfied with their workload, influence, and professional development opportunities. They valued equipment availability, autonomy, performance evaluation procedures, and benefits more than beginning TLs, but were less concerned about parental support. While they all self-reported a more-depth understanding of their role, especially in terms of instruction, their role did not necessarily align with their status. In some case, expert TLs were asked to do more work or assume greater responsibility without commensurate authority. In other cases, their status did not change and other faculty felt more threatened by their national certification. Relative to beginning TLs, expert TLs had a greater support system, used a greater repertoire of coping techniques, and took a longer term perspective, including effective work-arounds for current practice.

Discussion

Initial findings from the local research indicate that academic preparation has some impact on TL hiring. Furthermore, first- and second-year TLs have different experiences, expectations, and challenges; how they address those issues impact their immediate future. Additionally, expert TLs share some of the same issues as beginning TLs, have some different issues, and resolve these issues in acceptable ways. Unsuccessful TLs also shared some factors that led to the decision of leaving the field.

The experiences of TLs and principals are more closely aligned than to those of teachers for three main reasons: 1) likelihood of having prior work experience; 2) extent of administrative tasks; 3) school-wide perspective and clientele. As such, as both parties moved into their career position, they followed predictable patterns, substantiated by the theoretical models noted above. Furthermore, these models were considered from an ecological perspective (Barab and Roth, 2006) that recognized the particular network of opportunities, intentions, and "life-world" perspectives of the individual.

While no one institution had a "lock" on successful TLs, those TLs whose academic preparation melded theory and practice factors had more satisfying work experiences. Those students who pursued a master's degree had a deeper understanding of the profession, and were more able to weather temporary setbacks and use a longer-term perspective. Generally, service learning and field experience provided reality checks for professional expertise and matches for individual success. As much as possible, academic preparation should prepare TLs for technological expectations. Pre-service programs should also prepare beginning TLs for the

possibility that the school community might not be ready to embrace information literacy and other current professional standards, and provide advocacy techniques to help beginning TLs educate their prospective school communities. Academic programs should also alert new TLs can they will need to negotiate their duties and sense of control.

The degree of change from prior job experience to the workings of the TL sometimes impacted the individual's ultimate career success. If it was easy to make the transition, then fewer surprises occurred, which facilitated the new job (Skinner, 1969). On the other hand, less change required less commitment; it was easier to slip back to the prior job. Most TLs who left their library positions did so their first year; moreover, most of them worked at the same site as they had before, and returned to their previous duties. In some cases, being at the same location makes that re-assignment easier; in other cases, a change in site may be in order, particularly if the beginning TL has not had a good experience in the new position. Change in job title and site requires more commitment – and a greater leap of faith. Additionally, coercion into a TL positions seems to be a counter-productive measure. If the potential TL did not self-identify him/herself in that position, it was more likely that the person would not be successful and would try to be transferred to another position. On the other hand, if individuals identify peers as good potential TLs, then this action can be a way to recruit TLs; the key is whether the identified person goes from the awareness status to self-appreciation/acceptance status. Administrators need to hand-pick potential TLs carefully, and facilitate their change in job affiliation.

Induction activities should support new TLs explicitly address the unique tasks of beginning TLs even though few governmental or educational expectations or standards exist. First-year TLs, in particular, felt isolated, overwhelmed, and unclear about their job or school expectations. The most effective training involved library-savvy mentors or subject-specific training. Beginning TLs needed to feel comfortable about site-specific resources such as the library's automation system and related administrative systems. While activities to facilitate social relationships help beginning TLs feel more accepted, it did not automatically lead to greater job satisfaction. TLs also liked having a choice in their training activities, which might account for the fact that independent reading was a preferred professional development method. School systems and regional or national capacity also impacted the type of professional development available; distance to learning sites, lack of technology and other resources, lack of mentorship training, and under-developed professional associations all constitute possible barriers to further education.

Of particular interest was the occasional mismatch of expectations relative to information literacy and collaboration; current beginning TLs may well expect that the school community will values these notions, but few teacher and administrative preparation programs address these issues. The beginning TL sometimes found him/herself in the unenviable position of being considered a neophyte while being more highly trained in collaboration and information literacy strategies. Those with a strong professional reputation had an easier time of education their faculty as to library program potential. Nevertheless, administrators would do be well to acknowledge the beginning TL's current expertise, and find venues for these new professionals to share their recent academic training with the rest of the school community. Such practices would help newcomers feel more recognized for their learning, and would foster a sense of a learning community, which is a significant factor for job satisfaction.

The experiences of first- and second-year TLs differed significantly from more experienced TLs. In general, beginning TLs were more involved with daily operations such as textbook management (particularly in the U.S.). First-year TLs were trying to sort out their job functions and balance work with personal life. Second-year TLs understood their own jobs better

so they could focus more attention on their professional relationships with the rest of the school community. More experienced TLs did more planning (including collection development), instruction, and readers' advisory; they demonstrated more longer-term perspective and collaborative attitude.

Although most job functions and their relative importance were universal, a few differences existed between countries: money-raising was less typical and less valued among non-U.S. TLs, probably because of state funding. The main reason for differences among cultures depend on administrative issues: hiring practices and job assignments. Additionally, when TLs experienced support and recognition from administrators and other school personnel, they felt less resentment about workload, and complied more easily with resource constraints.

In terms of job satisfaction, first-year TLs sometimes experienced a "honeymoon" attitude of idealism and staff openness. By the end of that first year, they were less hopeful; if they felt that they "survived," they felt successful; they focused on their own activity and felt that the rest of the school should provide appropriate structures and support. Second-year TLs had sufficient time to reflect upon their first-year experience and make appropriate adjustments so that they felt more self-confident and out-going the following year; they focused more on effective working relationships. With competence and a sense of belonging, experienced TLs expected more district support and recognition; they reached a plateau of competence and so wanted accompanying recognition, be it in terms of influence or allocation of resources. Expert TLs accurately identified what they could control or influence, and what needed to be accepted or side-stepped; in either case, their goal was student and library program success. Generally, with time TLs become increasingly happy with their job; they had invested the time and had made accommodations that led to comfortable workload and accepted relationships with the rest of the school community. They did not expect others to "make" their job.

Experienced TLs either were satisfied with they job as is (and focused on job security), or they sought opportunities for expansions of tasks or influence. The transition from experienced TL to expert TL seemed to require a mindset of lifelong learning and risk-taking. This transition was site-independent, depending primarily on the TL. Formal professional development was usually needed to make that transition, be it an external incentive such as National Board certification or self-initiated professional development/recognition opportunities.

Conclusions

This study provides a model for future investigation, and can be replicated in additional settings both in the United States and globally. Constraints in classroom visitation and videotaping rights limited this study; including those experiences would strengthen the reliability of the self-reporting. Another important limitation was the identification of non-U. S. expert TLs; the only criteria was longevity. Professional awards might be one filter, though flawed, to determine expertise status.

Nevertheless, the findings from this research provide a richer picture of the experiences and needs of first- and second- year TLs. Of particular interest is the potential differentiation among beginning, competent and expert TLs. Thus, the study's findings can inform TL-preparation graduate programs and site induction programs. Furthermore, longitudinal data can determine if the TL program modifications impact the success rate of these TLs.

The international aspect advances study on determining the universal and culture-specific experiences of TLs in their academic preparation, induction period, and eventual long-term success. Amazingly, most content knowledge and practices are universal. Culturally-defined

aspects tend to focus on hiring practices, job functions, and decision-making. Additionally, gender- and age-linked factors were not identified as significant.

What kinds of candidates should TL preparation program coordinators and school administrators look for? Extroverted or service-oriented individuals who are self-confident risk-takers or at least open-minded, life-long learners, and flexible. Candidates are more likely to be successful if they are good communicators and collaborators. In terms of "good fit" with the function of a TL, those who value intellectual challenge and autonomy, and those who like reading and research processes, are more likely to feel comfortable. While having these pre-existing dispositions can facilitate beginning TL experiences, some of the behaviors (e.g., independent learning skills, communication, collaboration) can be taught in pre-service programs.

In terms of its impact on academic TL preparation programs, the assessment instruments can be used in the field experience to ascertain to what extent those candidates are prepared for their first professional position. Data collected from the use of the instruments can also be examined to modify programs in order to optimize TL candidates' professional success. Candidates need to understand underlying theories of librarianship as well as apply those principles and best practices in real-life situations, with an intention of educational management and leadership. They also need to be able to explore current library technologies in order to develop valued expertise at the future work sides. Furthermore, explicitly addressing professional dispositions should constitute part of academic recruitment and socialization.

Reflecting expert TLs' high regard for continuing education, TL preparation programs should give serious consideration to offering advanced and refresher courses for TL practitioners. Potentially, such programs could provide mentoring opportunities, combining pre- and in-service TLS. Another promising practice is to provide two-tiered TL licensure: 1) a preliminary credential to enable individuals to begin work within a school setting, perhaps as a part-time intern; and 2) a "clear" credential, which would require additional academic preparation. This latter tier could involve an induction partnership between the school system and the university.

In terms of dispositions and career motivation, whatever the motivation (e.g., activist vs. idealist), the match between personal and school expectations should be optimized. Field experience can be an effective "filter" or reality check to make sure that the anticipated expectation reflects real job functions. Additionally, pre-service faculty should explain change theory and issues of job transitioning in order to help candidates deal with possible stressful situations. Academic advisors should alert potential TLs that the job will not be less stressful or demanding, but rather the pacing and interaction with the school community will be different from their prior jobs. They should also be alerted that they will likely not be able to read on the job.

The contingency theory of socialization provided a framework to explain the relative success of beginning TLS, and reinforced the impact that administrators have on the success of TLs. Indeed, academic faculty should remind their students that the hiring process is as much about interviewing and sizing up the school and its administration as much as the school interviewing the potential TL. Several recommendations for administrators emerged from the data analysis. For example, administrators need to clarify job expectations, including budget issues. They should also be sensitive to first-year workload, and provide professional development opportunities for new functions such as technology expert. To ensure TL retention and success, administrators should provide targeted professional development opportunities

throughout TLs' career paths. Greater attention needs to be made to earlier professional development, particularly to close transfer of learning. Administrators should make sure that beginning TLs have subject-expert mentors and opportunities to see TL best practice. While general/site orientations are useful, more social connections should be the focus in the second year. To that end, administrators need to demonstrate explicit encouragement for collaboration and information literacy incorporation. Additionally, they need to explicitly encourage reading, information literacy, and technology competencies through curriculum development and allocation for time and recognition for collaborative planning and implementation. Fostering a learning community could optimize such efforts. Administrations also need to make sure to acknowledge and publicly recognize TL's efforts beyond their identified job descriptions; their public support will gain them acceptance when they ask TLs to do more with no additional remuneration. Administrators also need to make sure that all TLs, regardless of their tenure, have opportunities to network, to voice their needs, and to contribute to the school's mission based on their abilities.

The findings reinforce the identified theoretical constructs of competency theory, change theory and contingency theory of socialization. Based on the data collected and analyzed, the main conclusion drawn is that librarians grow developmentally in their job:

- growing from outside control to inner control,
- growing from concerns about self-centric actions to impact on student achievement,
- moving from self-survival to school-wide improvement,
- moving from absolutist to realistic expectations,
- focusing from daily operations to long-term influence,
- focusing from skills development to deep understanding of information literacy and the role of information, moving from self-control to schoolwide leadership.

Reflecting competency theory, significant differences existed between first- and second-year TLs, and between second- and third-year TLs and more experienced TLs. Additionally, significant differences existed between veteran TLs and National Board certified TLs. In general, first-year TLs focused on their own practice and their transition to their new role. Second-year TLs tended to focus on fitting into the school culture as they impact student achievement; they also put more attention on the resources they had in contributing to the school's purpose. By the time that TLs reached their third year, they focused on their working relationship with other school personnel as well as other TLs. National Board certified and other expert TLs were self-motivated, and found ways to improve library programs by optimizing school factors and finding ways to advance one's own knowledge and application for influencing school improvement. Administrators and library service supervisors would do well to check the process of TLs from one year to the next to determine if satisfactory progress is being made. They should also encourage and facilitate tenured TLs to advance from a competent *status quo* to expert status.

Several research questions remain to be explored. Replicating the study in other geographic areas would extend the conclusions' reliability, and more fully determine the universality or culturally-embeddedness of TL experiences and success.

The present study did not see age- or gender-linked perceptions, mainly due to the small number of the population. Larger populations may lead to correlations due to these demographics.

Tying motivation for entering the TL profession to Chin and Young's personnel clusters could provide insights into eventual success and job retention.

Few pre-service teacher and administration programs address TLs or library issues. Further study on incorporation such knowledge and determining the impact of such pre-service coverage on induction activities and library program impact would be insightful.

Examining how pre- and in-service TLs experience and cope with change might also lead to predictions about TL success, including the conditions for work success. The Concerns-Based Adoption Model is a promising assessment approach.

Similarly, studying how beginning TLs and the rest of the school community negotiate current expectations about information and technology literacies as well as collaborative practices could lead to beneficial practices that could be woven into pre-service training for TLs and other school personnel. Additionally, discovering how TLs, both beginning and expert, are perceived by the rest of the school community could help facilitate socialization and eventual success/satisfaction.

Focusing on the differences between competent and expert TLs could also inform pre- and in-service learning experiences as well as career ladder development.

In summary, this area of research is ripe for study and could well advance future TL preparation, induction, and ultimate effectiveness.

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The Complex Character of Collaboration: Current Practice and Future Challenges

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Abstract: Collaboration has long been an important issue in teacher-librarianship. Despite numerous studies on the topic, collaboration as a proven practice remains elusive. Researchers have identified success factors which should permit greater collaboration, including principal support, common planning time, and a culture of collaboration among classroom teachers. This paper explores the collaborative instructional activities of teacher-librarians who work in such progressive pedagogical environments. It describes current instantiations of practice, as well as identifies the persistent barriers which make "true collaboration" an infrequent occurrence. The paper concludes by asking, in light of these barriers, whether researchers should be setting up collaboration as defined in the literature as the "gold standard" of practice. It suggests that higher level collaborative efforts may have greater impact on the teaching and learning process, and proposes that teacher-librarians might better serve the cause of information literacy by managing instruction rather than delivering it directly.

Introduction

A growing body of research literature connects the effective performance of teacher-librarians to student achievement (Champlain & Loertscher, 2003; Lance, Rodney & Hamilton-Pennell, 2000; Lonsdale, 2003). Key to that effective performance is collaboration, most notably as an instructional partner in the teaching and learning process (AASL/AECT, 1998). As pedagogy incorporates a greater range of information resources and technologies, collaborative partnerships with teacher-librarians will become critical to the success of educators and students alike.

Collaboration is a complex situation involving the interplay of actors, contexts, and task demands. Many research studies on collaboration, however, often fail to fully explore this complexity. The research described in this paper is part of a larger examination of school libraries in the midst of reform. By examining reform contexts, we gain insight into the leading edge of pedagogical practice, which may permit the design of innovative practice models. This paper will explore the current state of collaborative practice in six pedagogically progressive high schools. In doing so, it seeks to identify both the affordances of collaboration—those attributes which make it a worthwhile pursuit—as well as the persistent barriers that prevent it from being realized.

Literature Review: Collaboration in School Libraries

Collaboration has been variously defined as "working in alliance" (Johnson & Johnson, 1992), "communicating" (Clark & Brennen, 1991), "constructing a joint problem space" (Teasley & Rochelle, 1993), and different combinations of these, among others. It is important to note, however, that no general or comprehensive theory of collaboration exists that may serve as a starting point for researchers from disparate traditions wishing to study collaboration, its emergence, processes, and effects. A number of authors have outlined what should be in a

general theory, and these are worth noting. Woods and Gray (1991), in discussing collaborative alliances in the business domain, suggest that any comprehensive theory must address:

- the meaning of collaboration itself;
- the auspices under which collaboration is convened (how does collaboration emerge?);
- the implications of collaboration for complexity and control (does collaboration make work easier or more difficult?); and
- the relationship between self-interests and collective interests.

In the absence of a general theory, each knowledge domain has constructed its own patchwork approach, defined its own variables, and rather selectively used the research of other fields (if at all) in doing so. Studies of collaboration in the domain of school librarianship have often addressed the second, third and fourth points of this general framework in tackling the first – the meaning of collaboration itself. The general assumption is that collaboration is always beneficial; this principal assumption often results in uncritical analyses, and runs contrary to other research findings on collaboration.

Steiner (1972) coined the terms *process gain* and *process loss* to describe the effect of groupings on individual processes. Process gain occurs when a collaborative effort is greater than what two or more individuals could achieve alone. Process gain can be the result of synergistic combinations of skill and knowledge, pooling of resources, group learning, or positive affect. Process loss, conversely, is the decrease in productivity or efficiency, or the loss of motivation or momentum ascribed to coordinating one's actions with others. A number of studies since Steiner's framework have looked at how process loss can be minimized, such that the whole can at least be as great as the sum of the parts. Interestingly, collaboration studies in library and information science (LIS) rarely look at process loss.

Theories of Collaboration for School Librarianship

Recent attempts to construct "theories of collaboration" for school librarianship draw on a variety of disciplines, including educational leadership, psychology, and management science. Hughes-Hassell & Wheelock (2001) proposed a three-stage structure: cooperation, coordination, and collaboration. The degree to which the teacher-librarian is engaged in the planning and teaching of the lesson or unit increases with each stage. Montiel-Overall (2005) combines the work of several disciplines with Loertscher's (2000) taxonomy to delineate four models of collaboration: A) Cooperation; B) Coordination; C) Integrated Instruction; and D) Integrated Curriculum. This last model suggests that teacher-librarian is working as a curriculum coach as well as information literacy instructor. Montiel-Overall admits that this last stage is difficult to achieve and rarely observed. Haycock (2007) builds on these theoretical foundations in describing factors which influence successful collaborations, and suggests implications for practitioners. Many of the models of collaboration contain common elements and suggestions for practice. For example, all of the models of collaboration identified in reviewing fifteen years of collaboration research (from Henri, 1992 to Haycock, 2007) insist that co-instruction, shared equally between the classroom teacher and teacher-librarian, is a necessary condition for library activities to be considered collaborative.

Perceptions of Collaboration

Collaboration has been explored in a number of ways by many researchers, but largely in terms of stakeholder perceptions. A recent issue of School Libraries Worldwide contained research articles focused specifically on how school principals affect collaborations between classroom teachers and teacher-librarians. Morris & Packard (2007) examined the perceptions of support for collaboration in 12 schools with exemplary library programs. Their questionnaire revealed that these programs had high levels of principal support for collaboration, although the perceptions did not always match the perceptions of classroom teachers. Farmer (2007) reviews literature relating to principal support of teacher-librarians, identifying key barriers, as well as suggesting ways practitioners may better engage school administration through assessment. These articles show findings similar to those discussed in Hartzell (2002), as well as Oberg, Hay & Henri (2000).

Bale's (2005) study of classroom teachers' information seeking identifies a number of challenges to collaborative efforts, suggesting that collaboration may be more myth than reality. She suggests that the power dynamic between classroom teachers and teacher-librarians is often at fault when librarians are ignored as instructional partners. Collaboration, she proposes, runs contrary to what Tyack and Cuban (1995) call the persistent "grammar of schooling" – the tacit understandings of how schools operate, how professional relationships are defined, and how innovations are muted in favor of the status quo – thus explaining its rarity. This skeptical take on collaboration, running contrary to the optimism of other researchers (e.g. Haycock, 1999; Lonsdale, 2003; Moore, 2005; Morris, 2004) is a necessary balance, reminding us that the elusiveness of collaboration bears on multiple stakeholders. Missing from many of these research articles are actual observations of collaborative activity. Most have relied on questionnaires to gather data, which begs the question of how these perceptions play out in the practice context.

Exploring Collaboration in Progressive Pedagogical Contexts

Past studies of collaboration have focused on K-8 contexts, and often identify barriers to collaboration such as rigid library schedules, principal support for collaboration, and lack of common teacher preparation time (e.g. Van Deusen, 1996; Zweizig & Hopkins, 1999). Scheduling barriers do not commonly affect secondary school libraries, however, most of which are flexibly scheduled for class and individual "drop-in" access. Newer structural arrangements and progressive pedagogy promise to eliminate many of the other barriers as well. Changing the nature of teaching and learning should have direct implications for library and information services, as suggested by Hartzell (2001). This study explores the nature of collaboration between classroom teachers and teacher-librarians in schools which have taken concrete steps toward eliminating many of the constraints commonly identified in the research literature as roadblocks to collaboration. In doing so, the study poses the following research questions:

1. What is the nature of collaboration in progressive secondary contexts?

2. What affordances and constraints to collaboration with teacher-librarians exist in secondary schools where classroom teacher collaboration is the expectation?

In examining the evidence gathered by the research team, this paper will seek to identify both the process gains and the process losses with respect to collaboration.

Background: The Small High School Libraries Project

The Small High School Libraries Project is a three-year investigation of secondary school libraries in the midst of a specific structural and pedagogical reform effort. Through this reform, comprehensive high schools of 800-2000 students are being subdivided into autonomous academies or "small schools" of 400 students or less. This subdivision carries with it serious implications for the libraries of those schools. Small schools purportedly provide an improved learning environment that results in increased academic achievement, lowered dropout rates, and improved parent, teacher and student satisfaction with schooling. The small schools approach has the support of the United States Congress, the Department of Education, and the Bill & Melinda Gates Foundation. Changing the size and nature of high schools also requires a change in the library program of those schools.

The teaching and learning approaches championed by small schools include: teachers personalizing instruction to facilitate student inquiry and to meet the needs of individual students; flexible curriculum focused on independent research; standards-based learning with intensive support to help students meet standards; and student demonstration of learning through projects, exhibitions and performance-based assessments. Teaching and learning in a small school requires that the library and librarian provide a rich infrastructure of information skills instruction, reading and literacy advocacy, information and technology services, and resources management. The underlying assumption is that effective library and information services are essential for the successful education of adolescents in small schools. To learn more about the Small High School Libraries project at the University of Washington, visit: http://smallschools.ischool.washington.edu/

Method of Empirical Investigation

The overall goals of this research project included 1) assessing the implications of small school restructuring for library and information services in high schools; 2) developing an in-depth understanding of the challenges faced by teacher-librarians in the midst of structural and pedagogical change; 3) creating best practices to support the work of teacher-librarians who encounter similar change. To address these project goals, the research team elected to use a triangulated, qualitative approach to develop a "comprehensive perspective" of the work life of librarians, the libraries they worked in, and their place in the school community (Patton, 2002 p.306). By systematically collecting data from all six sites using identical instruments, protocols, and time frames, the research team was able to build case studies and also perform cross-case analyses. This paper draws on a smaller portion of the data set collected over three academic years, specifically two protocols (described below) focusing on classroom teachers. In the larger study the research team gathered data from administrators, teacher-librarians, and students.

Table 1: Descriptive Characteristics of Participating High Schools

School	Type	# of Students**	# of Learning Communities	Library Staff (FTE)	# of High schools in District
A	Rural	1,660	5	3	1
B	Suburban	845	3	3	1
C	Suburban	2,166	6	2	2
D	Suburban	1,617	5	2	5
E	Urban	1,076	3*	1	10
F	Urban	1,361	2*	1	10

*Learning communities were structured by grade level rather than thematic, multi-grade (9-12) communities.

** Latest available data from Washington OSPI – October 2006

Site and participant selection. The high schools in this study reflect a variety of socioeconomic levels. Two urban schools, three suburban schools, and one rural school are represented in the sample, drawn from the greater Seattle, Washington area (see Table 1 for a summary of descriptive statistics for each school). The six teacher-librarians of these schools agreed to participate in the study. All were experienced, highly qualified TLs: five held a Masters degree in Library Science (or equivalent) and one held state endorsement in Library Media from an accredited program. Their range of experience, both in the site schools and in the field of education, is displayed in Table 2. Two of the TLs held the role of building technology coordinator. In the final year of the project (2006-07), one TL chose to move to a new school. We successfully recruited her replacement, who participated in project activities during this final year. She holds a M.Ed. with a Library Media focus as well as a state endorsement in Library Media. This change of informants interrupted some aspects of data collection; it did not, however, compromise the school's participation in the project.

Table 2: Descriptive Characteristics of Participating Teacher-Librarians

School	Certification	# Years as TL of Site School	# Years in Education field	Technology Coordinator
A	TL Endorsement	4	17	N
B	MLS	15	25	Y
C	MLS	7	27	N
D	MLS	7	13	N
E	MLS	15	24	Y
F	MLS	14	18	N
F*	MEd, TL Endors.	1	7	N

*New TL was recruited during the final year of the project, 2006-07.

Observation protocols. From May 2005 to November 2006, the team conducted a total of 36 site observations. Each of the participating site libraries was observed six times. The site visits were scheduled at different times in the school day (between 7:00am and 3:00pm) and were two to three hours in duration. This variation was intentional: our goal was to capture the full range of activities that occur in each library. During the observation a member of the research team documented the physical attributes of the library and the behaviors of the teacher-librarian, the students, and the classroom teachers. The observation protocol is in Appendix A. During the observation, the researchers collected sample assignments and other documents related to the activity in the library.

Collaborative activity protocols. The research team observed the school site library activity in 2005 to gain a baseline assessment of the library services and program features, as well as general trends in library use and information seeking of faculty/student users. To expand on this data, the team designed a collaborative interview protocol, focusing on the instructional style and mediation of the TL working with a teacher and class of students on a given library-based assignment. One member of the research team would observe a class lesson taught in the library (see Appendix A), then interview the classroom teacher and teacher-librarian individually about the lesson using unique but related interview schedules (see Appendix B & C). The goal of these interviews was to gain a deeper understanding of the various stakeholders' perceptions of collaboration and library activity. The teacher and librarian were asked questions such as: how did they prepare for the library activity? What aspects went well or went poorly? Was the type of activity observed regular or anomalous? The follow-up interviews occurred within 1-2

days of the lesson. All interviews were audio recorded and transcribed. This protocol was performed twice in each school for a total of twelve data sets (12 observations and 12 classroom teacher interviews, 12 teacher-librarian interviews).

Classroom teacher interviews. Nine to ten classroom teachers from each participating school site were interviewed individually by a member of the research team in February and March, 2007. Principals and especially teacher-librarians assisted in recruiting volunteers. To encourage participation, each teacher who volunteered was given a modest monetary incentive of $20, and a matching contribution was provided to the library for the purchase of resources. In total, the research team interviewed 57 classroom teachers, representing the variety of teaching positions at all six sites. All participants were volunteers; however, the team was careful to select and interview from among those volunteers teachers who would provide diversity of opinion along a number of dimensions: 1) teaching experience; 2) age; and 3) subject matter. Active use of the school library was not a required dimension. In this way, the researchers were able to gather impressions of library users and non-users. These characteristics are represented in Table 3.

Table 3: Demographic Data of Teachers Interviewed

Total	57	100
Discipline	**Frequency**	**Percent**
Language Arts & Foreign Language	25	44
Math & Science	16	28
Social Science	7	12
ELL, Special Ed, Counseling	9	16
Gender		
Male	17	30
Female	40	70
Experience		
Median	8 yrs.	
Mean	11 yrs	
Min	1 yr.	
Max	30 yrs.	

Each of the interviews lasted between 10 and 37 minutes (mean and median: 21 minutes) and was based on an approved protocol included as Appendix D. All interviews were held in a school site location away from the library. Interviews were audio-recorded and transcribed to capture accurate representations of the conversation.

Data Analysis. The largely qualitative data set was analyzed using a set of coding techniques, memos, research team conversations, and member checks. In the early stages of the research project, interviews and observations were discussed in depth by the research team and analyzed inductively for emergent trends, as well as deductively using existing documented patterns of behavior present in the related research literature (e.g. teacher-librarian roles as elaborated by Eisenberg, 2002). These early, iterative analytic steps helped to guide the construction of instruments for years 2 and 3 of the project. For example, the emerging disconnect between teachers and librarians about the process of collaboration, observed in the in situ observations and informal conversations with stakeholders, prompted the creation of the "collaborative" protocol.

The later stages of analysis, once data collection was complete, incorporated a number of coding methods to identify themes and patterns in the data. Four major themes emerged from the data which, at a high level, guided this more thorough approach and permitted the team to break an enormous data set into manageable portions. The four themes (resources and collections, governance, roles and responsibilities, teaching and learning) or first-level codes were mapped onto the instruments questions to create thematic "sets" which could be analyzed using the iterative pattern coding technique discussed by Miles and Huberman (1994). The team utilized the coding and querying features of Atlas Ti 5.0 (Knowledge Workbench, Inc) to parse the data into these thematic sets. Repeated reading of the interview transcripts, memos, and group discussions allowed the team to identify patterns (second level codes) of individual and institutional behavior within these sets. Some patterns appeared in multiple themes (such as structural constraints, stakeholder perspectives, and emerging tensions), which permitted thematic bridging. Select questions which provided particularly rich data were further analyzed independent of the themes using third level coding schemes specific to those smaller analytic sets.

Findings Part 1: The Nature of Collaboration

The findings from this exploration of classroom teacher and teacher-librarian collaboration are presented in two sections. The first section discusses the observed collaborative activities at six high schools and provides evidence from two case examples to illustrate emergent themes, supported by over 100 hours of observation data and multiple stakeholder interviews. The second section draws on 57 classroom teacher interviews to further diagnose collaborative activity, elaborating on the process losses and gains discovered in section one.

Observing Collaboration: The State of Practice

Initial observations at the six research sites were consciously arranged to represent a variety of days and times, capturing a full range of library activity. What was often missing from these observations, however, was the sense of how teacher-librarians and classroom teachers worked together to provide both instruction and resources to foster student learning. Observations at some sites showed routine information retrieval tasks and desktop publishing to be the dominant academic activity. The research team did not see deep collaborative activity, but this is not to say that the libraries were always vacant. Rather, the teacher-librarians were in constant motion, mediating individual information seeking, trouble-shooting technology, performing readers' advisory, processing and circulating materials.

Collaboration did occur, according to self-report of the teacher-librarians; we were missing some of these partnerships due to the timing of our visits. In light of this, the research team decided that random observation would not permit insight into collaborative activity. We invited the teacher-librarians to arrange observations that would showcase collaborations, allowing them to select lessons for the researchers to record, so we could gain access to these richer interactions. A member of the research team arranged to observe a collaborative lesson or unit in the library or classroom (or both), then interviewed the classroom teacher and teacher-librarian shortly afterward using the protocols attached as Appendices B & C. Each cooperating teacher-librarian was observed twice, working with different classroom teachers each time, for a total of twelve observed collaborations. The research team provided no guidelines for these

lessons; teacher-librarians were free to decide what collaborative activities looked like. An at-a-glance summary of these twelve collaborative lessons is presented in Table 4.

It is beyond the scope of this paper to describe each of these lessons in exhaustive detail; however two lessons in particular highlight the emergent themes. Lesson C1 and Lesson F2 have been selected as case examples; C1 as a model of exemplary collaboration, F2 as typical of the collaborative activities observed in most of the six research sites. Descriptions of these lessons are organized as follows: 1) Initiation and planning; 2) Instruction; 3) Evaluation and follow-up.

Table 4: Summary of Collaborative Lessons.

School	Lesson	Description		Assessment			
		Activity Description	Content Area	Initiation & Planning	Instruction	Evaluation & Follow-up	Overall Assessment
A	1	PowerPoint instruction	Geography	X	X	X	Cooperation[1]
	2	Word template instruction – historical resume	Social studies/ English	X	X	X	Cooperation[1]
B	1	Annotated bibliographies	U.S. History	H	M	H	Collaboration
	2	Country profiles – newspaper articles	World History	M	M	L	Coordination
C	1	Reading and writing support – predicting skills	Language Arts	H	H	H	Collaboration
	2	i-Search paper – year-end research project	English/ History	M	M	M	Coordination
D	1	Literature supplement -- Scavenger hunt	Language Arts	M	M	L	Coordination
	2	Diseases -- Internet research	Health	M	L	L	Cooperation
E	1	Social issues research, PowerPoint presentation	History/ Drama	L	L	L	Cooperation
	2	Literature supplement -- Holocaust imagery	Language Arts	M	L	L	Cooperation
F	1	Future profiles – essay research	Language Arts	M	M	M	Coordination
	2	Short research paper – African colonialism	World History	M	M	L	Coordination

Key to Collaboration Assessment:
Low: Little or no collaborative activity was present; highly asymmetrical planning or execution; poor communication; little or no follow-through; library activity was not integrated.

[1] In the course of the observations and interviews at this school, it emerged that these lessons had been staged or contrived strictly for the benefit of the researchers. As such, we have withheld evaluation of these lessons, but still labeled them cooperative since the classroom teachers involved were very supportive of the teacher-librarian. In a later interview, the teacher-librarian remarked: "I think this [research project] reinforced that collaboration is very important. So I'm trying, I'm trying, and I get awfully busy. I get buried. I go to meetings, I'm not here for every class that comes in, you know, but I'm more aware of it. I know that's what my colleagues are doing and I need to be doing, too." While collaboration was not part of her routine prior to working with the research team, we are optimistic that she will expand her practice through the generous encouragement of her professional colleagues.

Medium: Moderate collaborative was activity present; semi-symmetrical planning or execution; some communication, but breakdowns may be evident; library activity was somewhat integrated.
High: Full collaboration was present; symmetrical planning and execution; library activity showed clear integration.

Case Example C1: Collaboration

The research team found that full collaboration, as described in the literature, occurred in few of the lessons that teacher-librarians regarded as collaborative. One lesson that stood out as being exemplary of the type of collaborative partnership the literature describes occurred in School C between the teacher-librarian and a language arts teacher. The following subsections will explore some details of that lesson.

Initiation and planning. The classroom teacher and teacher-librarian established a partnership and expectations early in the year. As a new teacher to this subject, she was particularly interested in collaborating and developing ideas with an experienced literacy advocate. She describes the impetus for the lesson:

> *CT: "The class I am teaching is called Literacy Standards. It is a reading and writing support class for students that are below grade level. So what I did at the start of the year is that the librarian and I planned that we would come to the library every month and then we would just do something different each month."*

For this month's activity, the two arranged an initial meeting, divided tasks, and then checked-in repeatedly to ensure that they were in synchronicity. Two meetings totaled 90 minutes, plus time spent individually in preparation for the 50 minute lesson, which would include a predicting activity and booktalks. The teacher-librarian describes her preparation:

> *TL: "We met and discussed what we wanted to do and we went online to Marco Polo which is a resource site and found a lesson plan that had some predicting activities. So we gleaned a couple of parts of that and used that today. That was my work with her. We checked back with each other a couple of times to make sure we were on the right track. Well, first I went to the Internet and got some lists of books that were similar to the ones I know the kids like a lot and then I took a bunch of them home and read them, or at least a part of them and then prepared a PowerPoint presentation on these books for the book talk."*

Instruction. The teacher-librarian and classroom teacher co-taught the lesson. The teacher-librarian began by explaining the activity, how it fit with grade level expectations, and where they would expect to use predicting skills in other areas, namely on standardized tests. The classroom teacher and teacher-librarian modeled the activity to the entire class using a computer and projector setup in the teaching section of the library, and then worked quietly with small groups of students. The predicting and genre activities were followed by a set of booktalks by the teacher-librarian built on an "if you like this" format. The classroom teacher explained how she was integrating the predicting exercise with her curriculum:

> *CT: "The way I have broken my class down is pre-reading activities, during reading activities and post-reading activities. This whole first quarter we were really focusing a lot of pre-reading and it will probably take us up to the break in December. This is part of that I can keep reminding them. We will do predicting activities and then the whole concept what is going on inside of your head is really the thing that struggling readers...that is their biggest struggle. They are just looking at words and they are not making any connection. That is why when they get to the end they have no comprehension of what they have read. To really get through activities like predicting, and then other things that we will do during reading, will really get them to start interacting with the text so they will hear about this all year long."*

Evaluation and Follow-up. The classroom teacher thought the lesson went well, and anticipated that this lesson will prepare students for upcoming standardized testing. She also identified how she can transfer this activity to students at other grade levels, as well as how she would reinforce the outcomes of the activity throughout the year.

> *CT: "I think, my second period class is sophomores and they will be WASLing this year[WASL is the Washington State standardized assessment] and I think this was very beneficial for them. There are questions that are like this with predicting what might happen later in a story and/or the justification part. Some of the WASL-type questions will say pick a different title for this story and then support your answer and they have to really be able to justify. I find with the freshman and the sophomores that is something they struggle with so even in that activity, as small as this one today, to really get them working on that skill."*

This type of collaboration with the teacher-librarian is an ongoing, creative partnership. One strong theme in this collaboration, as well as in others, is how the teacher-librarian helps teachers adapting to new content areas or new courses within a content area by providing creative suggestions.

> *"She has helped me this year curriculum wise because it is a new subject area for me. I can come to her whatever weird thing, like are there any short stories about whatever and she is like, 'here are five books.' We find an activity the other day, we went to these websites and we found an activity having to do with reading and music where the kids develop a sound track to a book that they have read. She has helped me come up with tons of lessons, definitely."*

Case Example F2: Coordination

More typical of the lessons we observed was F2: an 85 minute lesson in which tenth grade world history students worked on a 2-3 page short paper involving electronic and print research. As an example of coordination, we did not see a deep instructional partnership between the classroom teacher and teacher-librarian; rather, the emphasis was on resource provision and facilitating computer access.

Initiation and planning. The teacher was focused on providing a relatively short research project to culminate the sophomore history class. Students were assigned to investigate the process of post-World War II independence for an African nation of their choice. The classroom teacher describes his thoughts behind this assigning this task:

> *CT: "It was kind of an end-of-the-year project to drive home some of the research ideas, basically make them do a work cited page again, and then do some nice little research. It's also a nice, easy grade at the end of the semester."*

This lesson was a familiar assignment to the teacher-librarian. She had helped gather resources for a nearly identical assignment the previous semester, so preparation did not require a great deal of communication.

> *TL: "I knew that he was doing this assignment, he had been here before to do it, and I went to his website to get a copy. He still had the assignment posted on his website, so that's how I knew what needed to be covered. I didn't feel like I had to really have a deep conversation with him about the assignment."*

In preparation for the assignment, the teacher-librarian created a list of useful websites that she could distribute to the students on a sheet of paper. She also selected a particular database tool with a clickable African map. She anticipated that the students would not know the continent of

Africa particularly well, and thus the map interface for finding country information would be easy to use.

Instruction. The instructional session in the library was a classic tag-team affair. The teacher introduced the lesson, explained the parameters and expectations. Then he handed-off to the teacher-librarian, who did a brief introduction to the resources that she had selected for them to use. The introduction was perfunctory, as an airline attendant preparing for departure. She included some basic caveats regarding the importance of using vetted information for historical research. After approximately 10 minutes of introductory material, the students were permitting to begin their research on the computers. The classroom teacher and teacher-librarian circulated among the students, directing them, helping to identify their information needs and sources. The classroom teacher explained how he uses the teacher-librarian's knowledge of resources:

> *CT: "I don't really need her expertise on the topics I go in there for. And then, you know, there are almost no books anymore, so it's largely an encyclopedia Easter egg hunt, which is fairly pointless. And computer research which she, or any librarian, you know, is no better at than I am, actually. So in practice, I don't really see much purpose in working closely with school librarians. The database thing is handy, because I don't know how to do the databases, so she DOES that part. And that part I do leave to her, because I don't really know which databases we have access to, and I haven't done database research in a long time, so that's all changed."*

The second half of the lesson occurred using print resources. The student continued the same assignment on the other side of the library with the encyclopedias and other print resources which were displayed on a table near the circulation desk. The classroom teacher spent considerable time during this portion of the session working with students in small groups on the process of citation. A second group of students came into the library to use the computers; the teacher-librarian was called away regularly to assist them.

> *TL: "I felt really comfortable with what went on...I just felt good being able to help them, you know, just with going around to help them navigate the sites and helping them find information. It was nice."*

Evaluation and follow-up. Neither the classroom teacher nor the teacher-librarian took efforts to follow-up on this lesson. Both seemed mostly satisfied with the result. The classroom teacher had wished to have the computers for the full 85 minutes, but over-crowding limits the amount of time the teacher-librarian will allow any one teacher to reserve the computers. In the teacher-librarian's assessment, the lesson worked on two levels: the students gained access to resources, and were also reminded of the existence of databases:

> *TL: "I think it supported student learning by giving students resources that would guide them to the information that they needed to do their project. Also, for an introduction – any time you can get students to understand that there are databases. You know, just introduce them that there are other resources out there, and so that kind of information can always transfer to later on, so it's like on two levels. One to help them with the project, another to understand that there are resources out there that are easily accessible."*

Summary: Collaboration in Practice

While the research team expected that there would be wide interpretations of the concept of collaboration in practice, we did not expect to see so many lessons in the lower end of the spectrum (cooperation and coordination). What teacher-librarians regarded as collaborative often was little more than resource provision activities and some low-level introduction or resource scaffolding. This suggests a disconnect between existing practice models and

researchers' understanding of concepts. Part of the challenge lies in the how researchers in the field have defined collaboration. Most of the definitions (see Montiel-Overall, 2005) require a high level of symmetry between the classroom teacher and librarian, both in terms of planning and execution of the lesson. This symmetry requirement is absent from other definitions of collaboration, even within LIS (see for example, collaborative information behavior, as defined by Talja & Hansen, 2006).

It is understandable that collaboration in the very deep sense does not occur with frequency. Given that the collaborative lesson described in detail entailed at least a two-to-one ratio of planning to execution, it would be impossible for every lesson to be planned with this depth and care. One must also consider the nature of student assignments varies widely; some lessons take 20 minutes, while others will last days. Inputs are not strictly proportional to outputs in creative lesson planning; collaboration done well, however, appears to involve more time and energy than coordination or cooperation. Teacher-librarians' daily activity will involve a blend of different interactions with classes and individuals, collaboration on units being just one such activity.

Findings Part 2: Perceptions of Collaboration

To gather a broader set of perspectives on how and why teachers work with the teacher-librarian, as well as why they do not, 57 classroom teachers (9-10 informants per school) were interviewed using the instrument included as Appendix D. This interview covered a range of topics, including perceptions of the library and librarian, the information behaviors of high school students, and the strengths and weaknesses of the library program. To inform the findings of the first analysis presented in this paper, this section will focus on the data culled from three questions of this interview schedule: 5) Do you create some of your class assignments with the intent that students will use the school library; 5.1) How often do you bring the class to the library; and 5.3) Do you work with the librarian to create the assignment? Free-form responses were coded inductively. Table 5 provides a cross-tabulation of this data, using visit frequency as an independent variable to analyze the other two questions for patterns.

Table 5: Collaborative behaviors of classroom teachers.

How often does your class visit the school library?			**Do you work with the librarian to create the assignment?**		**Do you create assignments with the intent that students will use the school library?**		
	Freq.	%	Yes	No	Yes	No	Option*
5x per semester or more	18	31	6	12	14	0	4
3-4x per semester	13	23	6	7	6	2	5
1-2x per semester	13	23	6	7	6	4	3
less than 1x per semester	13	23	3	10	2	4	7
Total	57	100	21	36	28	10	19

*Library optional: teachers frequently observed that they create assignments which require research, but do not expect or require students to use the school library.

While the data set is too small (n=57) to discern statistically reliable inferences, some patterns do emerge. Just less than half (48%) of respondents indicate that they create assignments to be performed in the library. Another 33% require student research, but do not require students to use the library to complete these assignments. Together, this indicates that 81% of teachers interviewed expect students to be performing research for their classes. However, only 37% of teachers involve the teacher-librarian in the creation of the research assignment. Interestingly,

teachers who frequent the library with their classes (five times or more per semester, roughly once per month or better) were no more likely to plan their assignments with the teacher-librarian; in fact, they were less likely to do so than those who visit the library twice per year. This suggests that, for this sample of teachers, visit frequency is not necessarily an indicator of a collaborative relationship with the teacher-librarian.

What does predict or even predicate a collaborative partnership? As suggested previously, collaboration in a situation which may be based on a perception of gains and losses. Other researchers have documented the potential advantages of collaboration with the teacher-librarian. The process losses, however, have been more elusive in the literature. Identified losses and gains are detailed briefly in the next section. Qualitative responses to the three questions, where available, were coded to create a typology of factors contributing to pro-collaboration perceptions, as well as a typology of collaborative constraints.

Factors contributing to pro-collaboration attitudes

Inductive coding of the qualitative responses produced three categories of pro-collaboration attitudes, which may be considered process gains. These were: 1) resources for learning; 2) direction and feedback; and 3) a different perspective.

Providing resources for learning. The classroom teachers focused most on how the teacher-librarian provided timely information retrieval and resources for learning, often without prompting. The research acumen of the teacher-librarians in this study impressed many classroom teachers, as well as the administrators we interviewed. A common superlative description relays this sense of respect, if not professional admiration:

> *"The librarian is queen here. (...) It is, I think, a focal point of our school, and I say that because our library is truly a teaching library. She is a teaching librarian. I can go to her and I can say, I was thinking I'd like to do something a little different with my Martin Luther King unit. I'm kind of looking for some web sites that I can play around with. I'm looking for this, that and the other thing. The next day, she'll have it for me. (...) She makes everybody's job easier."*

Providing direction and feedback. Teacher-librarians provided a creative spark for classroom teachers struggling to develop research-intensive instruction, particularly those new to the profession. Comments from two first-year teachers illustrate how the teacher-librarian helped them work through early iterations of assignments, providing mentorship and suggestions for instructional improvement:

> *"For me, [librarian] has been an amazing resource. She's been good on many levels. For me, as a first year teacher, there are so many times that I have been lost in terms of here's what I want to do, how do I do it. [The librarian] has been able to say, 'here are the resources that we have here in the library. This one would be good for this, this one would be good for this.' And she will set things up for me. So all I have to do is bring my kids in and everything's right there."*

> *"The first time I did the assignment, she actually came back to me afterwards and said, you know, it might actually go more smoothly...would you like to incorporate this? Can we talk about this? So, yeah, she did work with me to help improve the assignment that I was working on.(...) she's very good at being encouraging but also being honest and constructively critical."*

Providing a different perspective. Teachers suggested that the unique perspective of the teacher-librarian was a tremendous help in designing lessons, incorporating standards, and

developing methods of assessment. One teacher identified a concrete example of how the "brilliant librarian" had influenced her teaching:

> *"She will think of resources for us and also because she was a teacher, she will just think of fun things to do with the lesson planning. She's, I'm not kidding, a brilliant librarian. She will just help orchestrate it. You know, she just asked me the other day because I had students doing research on the Harlem Renaissance, and she said what websites did you tell them to go to? She pointed out: is your goal that you want them to know where to find it? Or is your goal that you want them to learn about the Harlem Renaissance? Which is a really good question. The goal wasn't for them to learn how to find it. I just wanted them to learn. So she helps me, reminds me of teaching strategies, like a purpose. What was my purpose? I hadn't even thought about that. So they could waste literally the entire period spinning on the internet when that wasn't the goal. She reminds you of stuff that seems really simplistic, but when you're a teacher doing lesson planning you forget sometimes the simplest things."*

These remarks mirror the findings of Van Deusen (1996) who identified the insider/ outsider role that teacher-librarians can plan on a collaborative teaching team.

Factors working against collaboration

In explaining why they did not work collaboratively with the teacher-librarian, classroom teachers revealed a number of factors that weigh against collaboration, which we might consider perceived process loss. These included: 1) non-library access points; 2) barriers to library entry; 3) planning complexity; 4) low-level library instruction; and 5) role perceptions.

Non-library access points. The most common reason for bypassing the library was the availability of alternate access points to information resources, namely computer labs, classroom computers, and local book collections.

> *"I design them more now to just go to the lab. We have a computer lab that's sort of taken the place of going to the library to do research since information is so easy to get on the web. I'll schedule in a lab day, and we'll go and research their topic from, like, the 1920s. Then all at once they can come in and do their research and immediately turn around and do their write up like a magazine article. Create it in Publisher. They can do it all in the lab without going to the library. I couldn't tell you-when I was at my last school, I remember teaching them to go onto ProQuest and some of those databases like that and um, I suppose that the time it took made it less worthwhile. It seemed like it was taking up too much time so just letting them loose on the internet just seems to be a lot more effective, if not as accurate."*

Teachers reported that the amount of project-based work and student research was increasing, particularly with new state mandated assessment systems. Many teachers assigned projects that may or may not be performed in the library; they left it to students to decide how to access these resources.

> *Interviewer: So how often do you bring your students to the library?*
> *Teacher: Maybe once a year honestly. If it's assignment that requires research, I assume that they will go on their own. They have tutorials at lunch or after school or they will do the research part from home. I have my own little library in my classroom.*

The assumption that 80-90% of students had access to the internet at home further drove this approach to research. If the students have internet access at home, then visits to the library are not an effective use of class time:

> *"A lot of them have computers at home so they'll get the websites and then they'll go home where it's quiet and they're not in a group of 34 people, sitting next to other people, and they'll do the research there."*

To a limited extent, teachers associated the library with "print" collections and books, and the teacher-librarian's expertise predominantly with that medium. If teachers no longer require print resources for assignments, the mediating skill of the teacher-librarian is superfluous. One teacher remarked:

> *"We as teachers don't make assignments anymore where the students need print resources. Ask the students here [motions around the classroom]. Maybe two in here have a library book checked out. Why have the library? Why have our money there?"*

The ready access to information on the web, combined with the inadequacy of print collections in many school libraries further reinforces a "do it yourself" research ethos with classroom teachers.

> *"In the early stages of these projects, she would pull books off the shelves for us that we could offer for kids to use, but we found that the books just didn't really have the information that we were hoping kids would get. So we just went to the computer, but we haven't, for example, had her corral together a bunch of web sites and then put them in a folder and then had kids access the things she found. I would say that there's never been a time where [the librarian] and I sat down and created an assignment together."*

Underlying many of the classroom teachers' responses is the assumption that collaboration with the teacher-librarian and use of the library are inextricably linked. In other words, if you are not working *in* the library, the perception is that there is no need to engage the teacher-librarian in preparation or execution of the lesson. This has implications for how teacher-librarians collaborate, given that research projects are seemingly multiplying, and the clear trend is toward pushing technology access toward the classroom.

Barriers to library entry. Teachers frequently reported that the library is often difficult to schedule, and is in constant use, making their use of library resources less frequent. Despite the desire to use the library and collaborate with the librarian, the scheduling of library time was the challenge.

> *"It is hard because of the availability of the library, and you have to plan way in advance in order to get time in the library. They can only have a certain number of kids and classes in there at any given time. This being such a huge school and only having one library, with 2200 kids in this school, the availability is very limited."*

> *"So there's tons of stuff I want to do here in terms of searching, as far as research projects that involve media. If I don't plan it a month out, I can't do it, and I would love to say I'm this brilliant teacher who can plan a month out, but I really can't plan more than a week ahead of time at the current moment."*

This barrier was particularly salient in schools where the library computers constituted a large percentage of the building-wide computing resources.

Planning complexity. Collaboration increases the complexity of unit and lesson planning. Time constraints are a factor in developing assignments collaboratively even when adequate and consistent planning time facilitates teachers working together. Part of the issue is timing, and how well prepared teachers are in developing research assignments:

> *"It's a really interesting idea [collaboration], but you are creating assignments at home at midnight. It's not like you can sit around and chat about assignments to create. [The librarian] is very busy and we're running, that's what we do in this job. In a perfect world, that'd be cool."*

"The librarian is perfectly willing to prepare some materials ahead of time and search web sites, that kind of thing if you give her a head's up, but the nature of teaching is that we're so overworked that we don't have a lot of time to give, to get that consult."

In this study, schools employed team teaching and block scheduling to facilitate integrated curriculum. Many teachers reported that they worked collaboratively with other teachers; yet, they did not work collaboratively with the teacher-librarian. In fact, a collaborative norm may make it more difficult to include the teacher-librarian in the planning stage because the classroom teachers are so busy collaborating—with each other. One teacher remarked:

"Boy, to be completely candid with you, I used the library a lot more when I was a lone wolf (...) Oftentimes, we are just trying to keep on track with each other so much. We're so focused on designing the curriculum and implementing it in a cohesive fashion that we don't think about, I think, using the library as much as we could."

This response reveals the "out of sight, out of mind" challenge that many teacher-librarians face. Collaborating with a near colleague is easier than a far colleague. Teachers revealed that a building norm of collaboration is not sufficient to ensure that collaboration will occur with the library program.

Low-level library instruction. Teachers remarked that the quality of library instruction was often lacking, or at a very low level for high school students. This notion is supported by researchers' observations in situ over the course of the research project. Teacher-librarians often began with very basic directions, starting from the school homepage or research portal, and quickly lost the attention of students. Exhortations to avoid popular internet tools such as Google and Wikipedia often took the form of over-simplifications or platitudes such as these comments recorded in field notes:

"This is better than Google. These databases will make you a smarter user."
"70-80% of online information is not what you need, and many websites are wrong."
"Google is not a learning experience in this library! Don't use it!"
"No Wikipedia – you can't trust it."

Serious discussions of authority control, evaluation criteria, or credibility were absent from these lessons. One teacher remarked that:

"I used [the librarian] once to do a research presentation to my kids and I wasn't real happy with it. I was hoping she would have something a little more specialized to present (...) My mother is a librarian, an elementary school librarian, and she's very big on the idea that the librarian should be collaborating with teachers more: 'you should really find out what your librarian could do for you' and things like that. A lot of teachers don't often see much of a possibility; don't really see that push to collaborate. It's just kind of disappointing when you go down and try to say: don't just tell them, 'Don't use Google.'"

The explanation for low quality instruction does not reside in inadequate training; rather, the ad hoc manner in which students visit the library does not permit instruction to spiral upward from a base level of competence. Interviews with teacher-librarians revealed that they did not have a clear grasp of student abilities, and were afraid to speak "over the heads" of students, potentially alienating them from the research process.

Role perceptions. Only three classroom teachers explicitly stated that it was not appropriate for the teacher-librarian to influence the nature of the assignment. One remarked that assignments are not the librarian's job:

"I let her know what the assignment is. She'll tell me oh, I have the perfect blah, blah, blah for that, but I don't go to her and say, will you help me make this assignment. I don't think that's her job. I think her job is to help me be successful. I think she's more of a helping role. She'll guide me in the right direction if she doesn't have what I need. She'll tell me how to get it."

This type of barrier to collaboration relates to the "grammar of schooling": collaboration in this conservative approach to pedagogy threatens the power of the classroom teacher. One informant remarked:

"[T]he library is seen as an extension of the classroom. If students go there, they've been prompted by an assignment from the first teacher or by some skill building like independent reading, but it's always initiated by the first teacher rather than the library."

This "extension of the classroom" notion places the classroom teacher firmly in charge of the lesson and pushes the teacher-librarian to the role of subservient support personnel. While this attitude was not prevalent in the data set, it is important to note that it still persists.

Summary of process loss perceptions. Any perceived loss of productivity or quality due to working in concert with the library program presents a barrier to the realization of collaboration. It is not unexpected that process loss will occur in collaboration. In fact, many studies of collaboration in other domains find that process losses outweigh process gains. In light of the barriers to collaboration identified here and in other research literature, we should not be shocked or disappointed that true collaboration is rare. Indeed, we should be more surprised that it happens at all.

Classroom teacher informants suggest that the decision to incorporate the library and information resources will be made early in the lesson planning stage. If the library is not present in the early stages of preparation or in an advance unit plan – when the space can be reserved, resources gathered, and collaborative activities initiated – it will most likely *not* factor into the lesson.

The Future of Collaboration? Implications for Practice and Research

Collaboration can produce high quality learning experiences for students which may lead to student achievement. However, in the practice world we find collaboration rare. This is often attributed to barriers outside of the teacher-librarian's control (lack of common planning time, teacher attitudes toward collaboration, principal support) which can be changed by working strategically with the administration and teacher leaders. A close examination of process losses and gains in collaboration presents a slightly different perspective. As demands on information resources and services increase with progressive pedagogy and new technologies, teacher-librarians will need to approach their instructional and resource provision roles from a new angle, rather than convincing the rest of the school community to "play along." Three emerging themes from the empirical evidence make the need for this shift salient:

1. *Demand for information services at the point of need*: Personalizing instruction requires adapting teaching styles to spontaneous inquiry. Furthermore, the "teacher as generalist" approach suggests that incorporating information skills into a wide variety of academic tasks daily will provide a stronger foundation for learning and transferring these skills. Teachers cannot put off the teachable moment until the

library or librarian is available. We must accept that most information seeking to support learning will be done without professional intermediation.

2. *Capacity for providing information services in larger contexts*: In large high schools incorporating new methods of teaching and learning, the demand for access to information outstrips the capacity of school libraries to supply it. The clear solution to upgrading capacity is by moving resources to the network level to accommodate more points of access. Academic and public libraries have already learned this lesson. Rather than pulling users into the library, teacher-librarians must push resources out to the classroom and the home, where students are doing most of their research.

3. *The quality of teacher-librarian instruction*: The teacher-librarians observed in this study were librarians first and teachers second. This is not to say they were incompetent, lazy educators; nothing could be farther from the truth. There were a number of factors, however, which decreased their effectiveness, not least of which was their distance from the dialog of the classroom. Compounding the aforementioned disconnect is the infrequency of library visits, inconsistent instruction (as it is at the will of the teacher, not the teacher-librarian), and the tension between co-instructors as they negotiate their roles anew each time.

The implication of the above themes can be summarized in the following: if we expect students to become effective users of ideas and information, then information literacy will not be taught exclusively by teacher-librarians in the library. A tremendous challenge is the "dosage" of intervention. At most, according to our sample of classroom teachers, students will visit the school library for an instructional session a few times per quarter, and the actual instruction will last fifteen minutes or less. Imagine if we taught mathematics for only an hour or two per year! The lack of a coherent strategy at the curriculum level furthermore makes the dosage ad hoc and ad hominem, decreasing its potency over time as lessons are repeated or skipped, and a firm foundation of skills never materializes.

Whither the Librarian in the Network Age?

This study found that collaboration, at its best can be quite successful, but collaboration itself is insufficient to guarantee improved student outcomes. The "magpie" approach adopted by practitioners in the field, where collaboration is sought and employed where and when it is convenient for classroom educators, produces far more heat than light. Researchers are partially to blame for this: teacher-librarians are continually pressed to collaborate with educators without attention to strategic goals and outcomes, since they are often assumed. We must remember that collaboration is not an end, but a means to achieving student learning. If the process loss (in terms of teaching time and effectiveness, information access, and instructional quality) does not outweigh the process gain, then collaboration may not be the panacea projected by some researchers. For collaboration to be effective, teacher-librarians must focus not on isolated instructional partnerships at the dyadic or team level, but on building-level curriculum collaborations, similar to Montiel-Overall's (2005) Level D collaboration, with the notable exception of the instructional locus.

An important facet of such higher level collaborations will be giving up, at least to some extent, direct information literacy instruction, especially in secondary schools. For instruction to

have effect, it must have both the proper dosage and consistent exposure. Teacher-librarians have long fought against teaching library skills "in isolation;" that is, teaching these skills discretely and not in the context of a classroom teacher's lesson. The result has been a different kind of isolation: information literacy instruction occurring only in the library, rather than embedded in daily learning practices. But if classroom teachers are teaching information literacy, what will the teacher-librarian do? This would appear to be a threat to the profession, and has been interpreted as such in studies where schools attempted to "do without" trained library professionals (e.g. see Loertscher & Woolls, 2002 p.60-1). Much of this professional apprehension is built on the same grounds that foster concerns over classroom book collections and computer labs full of Google. Rather than leveraging these resources, teacher-librarians engage in quixotic fights against them.

Freeing the teacher-librarian from the onus of direct skills instruction, rather than spelling the end of the profession, would present new opportunities. As resources are pushed to the network level, the teacher-librarian must also work at the network level, managing curricula instead of discrete lessons, integrating skills as well as resources into the activities of the classroom on a different scale. The teacher-librarian then becomes a curriculum coach and a manager of information literacy instruction, as well as a partner in assessing the outcomes of instruction. This suggestion does not radically change the role of instructional partner so much as question the level at which it is most effective. The challenge would reside in pushing practitioners beyond the traditional grammar of librarianship.

Implications for Future Study

Despite decades of work on collaborative planning and instruction, the firm link between collaboration and student achievement remains elusive. There are signs of progress in the numerous studies which have emerged in the LIS literature in recent years, including both theoretical and empirical research. In light of this recent work, more systematic approaches to studying collaboration are required. The contribution of this paper has been the description of collaborative practices as they exist in the evolving secondary school, as well as the perceptions of classroom teachers toward working in close concert with the teacher-librarian. Controlling future studies for aspects of these findings (e.g. content areas, high or low perceptions, visit frequency) might permit researchers to assess the role collaboration takes in different types of instructional partnerships. Studies of successful collaborative arrangements are not sufficient to prove that collaboration has a positive effect on student learning. As this study suggests, opportunistic collaboration may provide little in terms of strategic benefits to student learning in the longer term, and could be offset by significant process losses. Systematic collaborative studies which hope to prove achievement gains must track collaborative activities longitudinally.

A consistent oversight in the collaboration literature has been attention to secondary schools and the unique conditions which confront teacher-librarians at this level. As this study has demonstrated, many of the documented barriers at the elementary level (fixed scheduling, teacher prep time, principal support, professional respect) have been replaced by other constraints, including distributed technology access and library capacity. Further research is needed to thoroughly identify these constraints, as well as how teacher-librarians may overcome them in providing information services which truly increase student achievement.

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APPENDIX A

Observation Guide:
During the observation period, the researcher will construct observation notes of the following activities or behaviors:

Librarian observations:
- Helping behaviors (e.g. assisting w/ assignment)
- Directing behaviors (e.g. showing where a book is shelved)
- Managing behaviors (e.g. asking for student passes)
- Instructional behaviors (e.g. teaching use of catalog)
- Position of TL in library (e.g. in stacks, behind desk)
- Other activities (provide descriptions)

Class Behaviors
- How the class enters, leaves the library
- Evidence of preparation for the assignment
- Evidence of library procedures, pre-knowledge of library routines

Student observations:
- Student behaviors with resources (e.g. book or internet use)
- Student interpersonal (e.g. collaborative work, assisting, socializing)
- Interaction with Librarian (describe)

Teacher/Adult observations:
- Interaction with Librarian (describe)
- Interaction with students in class.

Documents Obtained with Teacher consent:
- Sample assignment, assignment rubric

APPENDIX B

Collaborative Teacher-librarian Interview Protocol:
This instrument is used after the observed library activity. The interview is completed with the teacher-librarian only.

Questions:
1. I'd like to begin by asking you to summarize the visit to the library and the activity the class performed.
2. How did you prepare for this activity with the teacher?
3. What aspects of the activity/visit worked well?
4. What aspects of the activity/visit did not work well?
5. How did this library activity support student learning?
6. How will you follow-up this activity? What are the next steps?
7. Was this visit typical of the class' activities in the library? If not, how was it different?
8. How often does this teacher bring his/her class to the library?
9. How often does this teacher send individual students to the library?
10. Aside from class visits like this one, in what other ways do you work with this teacher?

Wrap-Up:
Is there anything else that I didn't ask that you would like to tell me?

APPENDIX C

Collaborative Classroom Teacher Interview Protocol:
This instrument is used after the observed library activity. The interview is completed with the classroom teacher only.

Questions:

1. I'd like to begin by asking you to summarize the visit to the library and the activity the class performed.
2. How did you prepare for this activity with the librarian?
3. What aspects of the activity/visit worked well?
4. What aspects of the activity/visit did not work well?
5. How does this activity support student learning?
6. How will you follow-up with this activity? What are the next steps?
7. Was this visit typical of the class' activities in the library? If not, how was it different?
8. How often do you take the class to the library?
9. How often do you send individual students to the library?
10. Aside from class visits like this one, in what other ways do you work with the librarian and/or library resources?

Wrap-Up:
Is there anything else that I didn't ask that you would like to tell me?

APPENDIX D

Classroom Teacher Interview Protocol:
This instrument is used with classroom teachers selected to discuss their perceptions and uses of the school library.

Questions:

1. How have you been involved in the transition to small schools/ academies/ learning communities?
2. Do you teach differently since the change to small schools/ academies/ learning communities?
   Alternate: Do you teach differently compared to other teaching experiences?
   2.1 Do students learn differently in this environment?
3. What is the role of the library and librarian in your school? Are those roles changing with small schools?
4. How skilled are your students at finding information? At evaluating information?
   4.1 What skills are they missing?
   4.2 What's the best way to teach them these skills?
5. Do you create some of your class assignments with the intent that students will use the school library?
   5.1 How often do you bring the class to the library?
   5.2 Does the library have the right materials?
   5.3 Do you work with the librarian to create the assignment?
6. In a small schools environment, has the demand changed for using the library? Prompts: collections, space, computers, etc.?
   6.1 Do the different schools/ academies / communities have different needs?
7. What are the strengths of your high school library? What are the weaknesses?
8. Is there anything else you'd like to tell me about the teacher-librarian or library?

Graduating Students Who Are Not Only "Learned" But Also "Learners"

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In the 19th and early 20th century, a person who had acquired enough knowledge was considered "learned" or "educated." Writing in 1984, Richard Derr quotes from R. S. Peters' 1967 definition of an "educated person":

> "According to Peters, we call a person 'educated,' if (1) he (sic) has some body of knowledge; (2) he has an understanding of principles which provide an organization for facts, (3) the body of knowledge characterizes his way of looking at things, (4) he is committed to the standards on which the body of knowledge rests, and (5) he possess a broad cognitive perspective." (Derr, 1984)

Toady's graduates must leave school with knowledge, to be sure. However, the pace of new knowledge generation and change calls for today's graduates to be more than "learned" or "educated." Today's graduates must be learners as well. A learner must possess knowledge, skills, and dispositions that will facilitate their continuing to learn independently past their school years.

Consider these facts from *Did You Know?,* a video by Karl Fisch, Director of Technology at Arapahoe High School in Colorado; Fisch provides the video and citations for the facts he cites and these can be found at his blog (http://thefischbowl.blogspot.com/).

- One in four workers today is working for a company for whom they have been employed for less than one year (United States Department of Labor).
- Today's learner will have 10 to 14 jobs by the time they reach the age 38 (United States Department of Labor).
- The top ten jobs that will be in demand in 2010 did not exist in 2004 (Richard Riley, Former Secretary of Education citing *The Jobs Revolution: Changing How America Works* by Steve Gunderson, Roberts Jones, and Kathryn Scanland).
- One week's worth of *New York Times* contains as much information as a lifetime's worth of information in the 18th century (Richard Wurman in *Information Anxiety*).
- Over 2.7 million Google searches are performed each month.
- The number of words in the English language is estimated at 240,000—five times the count in Shakespeare's day
- Technology information doubles yearly; this implies that for a student in a four-year technical program, half of what was learned in the first year could be outdated by the third year!

Fisch's observations bring home the reality that our graduates must be learners in order to survive the dramatic and rapid changes they will encounter in their lives.

We find today a substantial number of initiatives and standards aimed at defining the knowledge and skills that graduates much possess. For example, *Results that Matter* is the product of work by a partnership among corporate, education, and government entities to arrive at a vision for 21st Century Learning. The vision proposes the following key elements:

- Core subjects: English, reading or language arts, mathematics; science; foreign languages; civics; government; economics; art; history; and geography.
- Emerging content areas: global awareness; financial, economic, business and entrepreneurial literacy; civic literacy; health and wellness;
- Learning and thinking skills: critical thinking and problem-solving; communication; creativity and innovation; collaboration; contextual learning; information and media literacy skills;
- ICT literacy: ability to use technology to develop knowledge and skills, in the context of core subjects
- Life skills: leadership, ethics, accountability, adaptability, personal productivity, personal responsibility, people skills, self-direction, social responsibility.
- Assessments: use of standardized and classroom assessments

Results That Matter is just one of many proposals for what students should learn in school. Similarly, each discipline has defined its standards for the knowledge and skills that students must possess, e.g. , National Council of Teachers of Mathematics, National Council for the Social Studies. The pressures for accountability and assessment increase the likelihood of emphasis on knowledge and skills that are readily measured through standardized and/or objective testing.

Knowledge and skills across the disciplines provide an essential foundation for students to face the world of change that they will encounter. However, development of a static knowledge bank will not serve them well in the world they will enter upon graduation, if Fisch's descriptions and predictions are on target. It will be development of dispositions toward learning and skills to continue to learn that will be of utmost importance in their lifetimes. Students must have a disposition toward inquiry. That is, they must be curious and ready to pose significant questions. Ron Ritchhart (2001) explores the question of disposition for learning as an alternative view of intelligence. Ritchhart proposes that intelligence may in fact be construed as "a collection of cognitive dispositions that capture one's tendency to engage in certain patterns of thinking" (p. 143). Citing Baron, Ritchhart asserts that dispositions are "learned tendencies or cognitive styles under our control." The notion that dispositions can be learned stands in sharp contrast to the definition of intelligence as a measure of inherent abilities. Upon examination of six researchers' lists of dispositions toward learning and habits of mind, Ritchhart synthesizes them into seven categories.

Costa and Kallick (1999) use the phrase "habits of mind" to describe a similar concept about learners and learning. In their work, they list sixteen "habits" not dissimilar from Ritchhart's "dispositions." In their discussion of habits, Cost and Kallick assert that educators are "interested in enhancing the way students produce knowledge rather than reproduce it" (p. 7). They propose that educators want students to inquire and think flexibly.

Similarly, the draft version of the American Association of School Librarians *21st Century Library Learning Standards* propose not only skills, but also dispositions. The importance of dispositions is evident in initiatives underway to examine college readiness as well. Ritchhart's list of dispositions for learning are generic, i.e., cutting across all disciplines. However, there are nuances of dispositions for learning that may be unique to specific disciplines. The Center for Educational Policy Research at the University of Oregon has sought to define what high school

graduates need to know and be ready to do in order to succeed in higher education. With funding from the Pew Charitable Trusts and sponsorship from the Association of American Universities, this organization has set out to examine the question of readiness for college. While preparation for higher education is the explicit focus of their work, it is difficult to argue with the appropriateness of much of their work for graduates who choose other paths after high school as well. Their work is published in three forms: a booklet entitled *Understanding University Success*, a book entitled *College Knowledge*, and a website at www.s4s.org. While readers will find here knowledge and skills not unlike those found in other standards and school reform initiatives, the point of emphasis here will be on "dispositions," i.e., what attitudes toward learning ought students to have as they leave high school? If students will indeed enter an age characterized by remarkable change in the information landscape, it will be their *disposition* toward learning that may in fact be most important to their success.

In *Understanding University Success*, standards are defined for English, Mathematics, Natural Sciences, Social Sciences, Second Languages, and the Arts. In Table 1, descriptions of dispositions for learning from Ritchhart, Costa and Kallick, the American Association of School Librarians, and *Understanding University Success* are compared. These dispositions are essential for success in an era of rapid and deep change and knowledge growth.

Table 1. Dispositions for learning

Ritchhart	Costa and Kallick	AASL	Examples from *Understanding University Success*
be open-minded	thinking flexibly taking responsible risks remaining open finding humor listening with empathy creating	maintain openness display resilience demonstrate creativity	"ability to view facts from multiple perspectives"—Second Languages
be curious	persisting responding with awe	display curiosity appreciate literature	"must allow questions to emerge from the text"—English "inquisitiveness and willingness to investigate the steps used to reach a solution"—Mathematics "curiosity and a willingness to explore many layers of meaning"—The Arts
be metacognitive	thinking about thinking	demonstrate confidence and self-direction	"taking risks and accepting failure as part of the learning process"—Mathematics "acceptance of failure and ambiguity [are] part of the experimental process"—Natural Sciences
be strategic	applying past knowledge to new situations striving for accuracy	demonstrate adaptability demonstrate teamwork	"integrating scientific methods and contextual understanding, critical thinking, and hands-on skills"—Natural Sciences
be investigative	questioning and posing problems	display initiative and engagement	"using experimental thinking"—Mathematics
reason	managing impulsivity thinking independently communicating with clarity	maintain a critical stance	"make connections regularly between public knowledge and personal observations and experiences"—Social Sciences "make connections across disciplines"—Social Sciences
use evidence	gathering data with all senses	test against evidence	"make supported inferences and draw conclusions based on textual features"—English

There is remarkable similarity among these portrayals of the disposition of a learner. A challenge for educators is to design experiences that facilitate students developing these dispositions—it is the opportunity to leave school with the dispositions of a learner that should be the entitlement of every American high school graduate.

Library media programs occupy an ideal place for collaboration with teachers from all disciplines to develop in students such dispositions for learning. Library media centers can be the exploratoriums in schools, and teacher librarians can be the docents, the guides, the facilitators for students' explorations. If one were seeking a single word to summarize the dispositions Ritchhart and others propose, *inquiry* may be that word. Kuhlthau (2001) describes inquiry in this way:

> Inquiry-based learning is an approach to instruction that centers on the research process. . . Students are guided through inquiry by asking themselves: What do I already know? What questions do I have? How do I find out? And finally, what

did I learn? Inquiry takes students out of the predigested format of the textbook and rote memorization into the process of learning from a variety of sources to construct their own understandings.

Inquiry-based library media programs afford schools the opportunity to provide:

- a skill set for learners
- a context for developing the dispositions necessary to be learners
- resources to support learning-to-learn experiences

Foundation skills are essential for the independent learning that graduates must be prepared for in their adult world of rapid change. These skills can be summarized as the skills necessary to locate, access, evaluate, interpret, and communicate information. While these skills can be readily summarized, they represent a complex set of competencies that depend upon ability to initiate substantive questions, to read and think critically, and to use technology at all stages of the information process (to access, to analyze and interpret, and to communicate). The skill sets are defined more fully in The 21st Century Library Learning Standards from the American Association of School Librarians (web site) and National Educational Technology Standards from the International Society for Technology in Education (http://cnets.iste.org/students/s_stands.html).

The challenge for schools to develop the appropriate dispositions for a world of rapid change may be more complex. If we use Ritchhart's synthesis of the dispositions of learning, we can perhaps consider how the library media program contributes toward developing such dispositions:

- be open-minded. A foundation principle for library collections is the provision of multiple perspectives. By engaging students with a range of resources that bring students into an intellectual exchange, teacher librarians can create a context that encourages consideration of multiple viewpoints. An environment of acceptance of difference is essential. The library should be the politically and socially neutral environment that avoids pre-judgment and encourages exploration.

- be curious. By providing an array of resources that can pique interests of students, the school library media center can serve as the stimulus for curiosity. While essential, a collection of current and high-quality resources alone will not be enough to engender curiosity. Teacher-librarians must serve as mediators between students and the collection. In that role, they can model curiosity as they help students consider what questions they could pursue and guide them to resources in that pursuit. Whether they are sharing stories with young children and encouraging questioning and further exploration or they are discussing ideas for a senior research project, teacher librarians offer unique expertise in the inquiry process.

- be metacognitive. When students engage in any sort of library research, it is important for them to learn to ask and answer the questions, "When do I have enough information?" and "Is my information of high enough quality?" and "Am I pursuing a worthwhile question?" "Have I investigated various perspectives?" A disposition of self-assessment can readily be taught in the context of the library media program. As we consider the world of information change for today's students, such a disposition will be crucial to them as independent learners.

- be strategic. The library media center provides an excellent laboratory for strategic thinking. To begin, students must have an appropriate mental model of the information search process—they must see it as a process of authentic inquiry, not a process of transfer of information from a source to their end product. The library media program needs to help students learn to be planful as they pursue interests of their own. If they are engaged in appropriately complex assignments that are open-ended so that they generate their own questions and learn to design strategies for information problem solving, they will gain practice at strategic thinking. However, strategic thinking does not necessarily occur without guidance, instruction, and prompting.

- be investigative. Given appropriate prompts and opportunities, students can use the library media center to explore and to problem-solve. Topical queries are too superficial to be truly investigative. Teacher librarians help students focus their investigations narrowly enough that they can examine questions in depth and arrive at findings and insights of significance.

- reason. The library media center offers a reasoning playground. When a teacher librarian and a classroom teacher plan together, they can create meaningful opportunities for students to develop their abilities to reason. The role for the teacher librarian is to challenge students' assumptions, question their assertions, point out fallacious reasoning, and insist on adequate evidence and evaluation of sources of information. A teacher librarian values persistence in the inquiry process.

- use evidence. By searching for information in the library media center, students can develop an appreciation for the use of evidence to support an argument or to make a decision. Challenging the authority of sources, teaching students to seek verification and to reconcile differences between sources of information are the kinds of critical thinking skills that can be taught when students are working with information from an array of resources—processes not possible in textbook-only instruction.

In order for the library media program to contribute to the development of these dispositions for learning, collaboration between the classroom teacher and the teacher librarian is essential. Much of what students learn in school is situated in the context of the assignments their teachers design for them. Working with a teacher librarian, classroom teachers can design assignments that capitalize on the library media program's potential to facilitate students developing dispositions toward learning. A crucial consideration is that these assignments must engage students in work that will challenge them to be curious, to be open-minded, to reason, to be metacognitive, etc. Gordon (1999) posits that "Reporting has masqueraded as researching for so long that the terms are used interchangeably." Indeed, we want students to extend beyond reporting to arriving at insights—at seeking answers to authentic and substantive questions. In the words of Newman, Secada, and Wehlage (1995), they must be assignments that will engage "students in using their minds well." These researchers consider critical criteria for student assignments to be

1) students constructing meaning and producing knowledge;
2) students using disciplined inquiry; and
3) students aiming their work toward production of discourse with value beyond success in school.

To gauge how well assignments meet those criteria, they define four standards of authentic instruction:

1. *Higher order thinking*. Analysis, synthesis, and evaluation are processes residing at the higher order of complexity.
2. *Deep knowledge*. Focusing on central ideas of a topic with enough thoroughness to explore connections and relationships and to produce relatively complex understandings.
3. *Substantive conversation*. Students engage in extended conversational exchanges with the teacher and/or their peers about subject matter that builds an improved and shared understanding of ideas.
4. *Connection to the world beyond the classroom*. Students make connections between substantive knowledge and personal experience.

Teacher librarians working in collaboration with classroom teachers can design assignments that meet these criteria. The library media center provides the context where these assignments can be pursued in a setting where the teacher librarian remains mindful not only of the skills necessary to accomplish information work, but perhaps more importantly of the learning dispositions to be developed. Awareness of dispositions requires that teacher librarians take proactive and intentional steps to develop and support learning dispositions; these might include:

- modeling learning dispositions. Thinking aloud to model curiosity or open-minded dispositions is one strategy for modeling. For example, a teacher librarian might be heard saying, "That makes me wonder. . ." Or, "What might be the argument on the opposing side of this question?" Or, "What evidence supports that assertion?" Or "How strong is the evidence on the other side of the argument?"
- posing and encouraging questions that generate authentic inquiry. Teacher librarians and classroom teachers use the Newmann, Wehlage, and Secada four criteria for authentic assignments to design assignments.
- encourage metacognitive behavior. Students may be required to keep a reflective research journal where they record their perceptions about their progress. Or, students might write a reflective self-assessment describing what they might do differently if they were to approach an assignment anew.
- reason and use evidence. Teacher librarians and classroom teachers together guide students in critically selecting and reading articles to assess evidence and logic.

Intentionality is important. It is not enough to mention or expect that students will develop dispositions of learning as by-products of their school experiences. Developing the disposition of a learner occurs by design. Collaboration between teacher librarians and classroom teachers can result in assignments and activities that aim intentionally at authentic inquiry and at developing dispositions that will results in graduates who are learners.

Recall the innate curiosity and enthusiasm for learning evident as the kindergarten child arrives at the school house door. It should be the entitlement of every high school graduate to leave the school house with that same curiosity and enthusiasm to learn. It is up to all educators to help not only sustain but enhance those dispositions for learning in order to send off a generation of graduates ready to be learners in a changing world.

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Reflection on the Teaching and Adoption of Think Models as a Method of Banning Bird Units From the Library

Carol Koeschlin
Sandi Zwaan
David V. Loertscher

We have had the opportunity to present the think models in *Ban Those Bird Units* and now its companion volume, *Beyond Bird Units* in many areas of the United States. These presentations have been with librarians of course, but in a surprising number of places, we have had many teachers and to our satisfaction, a number of administrators who *have stayed all day.*

Bird units, those low-level cut and paste activities are so rampant across the U.S. and Canada that it became apparent to us that libraries, unwittingly, were contributing to and facilitating mediocre assignments. Teachers in our audiences realize instantly that this is the case when they have a chance to think and reflect about their practices in a non-threatening environment. Their response is as expected: What could we do to transform what we have done so many times in the past?

We teach the all the models have a pattern. The first half of any library assignment is business as usual. We try to get students to build a question and extract information from our print and digital collections and try to become a mini-expert about something. Nothing new there. What is new, is the concept that filling in a worksheet, writing a report, or doing a PowerPoint presentation is not the end. When students know something about their bird, their issue, their state, their person, it is the beginning, not the end. This seems to be a unique idea to most. At the very moment when students have done research and tried to learn the basic knowledge about a topic they finally know enough to really learn something in depth – not just about what they researched, but about what the entire group learned. What a novel idea this is as we present – the idea that every student takes their piece of knowledge – their puzzle piece – and fits it into the class puzzle. What appears? The Ah Ha! The Big Idea. The So What. Something akin to the general concepts of understanding usually present in state standard requirements.

In any of our workshops, as soon as participants get the big idea that library research always end up in a big think, they immediately begin to transform mundane assignments into exciting ones. At first, we encourage them to follow the models as outlined by the authors. Invariably, however, they start to creatively adapt the models to various topics, grade, levels and types of students in ther own schools. This has made us more than pleased. As authors, we have tried to stimulate the notion that the best instructional ideas that already work generally only need a bit of tweaking to turn them into exemplary teaching and learning – active learning, engaging learning, and in an environment where plagiarism is really not an issue.

So, our basic tenet has been and continues to be: If the library is to be relevant in the 21st century, then the teaching and learning that goes on there have to be the most exciting, absolutely superior to, and, more engaging than anything that a single teacher could possibly do in the classroom alone.

The following page is a big think for anyone acquainted with the think models Perhaps some reflection will stimulate the best in library teaching and learning.

✳The Big Think✳

What has been the impact of the THINK models on teaching and learning in the library?

The School Library is a knowledge building environment. Librarians cannot claim a contribution to teaching and learning unless literacy and understanding are being built day in and day out. David Loertscher, 2005

So What?

What do we need to consider, to ensure success:

- What skills and literacies will students need in the 21st century?
- How can we enhance reading, writing and thinking in content curriculum?
- How can we design for building big ideas and deeper understanding?
- How can we work toward success for all students?
- How can we move beyond those bird units?

What are bird units?
- 'all about' projects
- fill-in-the-blanks worksheets
- regurgitate answers to teacher questions
- textbook 'research'
- term 'report'
- cut, paste and plagiarize
- assess product only
- value only bells and whistles

We have discovered that The THINK Models:

- apply **critical** and **creative thinking.**
- build **cross-curricular literacy** skills and new literacies.
- are **engaging** and **effective.**
- empower students to build **deeper understanding.**
- are **knowledge building** learning experiences.
- are a framework for designing **successful assignments.**
- effectively utilize information and **technology-rich learning environments.**
- provide opportunity for **differentiated instruction.**

Classroom teachers can work to the benefit of many more students by implementing **patterns of instruction** likely to serve multiple needs. *Integrating Differentiated Instruction: Understanding by Design* Tomlinson and McTighe

What we have found that works with the models!

- Design for understanding
- Differentiate Instruction
- Implement Evidence Based Practice
- Use the Think Models Creatively

What is understanding?
"You understand it only if you can teach it, use it, prove it, explain it, defend it, or read between the lines."
Understanding by Design Wiggins and McTighe

What Next?

- Follow the design down process.
- Select a model that fits the information problem or issue.
- Provide students with an information-rich environment.
- Teach information literacy skills when needed.
- Infuse appropriate ICT in program design.
- Gather evidence of success.
- Consider designing your WebQuest using a THINK model at the Processing Stage.
- Use the Web 2 environment to design collaborative workspaces for students based on the THINK models.
- Experiment and tweak the models to fit your need –**transform your old units!**
- Design your own THINK Models

✳The Big Think ✳ activity elevates library projects. The product isn't the end, it is the beginning!

Bottom Line... Use the Think Models to demonstrate that Collaboration in the Library Is the Best Teaching and Learning in the School!

Action Research Training for School Library Media Specialists: A Study of a Three-Dimensional Model

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Introduction: The Problem

Technology is changing the way we view teaching and learning in the 21st century. Second life, social networking, and other Web 2.0 developments challenge conventional teaching and learning in highly interactive digital environments. The Net Generation thrives on a seductive and intuitive Internet that promotes self-directed learning in a dynamic environment of information and disinformation. A highly competitive global economy calls for major change in an educational system that is stuck in an industrial mode (New Commission on the American Workforce, 2006). Models of 21st Century teaching and learning (Partnership for 21st Century Skills, 2004) call for basic communication skills, problem-solving, and the ability to creative and innovative. What are the implications for school libraries?

> In order for school libraries to play a key role in the information age school, I believe there needs to be a fundamental shift from thinking about the movement and management of information resources through structures and networks, and from information skills and information literacy, to a key focus on knowledge construction and human understanding, implemented through a constructivist, inquiry-based framework. (Todd, 2001)

Implicit in this paradigm shift is the development of higher order thinking, discovery, and creativity. This involves a hard look at what we are doing and a structure for building a pedagogy that promotes knowledge construction and deep understanding. The overriding question is, what needs to change?

"The research assignment acts as a reporting exercise when student involvement is limited to information gathering, which is usually demonstrated by reading, taking notes, and writing a summary. Reporting has masqueraded as researching for so long that the terms are used interchangeably (Gordon, 1999). In a study that interviewed ninth graders as they worked through a research assignment, students revealed that their perception of doing research was writing a grammatically correct report that was well-presented and provided other peoples' answers to someone else's question. The research process was not internalized in the school library; it was perceived as an extension of classroom practice. Students talked about it as though it was a test; creativity and inquiry were not perceived as part of the process and grades were perceived as the most important measure of success. (Gordon, 1996).

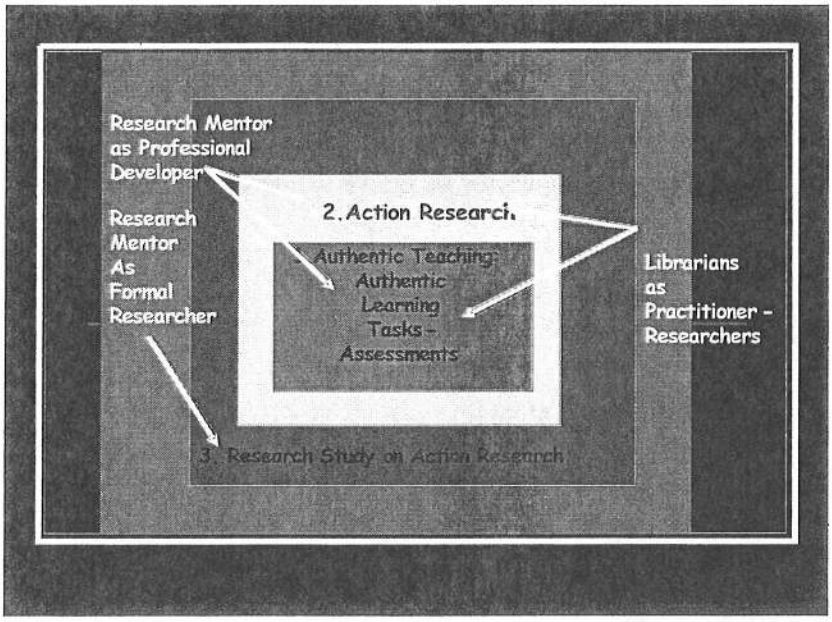
In a study of a 10th grade "authentic research" project that required students to engage in data collection and analysis as well as information searching and use, students were asked, "How was this research assignment different from what you have done in the past?" They replied, "In the past I was given full instructions on the essay. Now I had to do it by myself." When asked what the best aspect of the project was, one student wrote, "That we stood on our own two feet!" (Gordon, 1999). Another student commented, "I never did proper research before. It was the first real serious research I have done. It was much longer and more difficult than previous papers. It was also much more interesting and more fun as well." (Gordon, 1999) Authentic research promotes higher order thinking skills and knowledge construction. As a viable methodology, however, the lms must know how to do research and how to teach students to do it. How can this kind of training be provided to practicing library media specialists?

The Purpose of the Study: The Three-Dimensional Model

This study examines the implementation of a 3-Dimensional model (fig. 1) in a school district over a period of one year. The study addressed the following questions:

1. How will the 3-Dimensional model of action research work as a training model for school library media specialists when guided by a researcher, called Mentor Researcher (MR)?
2. How will action research inform the practice of school library media specialists, called Practitioner Researchers (PRs)?

Figure 1: The 3-Dimensional Training Model for Action Research



In the first dimension of the model, Authentic Teaching, each PR, designs an authentic learning tasks (ALTs) and authentic or performance-based assessments (Wiggins, 1992) in collaboration with a classroom teacher, in the context of a unit of guided inquiry. The criteria for the ALTs are noted in Table 1. This methodology lends itself to action research because ALTs generate formative assessments that provide ongoing feedback of student progress. Hence the PR has a flow of evidence to guide her practice.

Table 1: Criteria for an Authentic Learning Task

Content	Methodology	Design
The task -is meaningful, academic -relates to internal and external learning standards -uses tools of the expert -requires problem solving -culminates in a summative assessment - includes presentation, and/or sharing of outcomes	The learner -uses prior knowledge -applies information to new situations -uses divergent/critical thinking -engages in a variety of tasks -has choices -uses formative assessments for self/peer evaluation and revision -sometimes works in groups	The design -includes clear expectations and outcomes -provides exemplars -identifies resources -offers assessment tools appropriate for the task --includes input from learners and teachers for assessment, task evaluation and revision

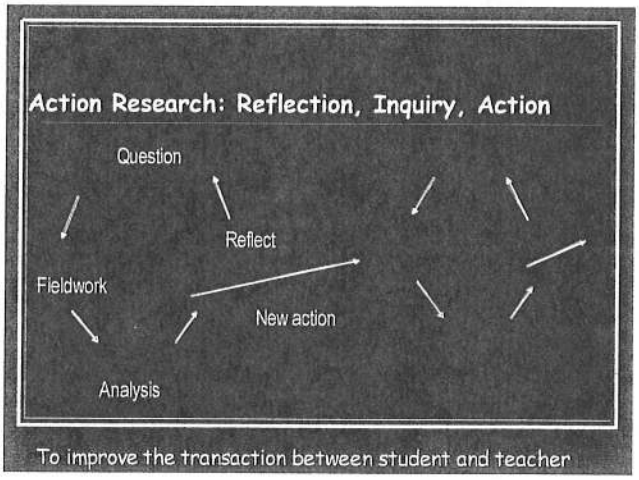
In the Second Dimension (fig. 1), Action Research, each PR poses a research question that addresses a problematic aspect of instruction. In addition, the MR frames a generic research question for all PRs to use: How can I do it better next time? To address these questions, the PRs use feedback from formative assessments as data, and conventional qualitative methods to collect data, e.g., observation and journaling, surveys, and interviews.

The third dimension of the model (fig. 1), Research Study on Action Research, is the subject of this article. The MR conducts a formal research study that examines how the first and second dimensions of the action research model are working to inform the practice of the PRs. The MR provides support to PRs through support materials (e.g., templates, help sheets, models) and an open channel of communication.

What is Action Research?

The theoretical framework of the study rests on action research as a tool of evidence-based practice. "Evidence-based practice is where day-by-day professional work is directed toward demonstrating the tangible impact and outcomes of sound decisions making and implementation of organizational goals and objectives." (Todd, 2003, p. 7) Action research is problem focused, context specific, and future oriented and aims at improvement and involvement (Hart & Bond, 1995). Boomer (1987, p.8) defined action research as a "deliberate, group or personally owned and conducted, solution oriented investigation." Anderson, Herr, & Nihlen (1994, p. 2) defined it as "insider research done by practitioners using their own site as the focus of their study...it is oriented to some action or cycle of actions that practitioners wish to take to address a particular situation." The components of action research are reflection, inquiry and action (Patterson and Shannon, 1993). Figure 2 illustrates the recursive nature of these three elements.

Figure 2: What is Action Research?



Why Action Research?

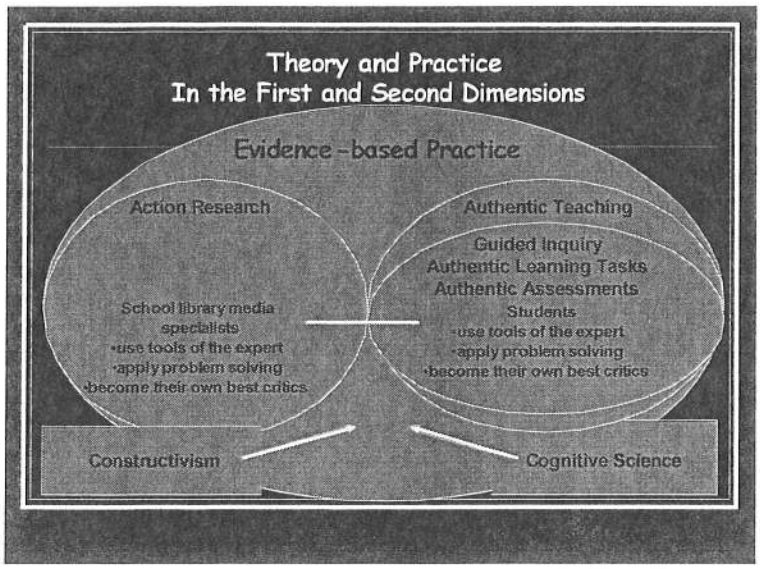
Action research has been heavily researched with positive results. Research on educational change indicates that change is more likely to occur when participants feel ownership of a problem and feel connected to the solution (Anderson, Herr, & Nihlen, 1994). Reflection helps PRs understand what they are currently doing, why they are doing it, whether it is what they want to do, and what they should do in the future (Patterson, 1996). Reflection can identify weaknesses and strengths and validates decision-making inherent in the teaching process. Reporting results of action research can provide vicarious experiences related by narrative accounts from schools and classrooms which educators find more helpful than formal educational research (Anderson, Herr, & Nihlen, 1994).

Action research develops skills that equip the PRs to make the leap from information to knowledge-based assignments. It is especially relevant to the teaching content of librarians: it addresses information and data gathering and other aspects of the research process, and the skills students need to develop habits of life-long learning. PRs benefit from refining their own research skills, gaining confidence to replace student research assignments that are stuck in a "reporting" mode with guided inquiry that uses authentic research methods.

Action research is a reflective process that helps to elevate the academic climate of a school as students observe their teachers as curious learners engaged in a research model that is authentic and rigorous. It is well-suited to studying the relationship between student performance and teaching practice:

It bridges the gap between theory and practice (fig. 3). Action research for professionals and authentic learning tasks (ALT) for students share common characteristics. They are rooted in evidence-based practice and principles of constructivism and cognitive science. They require the use of the tools of the expert and engagement in problem solving, with the goal that participants will become their own best critics, empowered by evidence that improves performance.

Figure 3: Theory and Practice in the First and Second Dimensions



The collaborative nature of the classroom teacher/library media specialist relationship in planning and instruction is ideal for action research.

> Action research is a form of collective self-reflective enquiry undertaken by participants in social situations in order to improve the rationality and justice of their own social or educational practices, as well as their understanding of those practices and the situations in which the practices are carried out... The approach is only action research when it is collaborative, though it is important to realise that action research of the group is achieved through the critically examined action of individual group members." (Kemmis & McTaggart, 1988, pp. 5-6).

When library media specialists incorporate action research into their teaching on a daily basis and share action research with colleagues, collaboration becomes an opportunity for professional development.

> Action research incorporates many of the qualities of an 'ideal' staff development program. It is individualized and can be used by a teacher at any developmental level. It assumes teachers are knowledgeable and gives them power to make decisions. It can be carried out collaboratively. It is an on-going process and for that reason can be more effective than a typical one day in-service presentation. One of the more significant qualities of action research is that it puts the teacher in the position of accepting more responsibility for her (his) own professional growth. (Wood, 1988, pp. 16-17)

Action Research as Defined in this Study

Action research is more often a form of qualitative, or ethnographic research, and can include collection and analysis of quantitative data. In all instances it seeks to understand why something happens, rather than documenting the frequency of occurrence to establish what is happening, and involves smaller samples of participants for the purpose of gaining insight and depth of understanding of a specific case rather than generalizing from sample to population. Action research is distinguished from formal research in that its results are articulated through an action plan. Following the vision of Bogdan & Biklen (1992, p. 223), action research in this study is considered a frame of mind, "a perspective that people take toward objects and activities."

Although well-conceived in its purpose and well described in its intent, there is lack of consensus with regard to its methodology. For the purposes of this study, action research meets the standards of formal research. According to Isakson and Boody (1993) methodology should address standards established by Lincoln and Guba (1985), including: credibility from multiple data sources, or triangulation, that addresses internal validity; transferability that addresses external validity, or credibility; dependability of conclusions that logically connect to findings that are shared with colleagues to ensure accuracy; and confirmability, or evidence from field notes provided to support interpretation.

The Setting for the Study

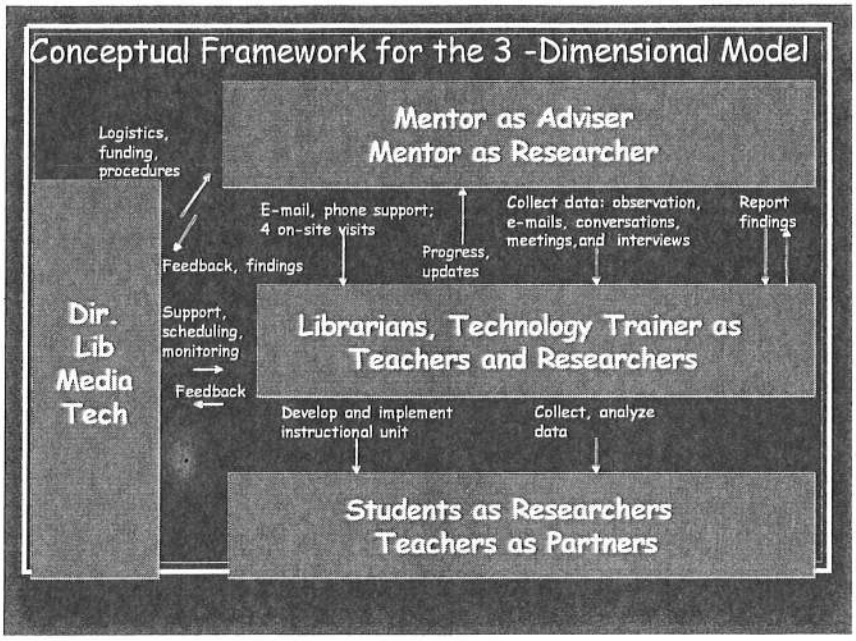
The study involved the entire Library/Media staff in a suburban/rural school district: eight library media specialists: three experienced, full-time elementary lms, one middle school lms who was completing her certification, two full-time and one part-time high school library media specialists, and a technology integrationist. The library program has won the national award, School Library Media Program of the Year, conferred by the American Association of School Librarians, and it is well-regarded in the district as an integral part of learning and teaching.

Conceptual Framework for the Study

The conceptual framework for this model (fig. 4) illustrates the roles and interpersonal dynamics of the participants, as well as data collection methods. .

Multiple sources of data were triangulated. An action research training session was held for the participants by the MR. Ongoing support for the PRs was delivered through five on-site visits, 221 e-mails, and five telephone conversations with the Director. Feedback on design, feasibility, and validity of the PRs' action research was ongoing and intense and included theoretical readings, data collection instruments, models, examples when appropriate. Interviews were held with individual PRs during four on-site visits to focus on data collection methods and analysis of data. A debriefing session was held to verify the MR's findings at the end of the year, and to process and plan the second year of the action research project. A departmental meeting at the end of the study focused on sharing findings and gathering feedback from the PRs.

Figure 4: Conceptual Framework for the 3-Dimensional Model



Findings

The rapport and communication between the Director of Library Media and Technology Services and the MR was a key element in the project. Twenty-nine emails (Table 2) were supplemented by five telephone calls and face-to-face meetings that served to monitor progress of the action research. The content of these emails included logistics, strategy, and evaluation.

Table 2: Email Transactions between the Director and the Mentor Researcher

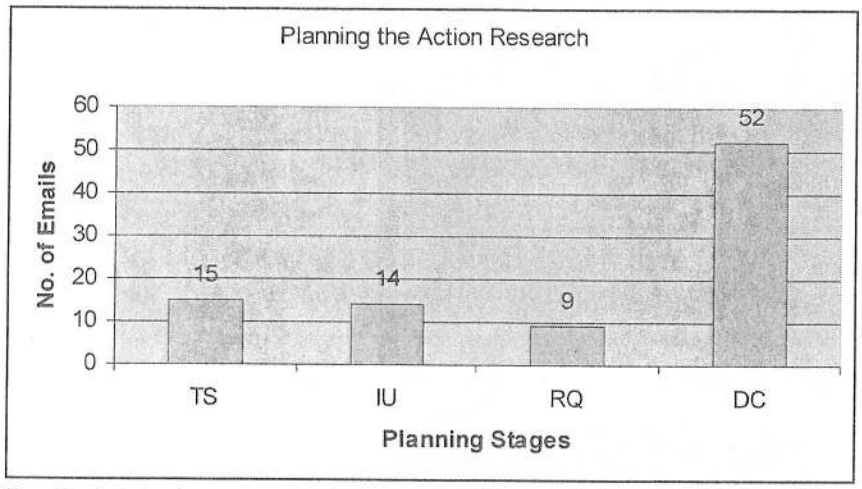
	From Director to Mentor Researcher	From Mentor Researcher to Director	Totals
Number of e-mails	15	14	29
Total words	1,434	2,637	4,071
Categories	11 Logistics	5 Logistics	16
	3 Strategies	8 Strategies	11
	1 Evaluation	1 Evaluation	2

The ratio of e-mails initiated by both parties was almost one-to-one, indicating good flow of communication. The Director took the initiative and responsibility for most of the logistics, which included provision of supplies, setting time frames and deadlines, scheduling of on site visits, interviews, and debriefing sessions for with the MR and PRss, and setting agenda items related to the action research for monthly departmental meetings. While the Director was cognizant of all transactions since she received all emails and monitored progress, she allowed free flow of dialogue among the PRs and MR. She provided encouragement and guidance when needed. The MR initiated emails and conversations to the Director related to defining strategies, such as setting the purpose of the action research project and formulating policy and decision-making regarding the action research process itself.

Most of the support given to the PRs was through 192 email transactions:
1) The MR differentiated help through one-to-one email communications. These messages were, for the most part, PRs presentation of work and requests for feedback.
2) Group emails were an efficient way to address common concerns and offer elaboration and clarification of concepts and procedures. Examples of topics of these emails were feasibility, particularly with regard to time constraints, reliability and validity, and completion of the proposal template. The types of assistance given included advice on methodology, clarification, and feedback.

The data indicate two phases of the action research: Planning and Implementation. Figure 5 shows there were 90 planning emails, which comprise almost 50 per cent of all emails.

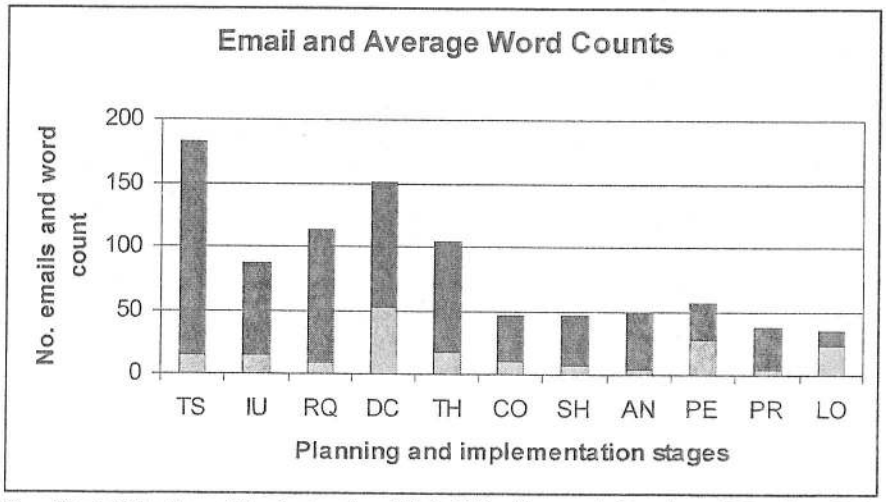
Figure 5: Planning the Action Research



TS = Topic Selection IU = Instructional Unit RQ = Research Question DC = Data Collection

These included help with topic selection, designing the instructional units (IUs), formulating the research question, and planning collecting data. Figure 5 indicates the total number of emails devoted to the first three of these, TS, IU and RQ, totaled 38, which does not reflect the intensity of these transactions. To address this, an email was determined to be about one of these four research component if it contained more than one sentence about it. This was considered a paragraph and the paragraph was the unit of analysis. The MR analyzed the data in Figure 6 by comparing the average number of words in these paragraphs to the number of emails written about a research component to determine what was problematic for the PRs. These word counts do not include attachments that contained drafts and completed versions of the PRs work.

Figure 6: Number of Emails Compared to Average Word Counts

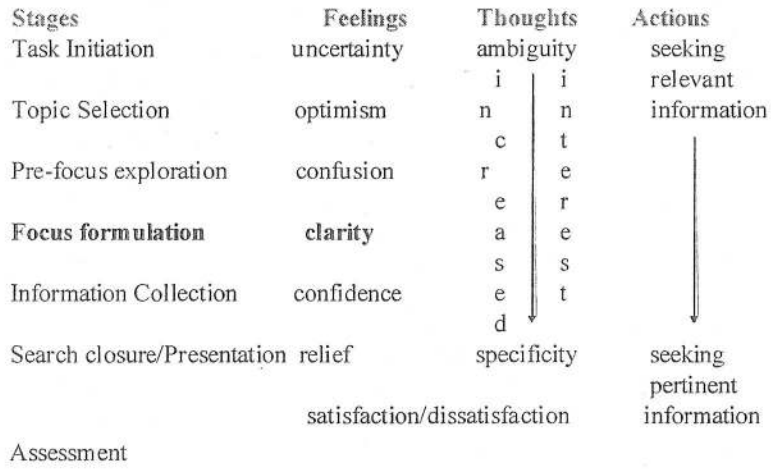


TS = Topic Selection IU = Instructional Unit RQ = Research Question DC = Data Collection
TH = Theoretical Framework CO = Collaboration with teachers SH = Sharing among PRs
AN = Analysis PE = Praise and Encouragement PR = Progress LO = Logistics

The high average word counts of emails relative to the Implementation phase far exceeded those of the Planning phase, except for Praise/Encouragment (PE) and Logistics (LO). PRs needed intensive support for Data Collection in both the planning and implementation phases. Their emails about topic selection generated the highest average word counts. In a debriefing one PR commented that the support of the MR was critical to the success of their success.

The references in emails written prior to the completion of the proposals, including topic selection (TS), instructional unit design (IU), research question (RQ) and data collection(DC), show a higher average number of words than the emails sent after the proposal was written, i.e., after the emails concerned with data collection. It is evident that the PRs emails exhibited the stages of the Information Search Process identified by Kuhlthau (1986) throughout the study in terms of thoughts, actions and feelings (fig. 7).

Figure 7: The Information Search Process



The PRs progressed from Task Initiation and Topic Selection to the critical Pre-Focus and Focus Formulation stages, exhibiting signs of clarity and confusion, and frustration and optimism. They encountered problems with Task Initiation as they grappled with action research methodology. Their difficulties with Topic Selection were related to their mastery of teaching through authentic learning tasks and assessments. Focus formulation that dominated the planning phase accounted for confusion and frustration. This high average count of planning phase emails indicates the need for and the effectiveness of a focus formulation tool and indicates that a proposal template used in the study helped PRs to focus their research questions.

All PRs expressed confusion and frustration with the concept of the parallel implementation of teaching the authentic learning task and conducting the action research. Their roles as teachers, when they planned authentic learning tasks that may have involved student data collection, and their roles as action researchers who collected data, were sometimes confused. In a debriefing session when the MR noted that most of the instructional units looked more like projects than ALTs, the unanimous consensus was that they saw the value in this methodology and wanted to retain it and refine this aspect of their practice.

Many PRs worked through more than one research question, but not more than three. In most cases the MR offered suggestions for isolating the variable and controlling for it. For example, a PR wanted to look at how teaching and learning differed in classrooms with and without computers but did not realize that she needed to control for differences among teachers if she looked at classes with different teachers.

There were differences in the way that PRs from the three levels of instruction approached task initiation, topic selection and the research question, as shown in Table 3.

Table 3: Task Initiation, Topic Selection and the Research Question

Research Stages	Elementary PRs (3 library media specialists)	Middle PRs (2 library media specialists)	High PRs (2.5 library media specialists; 1 technology integrationist
Task Initiation/ Topic Selection	Developed topic based curricular topic for unit of inquiry for students (Penguins, Black History) and on student skills (Critical thinking) 13 emails/880 words	Developed topic based on what they wanted to know about their teaching: "What do we really need now regarding teaching note taking?" 5 emails/789 words	Developed topic based on students' information seeking behaviors (plagiarism, poor note taking, under-use of subscription databases and improving student writing.) 9emails/1,614 words
Stating the Research Question	Developed focus on what they wanted to know about student learning (Higher levels of thinking) 13 emails/880 words	Developed focus on student information skills (Which method of note taking will student choose when given a choice?) 5 emails/780 words	Developed focus on problems (plagiarism, poor note taking skills, under use of subscription databases) and solutions (technology and writing improvement). 10 emails/1,110 words

Elementary PRs focused on student learning. ("My questions or goal would be how to incorporate higher levels of thinking skills in the unit"). They looked at curricular topics first to focus and relate information skills to those topics. One librarian was half-way through her inquiry unit with students before she formulated her final version of the research question. This is probably attributable to the child-centered, rather than subject-centered, nature of elementary level teaching. Two middle school library media specialists started with specific information literacy skills ("Which method of note taking will students choose when given a choice?) They worked together on a unit of inquiry and action research study. Within five emails they developed their focus for the inquiry unit, targeting note taking: "During the year we have instructed students using two different models of note taking and several options for recording notes. It would benefit us and teachers designing instructional units this summer to have options that work well for students of differing needs and abilities...while the exploration of (note) collection would be interesting, we think either of the above will be more practical and yield more immediate results for students." High school PRs were diagnostic with regard to information skills: "Can we motivate students to use subscription databases through a demonstration lesson?"). They developed their research questions almost simultaneously with topic selection because they were problem-oriented, anxious to tackle plagiarism, under-use of subscription databases and inadequate note-taking.

Data Collection

The Information/Data Collection stage exhibited by PRs was marked by an acute need for help because ot the qualitative methodologies PRs were learning to apply to their practice. The emails related to data collection (52) constitute the largest number of emails generated (fig. 8) in the Implementation phase. The PRs agreed that this was the most challenging component of the action research. Figures 5 and 6 indicate the frequent and intense assistance that PRs needed. The content of these emails indicated that confusion between the first and second dimensions persisted for a few PRs: "Does this (data collection) refer to the student project or to our evaluation of the student projects?" There were several problems confronted by the PRs in this stage of the action research.

Understanding the nature of qualitative research. PRs transferred prior knowledge of quantitative research to their qualitative-based action research project which influenced their understanding of the intent and methodology of data collection. Many thought they needed to "prove something," have a control group, and rely on numerical data. The MR explained, "You don't have to prove that one method is good, or even working. Your goal is to gather evidence that helps you see where the weaknesses in the assignment are, and what you can do to improve the assignment." There was a lot of concern about sample size, and what would be representative, particularly for those PRs who relied on numerical data. The MR identified concerns about the relevance of data collection methods to the research question. She

advised a PR, "Do you really need a questionnaire to determine how much students learned and how they felt?" A big step in understanding ethnographic research was for PRs to recognize how they already use elements of this kind of research. One PR wrote, "My goal is to keep the project fluid enough to be directed by the students and by changed needed to be made with constant observation and evaluation."

Generating data from the instructional units. Although the PRs were familiar with the tools of authentic assessment, they had never used an authentic learning task as a source of data. They had used formative assessments such as checklists, for example, to diagnose difficulties students experienced and adjust their teaching to address those difficulties, but they had not thought about them as sources of data that they could analyze and triangulate with other data. This improved with practice, however. One PR composed a reflective questionnaire when students were not taking notes to determine their progress. She revised her instruction accordingly.

Choosing a data collection method. The MR encouraged PRs to collect data through observation as a preliminary step to choosing a method. When the unit was in progress, PRs began to see how they could use student work and formative assessments as data. One PR wrote, "I planned to save the maps they create and will analyze them." Problems with early attempts to construct data collection methods resulted in lack of a connection between the research question and the data collection method. PRs struggled with choosing a data collection method and relied heavily on the advice of the MR because they wanted to ensure they would find "the answer" to their research question. A PR commented, "I do not know what we would have done without your (MR's) help."

Documenting observation with field notes and research diaries. PRs had difficulty finding time for documenting observations in detail in research diaries. The MR advised, "...listening to your students may be your best data collection tool. You will want to record exactly what they say so take good notes..." An analysis of research diaries revealed the emphasis on the progress of the instructional unit at the expense of depth analysis and synthesizing with regard to the research question.

Managing time and feasibility. Most of the PRs identified time as a factor in the difficulties they had. "I would have liked more time for the planning phases." When asked to identify the most difficult aspect of doing action research, five of the nine PRs mentioned time: "Tight time schedule to find a project, plan, and implement it." Feasibility problems were usually related to time constraints. The MR acknowledged this conflict: "Please look at this for feasibility. I don't want the research to take too much of your time when you are helping and teaching students." She wrote to another PR, "Think about feasibility. Do you have a willing teacher, a group of students, and scheduled times when you can study work with a teacher who already uses the writing process?"

- **Constructing questionnaires.** The MR provided a lot of support for questionnaires that set a high standard for the research. Most inquiries about questionnaires centered on implementation. When do I administer the questionnaire to students? Do I need a pre- and post-questionnaire? What about validity and reliability?

Questionnaires in conjunction with interviews, for purposes of triangulation, were used most often by PRs. The MR encouraged PRs to use the results from questionnaires to construct interview questions in order to get in-depth data about phenomena. Initial items of questionnaires PRs constructed were cumbersome or time-consuming and required revisions. PRs had difficulty constructing questions and conceptualizing how they could yield results that would address their research questions. They had questions about administration of questionnaires in terms of sample size and timing. Most used pre- and post- questionnaires to determine whether their variables had made a difference. Support materials provided by the MR were critical for this stage of the action research.

Constructing interviews. Constructing interviews was not as problematic as questionnaires. PRs were more comfortable with this data collection method and used it throughout their units in both formal and

informal settings. They used structured and unstructured interview formats and most PRs combined these methods. They had questions about sample size and timing.

Components of the research that did not pose problems include:

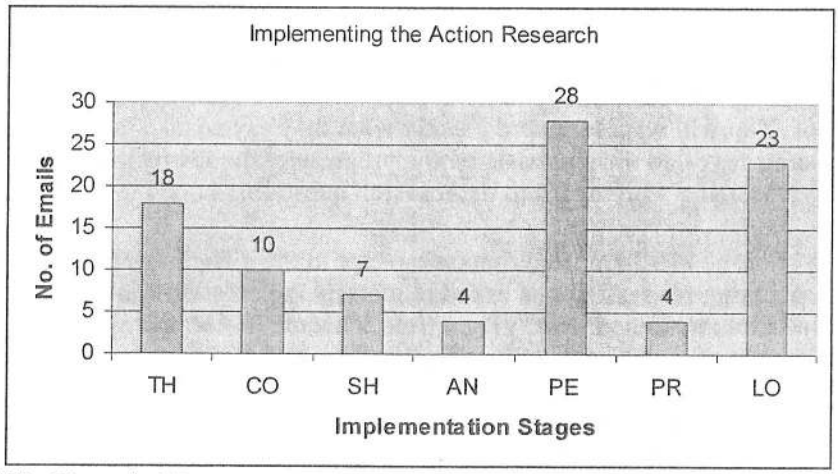
- **Content analysis.** The PRs used content analysis extensively to look at student work, e.g., bibliographies for a research paper assignment, mind maps, and journals.

- **Meeting formal research standards.** PRs quickly grasped the importance of research standards. Triangulation provided internal validity to their action research. The MR consistently raised PRs awareness of validity with questions like, "How do you know that the intervention you administered is the only factor in the change you observed?" "How do you know that you are measuring or assessing what you say you are?" The MR provided structure that ensured reliability and transferability of the action research.

Implementation phase of the Action Research

Figure 8 shows about half of the total number of email between the PRs and MR related to implementing the action research.

Figure 8: Implementing the Action Research



TH = Theoretical Framework CO = Collaboration with teachers SH = Sharing among PRs
AN = Analysis PE = Praise and Encouragement PR = Progress LO = Logistics

Implementation included applying educational theory to the instructional unit, collaborating with classroom teachers, sharing the work among PRs, analysis of the data, praise and encouragement offered by the MR, progress reported, and logistics. The average word count of references, however, was much lower than the average word counts in the planning stage (fig. 5), indicating that the need for explanation and elaboration was not as intense in the implementation stage. Logistics and praise and encouragement constituted more than half of the total number of emails in this stage.

Theoretical Frameworks for Action Research Projects

The theoretical framework is the element of academic research often omitted from action research. Because action research is considered to be practical in nature, aimed at improving practice, theory may not seem relevant. Proceeding on the premise that there is nothing more practical than a good theory, a comment attributed to Kurt Lewin, the MR established the theoretical foundation as constructivism with brief introductions to Piaget, Dewey, and Vygotsky in the orientation sessions. With this framework in place, establishing individual theoretical frameworks was postponed until implementation after planning phase issues were resolved. It is interesting to note that the theory setting stage (TH) shows a higher average word count per email than the subsequent stages of implementation (Figure 8). Compared with

the planning phase, however, there were slightly more emails related the theoretical framework than topic selection and instructional unit planning.

The constructivist theoretical framework set by the MR was refined by the PRs when the MR introduced specific learning theories on a one-to-one basis to help them connect theory with practice. The MR refereed PRs to web sites that succinctly presented educational theories and the work of theorists who were instrumental in defining best practice. She wrote, "I know you will not have a lot of time for background reading, so in addition or in lieu of being your searcher I can filter this information to you, especially for the learning theory that will form the foundation of your study. I suspect we will all be using constructivist-based learning theory. The information and websites provided background reading for formulating the research question as well as for defining theoretical frameworks for the PRs' action research. The PRs related these theories to their research questions as well as to data collection. Theory also helped the PRs understand why they chose particular methods or materials to support their students and provided a touchstone for analysis. For example, one action research study used Bloom's taxonomy to categorize and analyze her data when determining whether her students were thinking critically.

The MR also referred PRs to external sources, i.e., leaders in school libraries who model best practice based on constructivist theory. The PRs used these sources to design their authentic learning tasks and action research studies. Exposure to this literature helped PRs bridge the gap between theory and practice and provided knowledge that gave depth to their understanding of their action research.

Sharing Interactions Among Practitioner-Researchers

Sharing ideas among PRs was explicitly promoted by the MR in 8 emails , with a total word count of 4,663, or an average word count of 259. This is quite high when compared to the average counts for other categories. The high word count can be attributed to the detailed emails initiated by the MR to promote sharing. Sharing occurred naturally within each level; the three elementary PRs met regularly brainstorm and share ideas and within the first two weeks had worked out the process. This was more difficult across levels. For example, one elementary and one high school PR examined note taking but were not aware of this until the MR prompted them via email to share their research. Sharing also took place in real time. One PR wrote, "I have been meeting with J and C and we have been sharing correspondence. We are still a bit confused, but I imagine we will survive this stage. I welcome any input!!!" The PRs enjoyed the comraderie, support and morale boost of their interactions. The presentation at the state conference, the MR's presentation at the board meeting, and the debriefing at the end-of-the-year Library, Media, and Technology department meeting were also vehicles for sharing findings.

Emails initiated by the MR also served the following purposes:

Clarification and reinforcement of research concepts. One PR was not present for the MRs orientation to action research. "For the most part, I am pretty much clueless and I am hoping that it is because I came a little late into the process!. I'm trying hard to think of a question or hypothesis..." The MR took advantage of this opportunity to tutor her through emails that were copied to the other PRs who benefited from this written version of the mentoring process in a "think-aloud" mode. She wrote to the PR, "If others in our group are having difficulty getting started, would you mind if we shared these emails to give them a solid example of how the conversation between MR and PRcan begin?"

Providing structures and models. The MR used emails to everyone to provide the support materials. She set guidelines for a state conference presentation and intermin deadlines for the completion of various stages of the work, and disseminated exemplary work done by PRs.

Addressing concerns. The MR raised concerns to the email list about issues that surfaced as trends. Feasibility was one of these, along with time constraints, the relevance of data collection methods to the research question, the design of ALT and authentic assessments to generate data, validity concerns rising from multiple variables, and construction of questionnaire and interview items.

Analysis of Data in Action Research Projects

Although the MR differentiated assistance through the use of emails during the stage of analysis to meet the individual needs of the PRs, email activity during this stage was lowThis is explained by a site visit during which the MR held one-to-one meetings to help PRs to determine how they could best handle their data. In these meetings the MR stressed the need to analyze data on an ongoing basis in order to let the data drive the investigations. Categorization and color coding were explained. To facilitate this, PRs were advised to number all items on their questionnaires, respondent profiles, and interview schedules. Most questions from PRs were about how much analysis needed to be reported. For example, "Did you want all the numerical breakdowns on all the questions on the questionnaire and interview?" PRs had no problems with the concept of triangulation since they were using multiple sources of data which, in most cases, yielded numerical and verbal data. The MR considered the PRs' presentations at a state conference as data. The PRs worked in teams: elementary, middle and high, and presented to an audience of their peers in breakout sessions. These sessions were prefaced by brief presentations by the Director and Mentor Researcher that provided an explanation of action research and definitions of their respective roles. The conference presentation offered opportunities for clarification of the action research process. One PR wrote, "I started to work on the handouts for the presentation. I've attached one page of the findings. Am I on the right track? Question: Would you clarify the difference between the description of the unit and the abstract?"

Praise and Encouragement

A key factor in the role of the MR was to be sensitive to the morale of the PRs and to offer praise and encouragement when appropriate. One-third of the comments the 27 comments were specific to various aspects of the research. For example, "Your presentation is top notch. I like the last slide and would retain it. Folks will need to hear things twice because there is a lot of new information in the presentation. Would you share this ...with other librarians as an example? It has all the elements and is superbly executed. Thanks for all your hard work."; "Your reflective questionnaire is wonderful. Great idea."; "The research question and adaptation of the questionnaire are great."

Two-thirds of the MR's comments were general. For example, "You have done a nice job planning this."; "Good luck and please let me know if you have any questions." The email medium was helpful in maintaining a high level of encouragement.

How did the Action Research Inform the Practice of School Library Media Specialists?

All effects of the action research on the practice of school library media specialists are analyzed as facets of role perception, which emerged in the analysis as the framework for their practice. The researcher organized the data from various points of view with regard to role perceptions, as discussed below. Collaboration emerged as a function of role perception. This collaboration took place in two dimensions: 1) the traditional collaboration to plan, design, implement, and evaluate the students' learning task; 2) the incidental collaboration that evolved from the interfacing of student learning and action research. It is useful to consider the role of the classroom teachers' in this project as well as their perceptions of the lms' instructional role to gain further insights in to the collaborative process.

The classroom teachers played a part in planning the authentic assessment assignment, helping PRs collect data, and evaluating the unit in a reflective meeting at the end of the project. The MR advised the PRs to use the results from the generic questionnaire at their meetings with teachers to provide feedback on what students thought about the unit. They were advised to try to get teachers to think concretely about specific changes and to keep detailed notes with their materials so they could use them the next year to re-design the unit, incorporating the consensus of the teachers and PRs. The MR also encouraged PRs to "get feedback from the teachers on what worked and what needed to be revised" when the instructional unit was in progress. She urged a PR "...to speak to a teacher about criteria for choosing your sample." Subsequently, a PR wrote, "I have met with the teacher and have incorporated some of her ideas" which included advice on which student to interview and feasibility issues for data collection. Teachers, however, were not trained participants, although they were aware that the PRs were collecting data on the student performance within the collaborative unit. This transformed their transactions since teachers were no longer in complete control of the instructional unit but did not immediately change teachers' perceptions of the lms' instructional role.

Teachers did not always see the library media specialists as equal partners. At times the PR had to struggle to get the time she needed to teach information literacy skills. The MR advised, "I would like to suggest that you make a good case to the teacher against teaching (information) skills in isolation. Even if it is a one day project, students should really be applying what you are working so hard to teach them." Most implementation problems were about power and control, another facet of role perception. A PR wrote, "The teacher jump started the project on me last week so I am struggling to do what I can to get it to adapt. I thought we were set to start this month, but she came back from vacation with all her materials in place, having walked off with my ideas. She has a tendency to plan projects without our involvement and we often have trouble supporting the research. I had hoped to forestall this problem this year by approaching her first but I guess she just doesn't get it."

Despite these traditional challenges of collaboration, there was a strengthening of bonds between the library media specialists and collaborating teachers. The change in dynamics was precipitated by the unique expertise of the lms in designing and implementing action research. This earned the respect of teachers and the enthusiasm of their students. In fact, The 3-Dimensional model improved perceptions of the PRs as teachers and as experts in research. Teachers became curious about the action research. "Why are only the librarians learning how to do this?" they asked.

How did the LMSs view their role? Some PRs identified time as an issue in the success of collaboration. They referred to lack of time to plan with teachers. One noted, "The restraint that time put on us ... did not allow us to choose the teacher with whom we worked." Most PRs however, did experience sustained collaborations with teacher throughout the instructional unit from which the action research project grew.

Library media specialists struggled with their place as teachers in the implementation of the instructional unit. One PR noted, "I'd love to re-write her (the teacher's) unit – a writing style thing with me –but I don't dare offer." They saw their role as facilitating learning for students and implementation for teachers. The retention of old paradigms in terms of the instructional role of the PRs was an underlying factor in collaboration problems. Library media specialists distinguished between their teaching roles and those of the teacher, particularly with regard to grading student work. Formative assessments that were graded presented problems of responsibility. For example, it was logical that the lms grade the bibliographies generated by students for a research paper assignment but this contradicted past practices. Nor did teachers feel comfortable grading them. To resolve this problem the PR and classroom teacher decided that the teacher would spot check the resources used and deduct points from student papers when students did not present completed bibliographies with a minimum of seven sources. Although PRs were comfortable with the idea of analyzing student work, they did not perceive that grading was a function of their role.

Although experienced with the collaborative process, most PRs had difficulty with the logistics of collaborating with teachers using the 3-Dimensional model. "Do we first decide on a project and explain it to the teachers involved in what we are doing?" "How do you go about choosing the project? Are there criteria?" "What do you recommend in terms of implementation?" There were concerns in the implementation phase about collaboration with teachers. "We've re-scheduled her twice and emphasized the importance of our deadline. It is her unit and we have just a small part," wrote one PR. "What do you suggest if there is an area where improvement could be made, but the staff are reluctant to do this?"

These perceptions changed dramatically. A PR noted that the action research "...caused me to think about the disconnect between the teacher's and my perception of the usefulness of technology in the writing process and some of the students' perceptions." Another PR noted that the most difficult aspect of doing action research was "...making sure the action research blended well with the teacher's objectives."

In the middle of the project the Director noted that, "They do not know their own power even though they have carte blanche in their buildings and their principals are very supportive." However, PRs experienced more confidence at the end of the action research with regard to collaborating with teachers. One PR wrote, "I feel I have concrete data, and common discussion points, to bring to the Freshman

House teachers on how to improve students' performance. I think the Social Studies and Science teachers can see how information skills affect their curriculums, and that projects must about taking initiative to collaborate. The reading teacher is working to improve skills we identified as weak and I would like to increase the degree of collaboration with the teacher. The reading teacher would like to enlist me as a compatriot in teaching skills of reading non-fiction." This is significant for the PR because, in this instance, collaboration with the classroom teacher was not successful: the teacher took over the unit and excluded the PR in the impelementation phase after collaborating with her on the design. "Jointly planning the unit with a teacher, from the beginning, was very helpful."

Many PRs were interested in working on collaboration to improve it. When asked what she would do differently the next time, a PR responded, "I would also try to pick a teacher that let me collaborate with him/her in designing the assignment." Another PR agreed: "I would have liked to have been more involved with the teacher from the beginning of the unit. It is difficult to take a unit that 'belongs' to someone else and make it work the way I would like." Another said, "Try to get the teacher to work with me on: 1) note taking methodology and skills; 2) having the students spend more time of their research time in the library itself where I can have a better handle on how they're doing.." Other PRs responded that they would like to study collaboration with teachers in another action research project. "How do we get teachers to involve us from the beginning of the planning process? Teachers often do not include us until after the unit is almost all planned. It would be beneficial if we could help plan more thought provoking questions instead of just find the fact questions." Another wrote, "Why some teachers are resistant to planning with media specialist. Is this a realistic or impossible question to answer?"

A factor in helping PRs gain ownership and confidence was their ability to make the leap from reflection generated by their action research to the action plan. There were many journal entries and comments like this one: "Note taking – kids are on target – have lots of sources, but we need to consider revising our 'Trash or Treasure' review – need to present on overhead – then give each student a researchable question and the paragraph on which to take notes instead of completing it as a group exercise. All students would still have the same paragraph and question, but would be accountable for their own notes." Action research was a powerful intervention that empowered the PRs with hard evidence for improvement of the instructional unit, and consequently, with a sense of ownership.

The way that PRs felt about the action research was a key indicator of their confidence levels and, in turn, their feelings about collaboration. One PR explained the most rewarding aspect of her action research: "It raised my awareness and caused me to think differently about assumptions and making decisions." Although they were excited about their projects and research findings at the end of the action research project, it was not until after their presentations at the state conference that they seemed to find their voices as leaders. They exhibited energy, enthusiasm, and confidence that was transformational. They had clarified their personal teaching theories, explored their sense of self and their role as teachers, and gained awareness of their students' perspectives and needs.

They summed up their feelings in their presentations:

> "It was scary at first, but definitely worth it."
> "I would like to learn more about statistics."
> "A learning experience all around."
> "Time consuming but an effort worth pursuing. Why? Because it reminds you of why you do what you do."

While preparing for the state conference presentation at which the PRs were presenting their action research projects, the MR intiated an email that addressed evaluation of the action research initiative. The Director commented:

> I am certainly in favor of helping get the word out – not only about what the (practitioner) researchers are doing but how the process has impacted their practice and how it has fundamentally changed the way in which they will approach their work in the future. I view this

as a truly program altering endeavor.

When the PRs made their presentations at the end-of-year department meeting, the Director wrote to the MR:

> I am awe-struck by the impact this project has had in moving the librarians from an already high-functioning level to a place I do not think many building-based folk have been before... X's work is so elegant and crisp – it is a PowerPoint presentation at its finest. I am so proud of all of them. You must be on cloud nine to see what you have wrought!"

Another strong indicator in the transformation of the lms' perceptions of their roles was in their transactions with students. Cousin (2000) stated that the litmus test of good action research is that it improves the quality of the transactions between teachers and their students. There is strong evidence that the 3-Dimensional model passed this test. A strong trend in PR responses to the best aspects of action research concerned their interactions with students:

"Great fun to be able to interview students and hear their side of things for a change...Observing students reach a different level of thinking through teacher's questions...and interviewing students."

"It was valuable to see how students view research, to get a glimpse inside their heads. It is something we often don't get a chance to do...While we often get the view of individual students, it is hard to know whether it reflects the majority viewpoint."

"Working with one group of students over a period of a few days, getting to know them...knowing that many students really did learn evaluation skills and would, hopefully, incorporate this knowledge into other assignments."

"...Seeing the enthusiasm and excitement of the students for the project, and the student's honesty when they participated in the interview and questionnaire."

The PR who was working toward her certification wrote, "One of the most helpful things to me was that it forced to really get into the role of media specialist. I have worked in the library for nine years, but didn't have the same role to play. This project pushed me to see my role as a "leader" and helped me to see that I will be making a difference in the world of students with whom I work. Also, students will influence me to find new and better ways to do things."

Action research anchored the school library in the teaching and learning context of the school, enhancing its instructional role and breaking down barriers between classroom and library. It bolstered the confidence of the lms and transformed their perceptions of their role from a support to a leadership function.

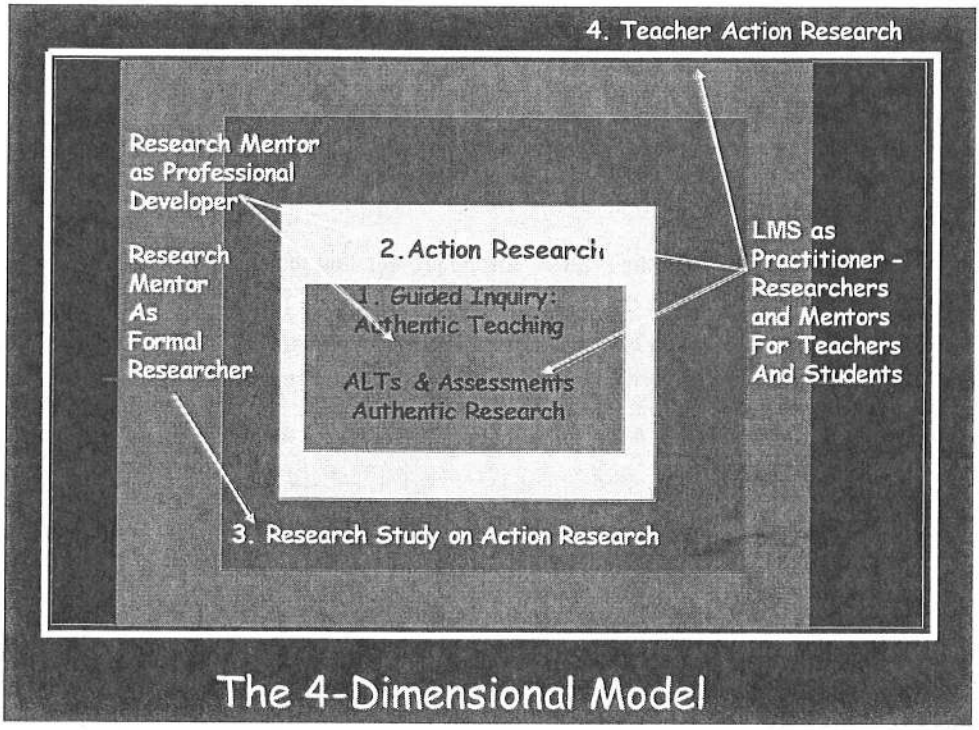
Implications for Future Research: Moving Beyond the 3-Dimensional Model

The Director of Library, Media and Technology asked the MR to make a presentation to the Londonderry School District Board of Education at the end of the school year. The MR summarized the project and findings of both the PRs' action research and the MR's formal research. The enthusiasm of the Director of Library Media and Technology was infectious: the superintendent and the Board agreed to fund the initiative for the next five years and the project has been written into the district's five year strategic plan. In the second year the study was replicated. MR contact with the PRs was the same as the previous year, with one exception: The total number of emails was 21, or 10 per cent of the number of email transactions in the previous year, The content of those emails consisted of completed proposals and data collection materials that the PRs created. There were no emails that replicated the concerns of the previous year, and no emails that raised new concerns. Site visits and the end-of-the-year debriefing session confirmed that the PRs had mastered their action research techniques and had successfully worked independently.

In the third year of the project the PRs became the mentors for teachers with whom they had collaborated during the previous two years. Library media specialists were viewed district-wide as the experts in conducting action research. They still had access to the MR who offered support for their mentoring. Again, the lms were able to provide support to the teachers with very little assistance from the MR. This stage of the project was prompted by teacher interest in learning more about they were observing when collaborating with school library media specialists. The Director commented to the MR, "Teachers who are well-respected in the district are asking why they are not included in the action research project. When teachers like _____ express an interest, the Superintendent takes notice."

In the fourth year the project the third year was successfully replicated. The 3-Dimensional model of action research became a train-the-trainer model, as shown in Figure 9. Library media specialists worked with classroom teachers in their new role as mentors. The research questions studied centered on problems rooted in classroom practice, rather than in the library media center. This is not to say that the library media specialists were not conducting their own action research, but the focus of the training process has expanded to include a district-wide initiative for teachers. Meanwhile, two new library media specialists have replace retirees and the original 3-dimensional training model is being used for experienced PRs to train new staff.

Figure 9: The 4-Dimensional Training Model

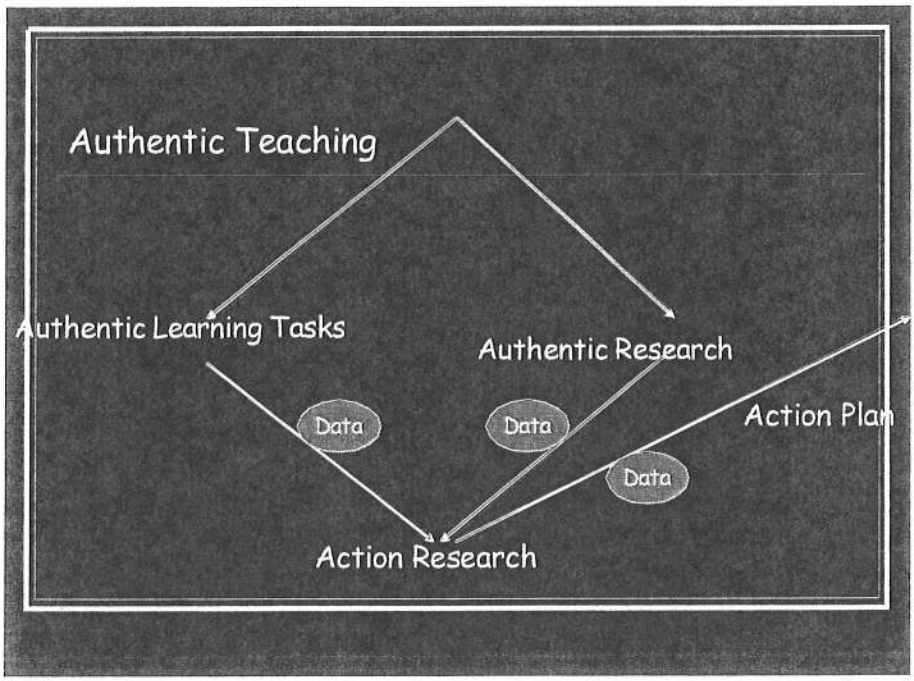


The findings of this study point to further research that investigates the potential of action research as a self-evaluative tool for both performance and program evaluation. The Director thought this was timely because the Library Media and Technology department was using frameworks articulated by Danielson and McGreal (2000) for performance evaluation while principals use the clinical model of observation and narrative. Tenured librarians are evaluated every three years; non-tenured every year until they attain tenure with consensus from the Director and principal. The MR suggested a portfolio model that would provide for the collection of evidence and artifacts that are representative of the librarians' performance. She also suggested that performance evaluation and program evaluation could be aligned to include management of library, resources, and staff as well as instructional competencies.

The synergy of the three-tiered model described in this study supports the development of authentic teaching as a cornerstone of the library media specialist's pedagogy: a pedagogy of independent learning that is the unique contribution of the school library program to the academic life of the school. In a leadership position, the action research-trained lms possesses the skills and confidence to implement such a pedagogy that involves the transference of action research skills to students, who need to learn that research is more than finding and reporting information.

A model for authentic teaching includes authentic research (fig. 10) that challenges students to: 1) Pose research questions that are central, rather than peripheral, to the nature of the academic disciplines; 2) include data collection as well as information searching in the research process; and 3) employ the investigative methods appropriate to the nature of the academic disciplines (Gordon, 1999).

Figure 10: Authentic Research for Students Too!



This model develops the concept of authentic teaching, effecting a paradigm shift from an information-centered library media instructional program to a knowledge-centered one, as discussed in the beginning of this paper. Future research can develop the authentic teaching concept as a pedagogy of independent learning that will actualize the ideals of the school library profession and hold it accountable for attaining those ideals.

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Action Research: Implications for SLM Education and Practice

(A WORKING DRAFT)

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INTRODUCTION

In 2005, the two researchers conducted a survey of almost 2,000 building-level school library media specialists (SLMSs), nation-wide, who were members of the American Association of School Librarians (AASL). The study, partially funded through an AASL/Highsmith Research Grant, targeted a population that the researchers believed, because of its involvement with AASL, represented leadership in school library media. The response rate was approximately 32 percent.

The results of that study revealed that more than 80 percent of the respondents had backgrounds in formal research courses and found program assessment relevant to their current employment settings. Yet, they were much less confident of their ability to employ quantitative and qualitative tasks and/or approaches for collecting and analyzing data about the library media program and its users (Table 1). In comments from the survey, respondents mentioned that time was one factor mitigating against program assessment. However, the survey results also indicated that the respondents were desirous of continuing education for developing an ongoing plan for assessment.

Table 1
2005 Study by Latrobe and Taylor:
Comfort Levels for Research Activities of Respondents*

Use of Information Sources	.5	2. 5	3.5	4.5	5.0
Published research				4.4	
Data collected by agency outside the local library media program				3.8	
Data collected as an element of building-level library media program				4.3	
State standards for SLM programming				4.2	
State standards across various school concerns				4.0	
Information Power (AASL)					4.5
National guidelines across various disciplines				3.9	
Use of Qualitative Approaches	**.5**	**2. 5**	**3.5**	**4.5**	**5.0**
Stating a problem for investigation				3.9	
Conducting a focused interview				3.6	
Working with a focus group				3.7	
Conducting naturalistic (participant) observation				3.7	
Conducting a case study			3.3		
Conducting a content analysis			3.3		
Categorizing data for interpretation/description			3.4		
Use of Quantitative Approaches	**.5**	**2. 5**	**3.5**	**4.5**	**5.0**
Devising a hypothesis to test				3.5	
Generating a sample for a given population			3.4		
Constructing a measuring instrument (*e.g.*, for a survey)			3.4		
Assessing validity of a measuring instrument (Does it measure what it is to measure?)			3.0		
Controlling the bias (systematic error) of a research design		2.7			
Controlling the noise (random error) of a research design		2.6			
Determining the reliability of a measuring instrument (degree of consistency in measuring what is to be measured)		2.7			
Training others to collect data with a measuring instrument		2.9			
Determining the best way to distribute a measuring instrument			3.0		
Verifying the accuracy of a measuring instrument		2.7			
Doing statistical analysis of numerical		2.7			

data										
Deciding when to apply descriptive statistics versus sampling/inferential statistics				2.5						
Communicating / Managing Research	**.5**		**2. 5**		**3.5**		**4.5**	**5.0**		
Undertaking visual presentation of data (*e.g.*, charts)							4.2			
Undertaking verbal or written presentation of data							4.3			
Obtaining resources for a literature review							4.3			
Distinguishing primary sources from secondary sources								4.0		
Dealing with legal obligations, including informed consent						3.2				
Managing ethical issues in designing and conducting research, such as the protection of confidentiality						3.5				
Writing a proposal for funding					3.4					

*Scale: 1. very uncomfortable; 2. somewhat uncomfortable; 3. neither comfortable nor uncomfortable; 4. comfortable; 5. very comfortable

Thus, the 2005 study was a lens that examined professionally active practitioners' self-reported abilities to carry out *Information Power's* basic goals and principles related to "ongoing assessment for improvement" (American 1998, 71, 108) of school library media programs. Because of the results of the 2005 study, the two researchers sought a view of the larger picture of the role of practitioners in research. They determined that a second lens would be used to examine whether research by practitioners, especially those school library media specialists who are building-level practitioners, was to be found in one journal, *School Library Media Research* (SLMR), which publishes refereed studies. The population of articles studied was limited to action research because that approach especially focuses on local practice, and the researchers' 2005 study respondents did indicate that program assessment was relevant to their current employment settings. Further, there is a purposive advocacy for action research to be conducted by SLMSs in their teaching environments, including for "program improvement to aid in the increased academic achievement of our students" (Howard and Eckhardt 2006, 1). Finally, there appeared to the researchers that there is a particular push in the twenty-first century for action research as an emphasized approach for SLMSs.

Action research is not, however, only of contemporary interest; it has been a long-standing approach in the social science professions. The term is often credited to Kurt Lewin, who promoted "action-research." In 1948 he both defined it and offered a model for it:

> The research needed for social practice can best be characterized as research for social management or social engineering. It is a type of action-research, a comparative research on the conditions and effects of various forms of social action, and research leading to social action. Research that produces nothing but books will not suffice.

> This by no means implies that the research needed is in any respect less scientific or "lower" than what would be required for pure science in the field of social events. I am inclined to hold the opposite to be true. . . . [The research] will have to include the whole range of descriptive fact-finding in regard to small and large social bodies. Above all, it will have to include laboratory and field experiments in social change (202-203).

He described the "action-research" process as a "spiral," a "circle of planning" that has four functions (204):

1. Develop a general idea; that is a "carefully" considered objective and a way to "reach the objective" (205);
2. "Execute the plan" (205);
3. Conduct "fact-finding" or evaluation, which serves as a "basis for planning the next step" (206);
4. Plan for the next sequential round (objective), means for reaching the objective and evaluation (206).

Lewin's vision of "action-research" emphasized the requirement of rigor for its research techniques and the planned sequence of its activities.

Since Lewin, the characteristics that distinguish action research have been described often and repeatedly. In Table 2 the researchers have categorized, using descriptive phrases shaped by the two researchers, examples of accepted defining characteristics that distinguish action research.

Table 2
Typical Defining Characteristics Distinguishing Action Research*

- **Cyclical structure of activities** (*e.g.*, planning, observing, reflecting, revising), pursuit of knowledge, continual improvement, a striving for change
- **Collaborative blending of roles** (observer, researcher, participant, insiders, stakeholders) **and activities** (discussion, dialogue, involvement)
- **Reflective practice**, practitioner-centered, self evaluation, acceptance of responsibility for personal actions and professional development
- **Fixed settings and populations**, local and particular situation, nongeneralizable
- **Flexibly amendable**, revisable, tweakable, adaptable
- **Variable parameters**, *i.e.*, without prescriptions for procedures, theses, intended audience, simplicity or complication, length or brevity, formality or informality, or quantitative or qualitative methodologies

*(Gordon 2006), (Hendricks 2006), (Johnson 2002), (McNiff 2002), (McNiff *et al* 2003), (Tomal 2003), (Zeni 2001)

OVERVIEW OF STUDY METHODOLOGY

This content analysis used published articles in the journal *School Library Media Research* (SLMR), which utilizes peer review for selection of research articles. Also, the journal is highly regarded; the American Library Association (ALA) Web site publicizes the 2004 study by Nisonger and Davis (2005) that placed SLMR in the top twenty library and information studies (LIS) research journals, as ranked by the deans of ALA-accredited library and information studies program (*SLMR Highly*). SLMR is available full-text online:

(http://www.ala.org/ala/aasl/aaslpubsandjournals/slmrb/schoollibrary.cfm).

The researchers believed that this publication's articles potentially represented the closest relationship of research to practice. A model for the approach was offered by Dianne Oberg's introductory editorial to the International Association of School Librarianship's (IASL) July 2006 thematic issue of *School Libraries Worldwide* (SLW). That editorial summarized the results of a content analysis of SLW that used the journal as "a source of evidence for evidence-based practice" (i-ii).

In this study's analysis of the articles in SLMR, the two researchers, using their examination of the articles, compiled descriptive statistics of patterns that were identified regarding:

- the internal and external indicators that an article was a reporting of an action research study,
- the nature of the authorship of the action research articles (including professional positions held and whether there was credited collaboration)
- the research methodologies reported within the action research studies, and
- the roles of practitioners in the action research studies.

The two researchers did not evaluate the SLMR articles for the quality of the action research approach used in the published studies.

Population of action research study report articles

The two researchers and a graduate assistant examined every journal issue of *School Library Media Research* (SLMR) online from 1998 (volume 1) through 2007 to September 2007 (volume 10) and each article in those issues.

Using the list of characteristics (Table 2) that the two researchers established for identifying action research, a graduate assistant read all articles in SLMR and identified the articles that appeared to be action research. Each of the two researchers then separately read all articles in SLMR and identified the articles that were deemed to be action research. Ultimately, from the combination of the three sets of analyses, only two articles were questionable. The two researchers re-examined those two articles and decided that one was action research and that one was not. The one article removed from the population (Sturm 2003) was deemed to be a report of survey results.

Counts and authorship of action research study report articles

The researchers counted the number of co-authored and single-authored articles that were deemed action research, and Table 3 illustrates the number of "refereed research articles" (the term used by SLMR in its table of contents) and the count of those studies that were determined by the two researchers to be action research study reports. Given the inherent collaborative nature of action research (Table 2), the two researchers believed that the nature of the authorship (single- or co-authorship) of the articles would be one indication of the role of SLMSs in these research endeavors. The "RESULTS" section of this paper presents the two researchers' enumeration of the professional backgrounds of the article authors.

Methodologies used in action research study report articles

As part of their reading of the population of articles, the two researchers separately identified the methodologies for data gathering used in the articles. These two lists were then discussed by the two researchers and compiled into one list (Table 5).

In Table 6, the researchers compiled the article authors' characterizations of the nature of their research studies. The two researchers were especially interested in whether the authors would self-designate their studies as action research. In locating such characterizations, the researchers, used, in this order, the following sections of the research reports:

- article titles;
- article abstracts that accompany the articles (these abstracts are provided by article authors);
- method sections within the articles;
- introductory sections of the articles.

The first mention of the characterization of each study, per the above priority list, was added to Table 6.

In addition, the two researchers used the SLMR *Keyword Index of School Library Media Research 1998-2007 and Selected Articles from School Library Media Quarterly Cited in Information Power* (http://www.ala.org/ala/aasl/aaslpubsandjournals/slmrb/keywordindex/keyword.cfm) to determine how the articles were being characterized by that index. Those keyword "subjects" are also in Table 6.

LIMITATIONS OF THIS STUDY

This content analysis has inherent limitations. They include, but are not restricted, to the following:

- The small population that is comprised of one research journal's (SLMR) "refereed research articles."
- The multiple articles in SLMR by repeat authors ("RESULTS" section of this paper).
- The assumption that the criteria devised by the two researchers (Table 2) and the selection of articles based on those criteria resulted in a subpopulation of action

research articles. This is especially relevant since the term "action research" was not directly applied to their articles by the majority of the authors (Table 6).

- The short time span of ten years of the life of SLMR and the uneven distribution of what the researchers identified as action research over that time span (Table 6).
- This content analysis was undertaken because of results from a 2005 study done by the two researchers. Any limitations within that study could potentially have changed its conclusions, which initially led the two researchers to undertake this study's content analysis.

RESULTS

Population of action research study report articles

Counts and authorship of action research study report articles

In School Library Media Research (SLMR) volumes 1 through 10, there were found the following counts of "refereed research articles" as designated by the tables of contents of issues of SLMR and of articles deemed "action research" by the two researchers. Additionally, there are included in Table 3 designations of the nature of the authorship (single authors or co-authors).

Table 3
Counts and Authorship of Action Research Articles in SLMR

Volume/Year	"Refereed Research Articles" Count	Action Research Articles Count	Nature of Authorship
Vol 1 (1998)	6	1	Co-authors
Vol. 2 (1999)	5	1	Single author
Vol. 3 (2000)	7	1	Single author
Vol. 4 (2001)	6	1	Single author
		1	Co-authors
Vol. 5 (2002)	6	3	Single author
Vol. 6 (2003)	3	1	Single author
		1	Co-authors
Vol. 7 (2004)	4	1	Single author
Vol. 8 (2005)	2	0	N/A
Vol. 9 (2006)	4	2	Single author
Vol. 10 2007)	4	1	Co-authors
TOTALS	47	14	10 single authored 4 co-authored*

*may include more than two co-authors

Out of the population of forty-seven "refereed research articles," the researchers identified fourteen (29.8%) as being action research studies. Out of the fourteen study reports characterized by the researchers as action research (Table 3), ten were single-author publications, but one author produced four of the ten study reports. The individual who authored four of the single-author reports was a librarian in an academic setting

during the time that three of the studies were reported and was an LIS educator at the time of the fourth report. Of the remaining six single-author publications: three were LIS educators; one was a doctoral student; one holds an academic title within the university housing the lab school for which she is librarian, thus technically being a building-level practitioner while simultaneously having a faculty role within the university; one was a lecturer at an Australian University. Thus, none of this group of authors would be considered exclusively a school library media specialist (SLMS) building-level practitioner.

Out of the population of fourteen action research studies (Table 3), only four of the studies were collaborative endeavors as far as credited authorship. Of the four studies that had collaborative authorship, only one had a practitioner listed as co-author (that study's first author is one of the two researchers for this study), and that practitioner was not building-level. Thus, in this very small population of four collaborative studies, building-level practitioners are absent as credited co-authors.

However, the population of fourteen action research studies reported in SLMR collectively reported the inclusion of practitioners in the various roles captured in Table 4. For the purposes of this table, the term "practitioner" was inclusive, encompassing SLMSs whether building-level or not, teachers, school administrators, and community practitioners. Table 4 illustrates that the roles fulfilled by the practitioners fall into these categories, often simultaneously in the same study:

Table 4
Roles Filled by Practitioners in the Action Research Studies

• Part of study population
• Assisted in design of study
• Assisted in implementation of study
• Assisted in assessment/implementation of study results
• Recruited other participants

The most common role held by practitioners was inclusion in study populations.

Methodologies used in action research study report articles

In their analysis of the action research report articles, the two researchers tallied the different methodologies of data gathering collectively identified by those studies, as presented in Table 5. The two researchers concluded that collectively the population of action research studies employed a variety of research methodologies, both quantitative and qualitative, for data gathering.

Table 5
Methodologies of Data Gathering
Utilized in the Population of Action Research Studies

- Interviews (group, structured, etc.)
- Observations
- Survey instruments
- Participant-generated artifacts (journals, field notes, logs, student assignments, etc.)
- Focus groups/review panels
- Pre-test

Table 6 is a capture of the article authors' characterizations of the nature of their own studies. Table 6 also includes the two researchers' collection of SLMR Index keyword headings that characterized the action research studies in the articles.

Table 6
Population of Action Research Articles as Characterized by the Article Author (s) and by the SLMR Keyword Index (Online)

Author(s) of an Article	**Author's Characterization**	***SLMR Keyword Index* Characterization***
Agosto, 2001	various "study methods" from "Method"	"Content analysis method"; "Observation methods"
Gordon, 1999	"qualitative action research study" from abstract	"Assessment--Performance-based"; "Research--Qualitative methods"; "Research-- Student practice"
Gordon, 2000	"qualitative study" from abstract	
Gordon, 2002	""qualitative study" from "Research design"	"Literature review, examples of extensive synthesis of previous research"; "Research--Qualitative methods"; "Statistical analysis, Fano measure, Bayesian"; "Triangulation"
Gordon, 2006	"action research training model" from abstract	"Action research"; "Assessment--Performance-based"; "Evaluation--School library media centers"; "Interview--research method"; "Observation--Research methods"; "Research--Collaborative action"; "Research--Field-based"
Harada, 2002	"case study" from title	"Assessment--Performance-based"; "Literature review,

		examples of extensive synthesis of previous research"; "Research--Case study method"
Harris, 2002	"exploratory" study from abstract	"Literature review, examples of extensive synthesis of previous research"; "Research--Observation methods"
Herring, 2006	"essentially a qualitative research project" from "Research Method"	"Models--Information Skills instruction"
Immroth and Lukenbill, 2007	"field-test a strategy for teacher-SLMS collaboration" from "Research Questions, Goals, and Objectives of the Project"	
Latrobe and Masters, 2001	"Case study" from abstract	"Research--Case study method;" "Research--Collaborative action"; "Research--Field-based"
McGregor and Streitenberger, 1998	"naturalistic research studies" from "Design"	
Newell, 2004	"Rapid design ethnography coupled with an activity (AT)-based analysis" from abstract	Assessment—Performance-based
Watson, 2003	"phenomenological research" from "Method"	"Pilot study"; "Research--Exploratory study"; "Research--Interview methods"
Wolf, Brush, and Saye 2003	"Case Study" from title	"Models, information skill instruction"; "Research--Case study method"

*Does not represent all keyword indexing of the articles.

However, neither Table 5 nor Table 6 nor the SLMR journal keyword index's characterizations of the nature of the studies in Table 6 fully convey the fact that multiple methods of data gathering were utilized in any given study. Thus, the complex nature of the design of the studies is not readily apparent from either the index to the study reports or from the authors' self-reported characterizations. Also, there are evident differences between the article authors' characterizations of their studies and the capture of those same studies in the SLMR keyword index. It is possible that this difference is reflective not only of the nature of the keyword index but also of the complex design of action research studies and/or the unevenness of evolving shared understanding within the LIS profession of what constitutes action research.

IMPLICATIONS

The primary observation by the researchers is that at several junctures there are mixed messages being delivered regarding action research.

The two researchers' 2005 study, which surveyed current members of AASL, resulted in a profile of building-level practitioners who appreciated the relevance of program assessment to their current employment settings but who expressed a lack of comfort with the ability to effectively use more sophisticated traditional research methodologies for collecting and analyzing data about the School Library Media program and its users. They also saw a need for continuing education to assist in ongoing program assessment. In other words, building-level practitioners would not seem to be ready to launch into research endeavors, even as they recognized its potential value.

Then, in this current study, the two researchers observed that the models of action research projects reported in SLMR are complex integrations of several methodologies for data-gathering, coupled with various approaches to data analysis. Given the results of the two researchers' 2005 survey of building-level practitioners' comfort level with various research methodologies, the variety of methodologies used by the action research studies examined in SLMR (per Table 6), and the lack of practitioners as credited authors in these same studies, there is a question of how realistic it is to expect practitioners to engage in action research, particularly action research that might be published in research journals.

However, practitioners are rallied to the idea that action research is not only a worthwhile endeavor but one that can be easily undertaken. Linworth Publishing's *Action Research: A Guide for Library Media Specialists* (Howard and Eckhardt, 2005), a guide for practitioners, emphasizes that since action research "is an area which affects the library media specialist's work, there will be immediate buy-in as to the process" (5). SLMS are also promised that "Action research can be conducted without a group of researchers outside of the school building being involved" (5). In a 2006 state library publication, Howard and Eckhardt stated that "We have found the process of action research is really very simple," and in their conclusions, asked the rhetorical question, "Now, isn't this a simple process? It can be fun!" (2). In her book, *Action Research: A Practical Guide for Transforming Your School Library* (2002), Sykes offers the encouragement that for her, action research "has now become a way to approach life!" (ix)

In contrast to the what he saw as an abundance of presentations and workshops portraying action research as "a manageable shortcut to discovery of new insights" (40), Callison (2007) emphasized that it is a myth that action research can be done without gathering quantitative data (42). Published explanations of action research can be quite candid about the expertise in research methodologies that is required. Martin and Tallman (2001) note that: "in its most sophisticated form, action research involves applying ***traditional research approaches*** [emphasis added] to management issues, teaching-learning situations or professional development concerns (1)." Various commentators, writing in a variety of professional publications, have iterated the required steps for doing action research (Harada and Yoshina 1997, 2-3; Klobas 1997, 7; Dickinson 2001, 3; Martin and Talllman 2001, 1; Howard and Eckhardt, 2005, 2). Those

commonly accepted steps include choice of data collection methods and analysis of data. The employment of both of these critical tasks seems at odds with the two researchers' 2005 study results of practitioners' comfort levels with such approaches.

Besides the two lenses already employed for investigating the consumer/user/practitioner and the products of action research as published in one journal, the researchers believe that the third lens that should be utilized would be looking at LIS education for SLM practitioners, whether in schools of LIS and/or education. Some major studies have been done in the arena of research courses for LIS (library and information studies) graduate degrees, offering at least a suggestion of what the climate of research might be in educational environments that produce many SLMs.

In 1992, Smith and Adams provided a study of ALA-accredited library schools' requirement of a research course. In comparing their data with that of Stephenson's 1987 study, Smith and Adams reported that the percentage of schools requiring a basic research course was fifty-five percent, down from Stephenson's result of sixty-nine percent.

In 2003, Park reported about a study of fifty-two ALA-accredited schools of LIS. Graduate catalogs and curricula were examined to ascertain requirements of research methods courses. Of the fifty-two schools, thirty-two required a research methods course. Of twenty-four schools ranked within a top-twenty tier by *U.S. News & World Report*, half did not require research methods (20). While this study did not examine SLM strands within LIS schools, it is worth noting that Park's conclusion was that "research methods are not a priority in the education of MLS students across accredited LIS programs" (20).

In 2004, Park reported on a comparative content analysis of syllabi of research methods courses from seventeen Korean and twenty United States LIS programs. In that analysis, "action research" was found in four Korean syllabi and in none of the syllabi from the United States (505).

Implications of the Smith and Adams and Park studies are counterbalanced by Gordon's (2006) stance that "It is not unreasonable to expect that the SLMS is trained in research method and is able to use action research as a tool of evidence-based practice." Indeed, given the commonly accepted steps required for action research, such training would appear mandatory for practitioners expected to engage in action research. How should such instruction be provided? As traditional research courses? Should research (especially action research) approaches be presented to SLMSs in other ways than traditional research design? One adjustment that might be made to models already employed for checking the status of research courses in LIS education would be an examination of the place of courses that focus on evaluation as compared to traditional research methodologies. An evaluation course has just been added to the LIS curriculum at the University of Oklahoma, and it was the opinion of the faculty that it would be an appropriate option for SLMSs.

If there is an expectation that SLMSs should engage in action research for program improvement, do they need facilitation, not only pre- but post-graduation, in carrying out those approaches? Gordon (2006), in her description of a "three –

dimensional action research training model" for SLMSs, emphasized that "Action research, as most other tools for improving, requires practice, guidance, mentoring and comparison of results over time and documentation across student populations." How are SLMSs to be encouraged to do action research, in light of comfort levels and the lack of time for such endeavors indicated in the researchers' 2005 study? The issue of lack of time for research, and the lack of educational preparation for it, are hardly recent developments exclusive to LIS education. Worthen and Sanders stated in 1987, citing Hodgkinson from 1957 and Clifford from 1973, that "educators could not be released for enough time to carry out needed research" and that "insufficient numbers of educators were trained in research methods" (27). If education for research endeavors should happen post-graduation, how does that occur? What assistance is offered in professional publications commonly read by practitioners? If SLMSs practitioners actually went to the professional literature to find models of action research studies, would bibliographic control of the research literature and of professional practice literature provide effective linkages?

The two researchers found that action research studies published in SLMR were mostly done by library educators. Is collaboration between researchers and practitioners the only way to entice practitioners to become actively involved in publishing action research, especially rigorous action research? In reference to the rigor of the form of action research used in her training model, Gordon (2006) says that "Such a challenging interpretation of action research requires a practicing researcher who acts as a mentor to the SLMSs."

Are practitioners, especially building-level ones, publishing research, particularly action research, in other venues, including those that are not research journals? Should they do so? Is publication an effective indicator of whether action research is indeed being performed at the practitioner level? Schrader suggests that the profession's constant linking of research to publication means "that the idea of published research becomes oxymoronic." The end result is that "with its typically limited and informed dissemination, investigative activity intended to solve practical problems for institutional planning and managerial decision-making is thus denied the status of research" (47). Does that status matter, and if so, to whom does it/should it matter?

Related to the question of whether linking research to publication is an effective approach is this question: Are practitioners using publications such as the SLMR articles to inform their own action research, presuming that they are engaging in action research? O'Connor and Park (2001) have emphasized the need for professionals to be "informed, critical consumers of research," asking "would we trust professionals in another field if they could not read technical journal articles or if they ignored ongoing research because they did not consider it important or relevant?" (104)

The question of what constitutes action research for SLMSs is a query that should receive ongoing consideration. Should there be a standard model (as for traditional research) for reporting action-based research, especially in relation to limitations or contamination? And, what would be fatal limitations? Callison (2007) says that in action research "standard practices of rigor and ethics must be followed" (40). Certainly Lewin (1948) envisioned it as a rigorous process. Yet, the nature of action research is that it brings into an interwoven, complex relationship the researcher and the study populations,

including practitioners who might fulfill both roles. Table 5 suggests that the fluid role of the practitioner within action research is in contrast to the necessity for the objectivity and the disparate roles for study subjects and researchers that are mandated by traditional research. The two researchers believe that Gordon (2006) offers a realistic assessment of action research in implementation when she says that "In practice, it often lacks a theoretical framework, and its method tends to be less rigorous, particularly with regard to standards for validity." It is the researchers' impression, in examining this population of research studies in SLMR, that reporting about what is being studied (students, artifacts by students, etc.) is not always communicated in consistent structures, in the way that it would be in traditional research reporting. It is also the researchers' impression that the reporting of the published research reports studied is not consistent in identifying what has been done as action research. That is, such studies can be self-identified in many ways, usually with the emphasis on the methodology (-ies) employed, per Table 6.

For the two researchers, there is also a question of the distinctions between action research and evaluation. In 1987, Worthen and Sanders discussed action research, contextualizing it as "a way to integrate studies into practical educational settings," because "researchable problems or issues are best identified in the classroom or school" (27). Also, such research "could be used to generate empirically supported answers that would then be applied" (27). In their discussion of evaluation versus research, Worthen and Sanders say that "research and evaluation differ in purpose even when they use the same methods or techniques", with the distinction being "the purpose for which it is employed" (27). Worthen and Sanders discuss twelve distinctions between research and evaluation, but it is worth noting that they consider evaluation as resulting in "the solution of practical problems," and that it leads to "decisions" rather than "conclusions" (29). Callison (2007) refers to action research as "this evaluative process" (40). Along these same lines, is there a commonly accepted relationship between evidence-based practice and action research? Gordon (2006) illustrates action research and authentic teaching as parallel subsets of evidence-based practice (Figure 3).

Are there other stakeholders in this intersection of research, including action research, and SLMSs: the profession as a whole, professional organizations, schools/communities, even students? Gordon (1999) has emphasized that action research can "heighten the awareness of teachers and librarians in their roles as reflective practitioners **who use the same research methods they are teaching to their students** [emphasis added] to assess the design of the assignment and the pedagogy used to implement the unit." What are the roles of various stakeholders in fostering research by SLMSs, especially action research?

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The Data Mine at the Heart of the Curriculum

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The Data Mine at the Heart of the Curriculum

To the outside observer, American schools have a complex and contradictory relationship with information. On one hand they appear to be drowning in a sea of high stakes test data and surveys. On the other hand they are starving for current information about what students are doing everyday in school. Education policy makers have made great strides in collecting and reporting data with a focus on testing to evaluate the performance of students. The result has been an unprecedented transparency of summary information at the state, district and local level. On the local level, administrators want data driven decision-making but are limited by their data inputs. With only summative results from high stakes testing, their decisions tend to promote more of the same strategies and tactics from the past year or the last decade to achieve improved testing results.

At the same time librarians are accumulating immense amounts of data about students and their learning activities on a daily basis. While it is not test data, the data collected is an indicator of what students are using, when they use it, the preferred format and the portion of the curriculum reflected by the use. The data represents evidence of significant learning activities. A data mine describing the school's daily learning activities is sitting unnoticed at the heart of the curriculum.

The task is to identify the data sources and learning activities and link them to educational goals of the school. Further, the role of the Teacher Librarian (TL) is critical and requires a clear understanding of the combined roles of collecting, analyzing, and communicating information. The examples provided use automated data collection, but all of the data collection, analysis, and reporting can be done with a simple paper and pencil system. The essential point is the TL is uniquely positioned to execute a methodology utilizing the evidence and creating a chain of evidence and making the connections to the school's educational outcomes. The completion of these tasks ensures the TL is making a difference in the lives and learning of our students.

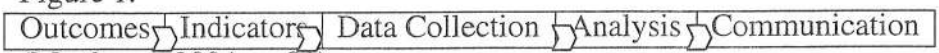
TL Action Methodology to produce results

In a complicated world, where snap judgments are based on seconds of video and audio, the picture of the school library seen by others is not the complete and thoroughly studied view seen daily by the TL. The obviously incomplete picture is all an observer is able view to understand and comprehend libraries in schools. On the other hand, the daily picture of libraries is rarely analyzed or communicated.

Every TL has to tell the library story. The health of the education of students is indicated by the strength of the activities in the school library. The story the TL tells has to be focused on students. Allowing others to interpret what you are doing is dangerous. The picture needs context and measurements to be complete.

The TL needs a methodology for action to ensure the learning activities and programs emanating from the school library are aligned with the student learning outcomes of the school. Figure 1 illustrates the process for use by a TL.

Figure 1.



(Matthews, 2004, p. 81)

Outcomes

"Begin with the end in mind" is the second of Covey's 7 habits (Covey, 2004). Learning outcomes, the defined end result of a planned educational process is the only place to begin the TL Action Methodology. The parent organization creates the outcome statement and the TL adopts it. The learning outcome is not something nice to have. It is a must have.

Indicators and data

The indicators are the activities and behaviors of students in the process of learning. The indicators measure what a good job looks like in terms of the student and what they are learning. Indicators are the milestones or benchmarks to guide policy and decision-making. A good indicator acts as a warning when the process is not working and allows teachers and administrators to identify problems and take corrective action.

The TL begins to collect data based on the needs of the indicator. The activities of the TL ensure a reliable indicator based on clean data. To create the indicator, more than one piece of data is collected because the TL is going to relate the data to student activities. If the indicator is based on a standard calculation, the TL performs action research to establish the standards and givens. The TL is going to have to clean and verify the data set used.

Analysis and communication

Before the TL tells the story, the data and indicators must be analyzed. The TL needs to recognize reality and believe the numbers. Understanding the educational goals of the school and how testing reflects the success or failure of those goals is essential. The challenge is to targeted specific educational results and student learning activities. The analysis is a reflection on the measurements trends, or outcomes.

While numbers may appear unseemly in a world of good works. Everyone recognizes good, but numbers carry the day, everyday. The measurements are based on facts and reliable data. Communication, the final step in the methodology, is based on evidence, is done on a regular basis, and utilizes all channels available.

Linkages to Learning Outcomes

The everyday, the plain, and the ordinary activities of students are documented. The activities are related to the educational function of the school and to the learning

outcomes and by default, the results of standardized testing. The learning activities of students documented and saved in the data mine must align with the learning outcomes. The TL takes all who come to the library and works with all students in every curricular area. It is a scary thought, but the reality gives the evidence validity focused on the entire school and not sub-groups of learners.

The advent of online systems allows the TL to capture a certain amount of the student's time after the school day is complete. In the past when learners were limited to resources available only during the school day at a specific place, shifting time was not possible. Now students are shifting the time for their learning activities to fit their personal schedule and are adding time to the school day. The school is never going to have a complete picture of the educational community unless they can quantify and analyze the time spent on learning activities outside of school. How students use their time is a critical factor when considering policy, process and practice in the learning environment. The TL has the facts to inform the discussion and guide the policy, process, and practice.

What counts?

Learning outcomes have indicators and creating the links in the chain of evidence is the first step. The connection between indicators and outcomes is sometimes lost in the everyday rush to get things done. A few examples are provided to help focus on the connection between indicators and outcomes.

Attendance, both in the school and the library, is clearly a building block. By comparing the average number of students entering the library in a given time period to the population of the school, a benchmark for use is established. It is an indicator of access to materials. Krashen (2004, p. 59) identifies access as one of the critical factors in the development of readers of all ages.

Use of electronic documents further changed the dynamic of access. Learners need a computer and software tools to create and complete assignments. To address the digital divide, the access provided by the school library to computers and software is critical. The number of times students use these tools and when, is another indicator of access. Tracking the access from outside the library and the school itself further defines the extent of access provided and is a clear measurement of online access.

Circulation also counts as indicator. Studies of the use of materials indicate with a high degree of reliability, if a student borrows a book it will get used (Kent, 1979, p. 31). The number of books any student borrows should correlate closely to their reading scores and ability. An indicator is the correlation of books circulated to students. Further indicators for teachers, are the number of books circulated in a specific curricular area and the age of the materials in a particular curricular area. Both are factors that impact the work of the teacher either positively or negatively.

Data Sources

The Data Mine has many shafts, each representing a data source. Invisible walls separate the data sources from each other. The library has data. The school has data. The district and the state have data. There are also rich external sources of data. Action research

creates more data. The variety of data sources provides context and understanding if they can be aggregated and analyzed. Drucker (1995) identified information and collection as an important management task. "A 'database', no matter how copious, is not information. It is information ore. For raw material to become information, it must be organized for a task, directed towards a specific performance, applied to a decision" (p. 109). Drucker's point is the essential charge for the TL.

The key is recognizing data sources and using the data as an indicator of learning activities. The data relates student-learning activities to the educational function of the school. If a TL is going to contribute to the summative outcomes described by high-stakes test, the ability to provide timely formative assessment data to colleagues is a key point.

Internal Data

The available data comes from internal and external sources and in two forms. One form is the clicks and the other is the tics. The tics are data collected manually. The clicks are the data generated by a wide variety of computer software used in managing the contemporary school library. Software is also used to collect and aggregate data at the district, state and national level. A typical school uses an integrated library system with automated circulation, perhaps a reading program, and Internet content to provide services to learners. The systems record each transaction. Data from Internet activity, usually available on the server and accessed by the system administrator, is more difficult to categorize as a specific learning activity. Perhaps the best approach is to consider the activity as "in library use", a term long established in the minds of the TL. Just as books or periodicals are examined in the physical library, but not charged as a transaction to a specific learner, the Internet activity is similar in nature. Virtual learners are examining lists of potential sources to determine what to use and what not to use. Research on use suggests one out of every four print items examined is used (Kent, 1976, p. 51), but the fact the student examined all four is essential to understanding the activity. Matthews (2002, p. 56) explains virtual learning activities as a progression from the hit to downloading then printing and finally use. When the learner is online, they still have to read and make decisions about content and usefulness.

Internal data gathered manually (the tic marks on a data collection sheet) can include a variety of evidence of learning activity from attendance, user satisfaction surveys, and observations of student and faculty activities. Eventually, the tics are transferred to a spreadsheet for analysis making it easier to compare with data generated by automated systems. The input is manual but the analysis of who, what, when, and how is a function of the software. An additional source of manual data is action research done by the TL using sampling or survey techniques.

External Data

Outside of the school library, immense amounts of data are collected and aggregated on the school, district, state and national levels. Data collected beyond the individual school is usually an aggregation of the bits of individual data collected daily from the school's Student Information System (SIS) or reports submitted to the state or district by school personnel. Course Management Systems (CMS) such as Blackboard or Moodle provide

information about learning activities. Test data, not just the scores, but item analysis for specific schools or sub-groups of learners is increasingly made available. The current trend is to also provide suggested remediation strategies to improve student performance, a valuable information source for every school.

District level data is aggregated and allows for comparison to other schools within the district. States were forced by No Child Left Behind (NCLB) to provide report cards on individual schools and summaries for districts and the state. State departments of education provide survey data on a wide variety of topics including activities in school libraries. Valuable data sources at the national level are United States Census data plus survey data collected by National Commission on Educational Statistics. In addition, a myriad of organizations are surveying and publishing their research nationally. In this category, studies done on community literacy provide a valuable resource.

The examples provided are generic in nature. Each TL has to determine the important evidence sources for their school and the local learning outcomes. No two school situations are precisely the same and choosing the evidence for the indicators requires careful thought. The key points to consider are the nature of the source, be it either internal or external. When data is collected for purposes of comparison, the caution is to choose examples for comparison with similar characteristics to the local situation.

Analysis and Communication

School libraries are in trouble because teacher librarians do not use their data mine to advocate in the most basic manner. The two primary reasons for the TL to create a report are internal in nature - to collect overdue materials and to justify budget requests. (Fuller, 2006) The absence of reporting on learning outcomes gives administration the idea that nothing is happening. Miller (2005) found the TL uses a relatively small portion of time for advocacy and program administration in general. The finding suggests that time is also a factor in the process of analysis and communication.

In interviews with 85 school personnel, the author found a distinct difference between the point of view of the TL and administrators on the topic of why teachers in classrooms do not use electronic databases offered by the school library. Teacher librarians saw teachers as the problem. Administrators of all types saw other issues such as access and technology problems as reasons blocking the teachers from using the electronic databases in their classes and assignments (Fuller, 2005).

When you pull of this together, it suggests that the reason 'they" don't get it is because "we" do not know how to tell the story. The conversation has to be planned and deliberate activity. The message must be clear and expressed in terms of student learning activities. Figure 2 is chart of the various types of communication devices available to communicate the learning activities of the school library. Informal communications such as the short conversation in the lunchroom with teachers to book marks for students are fine, but the TL needs greater focus on the formal communications that become part of the official measurement processes used in the school. Further, the TL needs to provide background information to a variety of committees and activities. The principal needs information for the monthly report to upper administration and the school site council needs information to make funding decisions for projects.

Figure 2

Formal	Informal	Background
Newsletters	Top Ten Lists	Library Advisory board
Faculty Meetings	Conversation	Principal
Board meetings	Student	Faculty
Annual reports	Web page counters	Planning committees
Back to school mailings	Blogs	Parents Council
Orientations	Book marks	State reports
Brochures	Bulletin boards	
Staff bulletin		
Community group presentations		
Conference presentations		

Reading example

Drucker (1990) stated the ultimate mission of all non-profit organizations was to change people's lives (p. xiv). Everyone engaged in the process can agree that they are there to change student lives. No single person holds a magic wand in the process of education. To make a difference, a series of steps directed towards the learning outcome are taken. For example, the circulation of a book to a reluctant reader is a basic step combined with many other steps of equal importance to achieve the learning outcome.

Here is an example of a common scenario describing how to put the school library at the heart of the reading curriculum. The learning outcome is to improve the reading level of students as measured by standardized tests. The strategy chosen by the school is to have a student read one million words in a school year. The given is that it requires contributions from a variety of sources. The tactic is to determine the percentage from each source and focus on the sources of reading the school controls. The TL recognizes the contribution of the school library is valuable to the desired outcome. Figure 3 illustrates a worksheet to breakdown the outcome into a series of indicators, data source, collection method and source giving validity to the approach. The TL identifies activities and three indicators to begin the TL Action Methodology. The TL focuses on the first indicator and applies it to the one million words program.

Figure 3.

Outcome: Increase reading test scores by increasing students non-school reading				
Activity	Indicator	Data Source	Data Collection Method	Validity
Student Uses Books from School Library	Books read per week	Circulation System	Automated	McQuillan 1998 as quoted in Krashen (2004, p. 67)
	Planned class trips to library	Class sign up sheet	Manual	McQuillan and Au 2001 as quoted in Krashen (2004, p. 59)
Access to school library to overcome SES	Books read per week are correlated to free and reduced lunch statistics	Circulation System SIS	Automated and manual comparison	Krashen (2004, p. 73)

The form is adapted from *Measuring Program Outcomes* (United Way, 1994, p. 60)

To determine the school library contribution, the TL initiates an action research project. The research technique is sampling of the sources to determine how many words each potentially can contribute. The TL begins by sampling the number of words from the textbooks students use in their classes. Based on a survey of students, the TL samples newspapers, magazines, and websites for the number of words students read in those sources. After factoring all of the sources, the TL is ready to calculate the impact of the school library. Figure 4 charts the various sources and their contribution. Following the contribution is the calculation for the indicator for each source.

Figure 4

Reading Source	Calculation	Average number of words per source
Textbooks	200 words times 1800 pages	360,000
Other sources	40 words per paragraph times 20 paragraphs times 180 days	144,000
Public library	200 words times 75 pages times 9 months	135,000
Total non-school library sources		639,000
School library contribution	1,000,000-639,000	361,000
School library indicator of the learning outcome	361,000 words divided by 15,000 words per school library book	Circulate 24 books per student per year Circulate 2.67 books per student per month Circulate .67 books per student per week
Textbook indicator	1800 pages divided by 180 days	Daily reading assignment is 10 pages per student per day
Other sources indicator	20 paragraphs divided by 2 per minute	10 minutes daily reading from other sources
Public library indicator	135,000 words divided by 15,000 words per book	Circulate one book per month per student

(The figures used are all contrived and do not represent an actual school situation.)

The efforts of the TL provide the teachers and principal with indicators directly related to the learning outcome defined by the school for student reading activities. The responsibility of the TL going forward is to provide analysis of the data and report the indicator. The communication is formal and well publicized to the key stakeholders. The TL engages in conversations with faculty to improve performance and keep the focus on achieving the learning outcome with appropriate programming and activities.

Conclusion

The data mine in the school library leads to the heart of the curriculum. The TL plays a vital role in finding, analyzing, and communicating the data to key stakeholders in the school. The TL uses the data mine to align themselves with the learning outcomes of the curriculum. The data comes from various sources and the TL is the key, organizing the data into usable evidence.

The TL action methodology aligns the student learning activities with the learning outcomes of the school. Beginning with outcomes, the TL looks for indicators linking the learning activities of the school library to the learning outcomes. With detailed knowledge of the data mine, the TL collects the data for analysis. In the final step, the TL communicates in a variety of formats that are planned, regular and sustained.

When the TL uses the data mine but is not willing to address uncomfortable and misaligned situations out of a culture of niceness, students suffer. Without discussion of policy and practice based on factual evidence, student learning suffers. The TL engaged with their school and the learning outcomes can use the data mine to make a difference in the lives of their students.

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Leadership in Libraries: Super Heroes Daily

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Ronica Adcock
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Look for the comic book at:
http://www.stonesoup.info/SuperHeroesDaily

Who can perform multiple roles at once? Who can propel student achievement to new heights? It is not a program. It is not a new law. It is the school librarian, the mild mannered leader behind the stacks. According to Dees (2007), "Leadership is the ability to influence or inspire others to achieve shared goals." The need for effective leadership in schools is vital to successful student achievement. Teacher librarians can fill many leadership roles. Six of these roles are explored here; teacher leader, curriculum leader, technology leaders, research leader, community leader, and communication leader. As demonstrated below, the school and community benefit greatly from these types of leadership.

Teacher Leader

As demonstrated by the increase in professional learning communities in our public schools, the need for teacher leaders is gaining recognition. The school environment has grown increasingly complex with greater demands for achievement and for ensuring the success and well being of all students (Fullan, 2001). The old school structure, which is characterized by authoritarian leadership where school administrators make most decisions, can be revamped and a more democratic atmosphere fostered. The more teachers assume leadership roles, the more democratic the structure and the more effective the school is at achieving the goal of educating young people. High-performing schools encourage strong teacher leadership (Beattie, 2002). Teachers benefit too by experiencing greater personal and job satisfaction. They are enriched and energized as they actively participate in leadership roles. They learn to recognize leadership characteristics in each other, and this boosts morale and promotes a positive atmosphere. In addition, the principal and colleagues benefit because the responsibilities involved in pursuing school goals are distributed and shared.

Teacher leaders assume responsibility for decision-making and take on duties beyond their classrooms (Beachum & Dentith, 2004). They are willing to work with principals and their colleagues to bring about the improvements needed to build a strong, positive school community. They encourage and inspire others to do so as well. Rogers (2005) calls teacher leaders education champions who are by nature driven to strive for improvement in their schools. Teacher leaders are goal oriented and willing to challenge the status quo to bring about needed change. They possess interpersonal skills that enable them to motivate and unite others. They are driven to pursue professional growth and to share their knowledge and ideas. They are confident and have a strong sense of self. They are risk takers, willing to move out of their comfort zone within the walls of a

classroom, willing to be vulnerable, and able to take criticism while staying true to their beliefs. They have a need for autonomy and yet are trusting and caring of others.

There are specific roles that a teacher leader fulfills within the school. One is mentoring, which can be done officially or unofficially. Mentors help facilitate other teachers' learning and provide encouragement and support through the growth process. Another practice that a teacher leader models is effective collaboration and teamwork. Collaborative practices produce a synergy that empowers experimentation and growth. Teacher leaders can become role models for the students who observe and benefit from collaborative teaching efforts.

Recognizing and establishing teacher leaders can create problems. Colleagues might be resistant or even hostile to the idea of teacher leaders. Potential leaders might feel they have little time to add yet more activity and responsibility to their work load. They might have active busy lives outside of school and resist spending any extra time on professional pursuits. They might lack the motivation or the desire to grow professionally and thus resist changing the status quo. Some teachers might feel threatened at the idea of their safe, solitary classroom being open for others to observe, or they might feel insecure in their ability to offer worthwhile ideas. Beattie (2002) lists potential impediments as: inertia, caution and insecurity, poor interpersonal skills, and aversion to risk. Administrators might also pose impediments by stressing that the focus of teaching must be on improving standardized test scores through drill and practice, leaving little time for anything else. If release time is not provided for teachers and teacher librarians, it is difficult for them to plan and execute collaborative projects that might be more effective at improving test scores.

Three factors (Beattie, 2002) have been identified as being necessary for teacher leadership, having a clear goal, being persistent, and being patiently optimistic. It is essential to use interpersonal skills to "nudge" others along, rather than "bulldozing" them, which can cause strong resistance (Ackerman & Mackenzie, 2006). Much can be gained from a teacher leader who works toward awakening a sense of collective responsibility rather than behaving like a lone wolf. Achieving a more democratic rather than authoritative environment promotes the overall success of students and of the school itself. Because of their position in the school, teacher librarians are in a unique position to be effective teacher leaders and to recognize other teachers who have this ability. This is because they have more contact with faculty and administrators. They have knowledge of the curricula for all subject areas and are familiar with the resources that are available to support programs in every department. They witness other teachers' methods and practices, and are in a position to share what they view as effective and appropriate instruction.

Curriculum Leader

There are three primary functions of school curriculum development: establish a clear statement of the school's mission, goals, and objectives; effectively manage the use of the school's resources; and use feedback (such as test scores) to make needed adjustments over time (English, 1979). English points out that the purpose of curriculum

development is to prevent randomness in achieving educational goals and that management is the key to leadership in this area. Without effective curriculum, English states that the school is educationally bankrupt. Johnson, Kritsonis, and Herrington (2006) suggest that the curriculum needs to stress what students really need to know rather than what educators believe should be taught. They recommend that the curriculum serve as a guideline in focusing more on human nature in order to address the complete person. Rosenfeld (2006) and Burk (2006) list roles for teacher librarians who are curriculum leaders. Two crucial roles were identified as instructional consultant and curriculum developer. The teacher librarian is in the position to impact school reform regarding curriculum issues, technology integration, and new teaching practices. Burk's philosophy is to enhance student mastery of information literacy and technology skills by integrating them into the content curriculum. She investigates each opportunity to collaborate with teachers as a pursuit for achieving curricular goals. When this happens, the teacher librarian is viewed as a curriculum leader.

When teacher librarians take a more active role in curriculum issues, they are no longer invisible and isolated in the media center. The teacher librarian can assume many leadership roles in curriculum development. Burk (2006) states that standards-based education and high-stakes testing have put increased demands on classroom teachers and their time. Teacher librarians can demonstrate that they understand this, are familiar with the benchmarks, and can enhance student learning through collaborative efforts with the teachers. They can promote information on the latest use of technology and suggest ways to integrate technology skills throughout the curriculum. They can contribute to the process of development, evaluating, and implementing curriculum (Stark, Briggs & Rowland-Poplawksi, 2002).
Brooks (2004) suggests the importance of developing curriculum that incorporates higher order thinking skills, to encourage more problem-based learning, and to teach for meaning. She stresses that the different subject areas need to link goals in order to provide more breadth and depth of content, rather than each area of the curriculum being separate. Because the teacher librarian is aware of curriculum units taught throughout the school, they are in a position to support interdisciplinary learning activities. Brooks recommends that curriculum development should call for research-driven, theory-driven instruction with one of the key skills taught being information synthesis. This is an area where the teacher librarian can make significant contributions, becoming a curriculum leader by pursuing the goals of integrating problem solving skills throughout the curriculum and by collaborating with teachers in accomplishing curricular goals.

Many educators don't recognize the importance of incorporating problem solving skills throughout the curriculum. Hickel (2006) believes that teacher librarians should play a major role in curriculum development in all subject areas. She has worked hard in her school to bring that about, dealing with indifference and outright hostility when first attempting it. But she persisted in participating in curriculum committees in order to become familiar with the learning objectives and to contribute ideas about how information literacy skills can be integrated throughout the school curriculum. In addition, she is able to gain a better idea of what resources would effectively support the

curriculum needs and to better assist students one on one when they come to the media center.

In conclusion, the teacher librarian is a natural curriculum leader through collaboration and the integration of library resources into the curriculum (Burk, 2006). Burk provides an interesting analogy. If the destination is collaboration with the goal of enhancing learning, the teacher librarian provides the road map. To encourage curricular collaboration, the teacher librarian participates on curriculum teams, learns the standards and benchmarks, assists in integrating information literacy and technology skills throughout the curriculum areas, and ensures that needed resources to support the curriculum are available.

Technology Leader

A technology leader plays a crucial role in a school's technology planning and preparation. Bennett and Everhart (2003) state, "The lack of leadership is the single biggest barrier to the use of technology" (p. 23). Technology leaders devise ways for technology to be integrated throughout the curriculum. Key in this planning is acquiring needed technology and creating the type of lessons where students use it effectively. Barriers to integration can include access, time, cost, training, and lack of innovative planning. Teacher librarians, with the support of their administration, are crucial in overcoming these barriers and are also vital in conducting professional development for training others in the use of technology. According to Hopkins (2004), barrier-free information access is essential for all students to succeed in becoming information literate.

On the topic of barriers, everyone deserves to be able to access the Internet and to use technology. Being on the forefront of emerging technologies, teacher librarians are in the position to help make this possible by being aware of assistive technologies and utilizing them as a way to help students who have disabilities of various kinds. By providing media-rich school library resources, the teacher librarian assumes a leadership role in making the best use of technology for everyone. Students with disabilities need this kind of leadership in order to develop skills, enjoy literature, complete research, and a variety of other tasks that other students take for granted.

Another important aspect of technology leadership is participating in professional development and other activities in order to stay on top of new technology developments, and then passing that knowledge on to other teachers and students. According to Brown and Sheppard (1997), the teacher librarian is a mirror image of teachers, but must also go beyond that image in contributions, exhibiting a superior knowledge base. This is done through demonstrating technical, personal, interpersonal, and team skills. The technology leader also models values and beliefs in the efficacy of technology. A few of the specific contributions made by teacher librarian technology leaders are: trainer of technical skills, awareness of and selection of new technologies, and operation of the technology in the library media center.

One way that teacher librarians stay on the forefront of the latest technology issues is by reading articles and regularly reviewing informative websites. Troutner (2006)

recommends several websites that can assist in this goal of being a technology leader. One is techLEARNING, which offers articles on the latest hot technology topics, ranging from new software tips to grant possibilities. The Consortium for School Networking (CoSN) provides tools for technology planning, cyber safety tips, and more. PBS Teachers offers links to lessons and resources. One of Troutner's suggestions, Edutopia, is a professional development tool that includes materials on the latest technology issues.

Ferenz (1999) stresses that a school needs to use technology to support teaching rather than teaching to support technology. Teachers who are not utilizing these tools adequately with their students can benefit from the leadership of the teacher librarian through collaboration, curriculum design, having access to needed technology resources, and receiving just-in-time training. Loertscher (2006) offers six reminders for technology collaboration: use clear goals, match the goal to the task, design authentic tasks, use active inquiry that leads to higher-level thinking, help learners to graphically organize what they are learning, and have students work in groups when possible. Along with these strategies, to be viewed as being on the cutting edge in the use of emerging technologies, teacher librarians can demonstrate new ways to use the Internet in the classroom. For example, the teacher librarian might write a blog reviewing books, guide teachers in how to use blogs for educational purposes, teach how to use wikis to support lessons, or model the use of podcasts to showcase student work or to demonstrate the success of collaborative efforts between the teacher and the media specialist. Teacher librarians who are able to offer ideas for integrating technology into the curriculum, suggest ways technology can be used to accommodate varying learning styles, and serve as a guide to teachers and students, are key technology leaders in their schools.

Research Leader

School administrators use research to make informal decisions (Marzano, Waters, & McNulty, 2005; Reeves, 2006), reflective teachers experiment with lesson plans in order to make them more effective (Noffke, 1997; Parsons & Brown, 2002), and students work through research processes that might fall anywhere on the continuum between directed inquiry and free inquiry (Koechlin & Zwaan, 2006; Olson & Loucks-Horsley, 2000). The teacher librarian who is a research leader supports these types of research activities in the school community.

School administrators manage change. At times they drive it forward. Occasionally they resist it. Reeves (2006) observes that administrators who are leading and learning use research in their decision making. Their decisions are as good as the information that informs them. Teacher librarians who are research leaders support administrative decision-making by building a professional development collection that includes information on both the current educational flavor of the month and strategies that have been proven, through research, to accomplish educational goals (Robins, 2000). Finding research on the current educational trends is not difficult for a proficient searcher who has electronic databases available. Creating a bibliography of research on effective teaching can inform the school's decision maker and derail fruitless change that can be costly in terms of time, money, and morale. A bibliography of sound research on educational

innovation can provide justification for changes that hold the promise of improving student achievement.

The reflective teacher is one who constantly looks for ways to improve individual student achievement. One way to accomplish this is through applied action research "in which the researcher/investigator is also the practitioner (i.e., teacher) and attempts to use research as a methodology for identifying [what] they do and make decisions on doing it better" (Parsons & Brown, 2002). To move from a reflective practitioner to an action researcher, a teacher makes a systematic study of the impact of strategies they use in the classroom to improve student performance. These interventions can be done on behalf of individual students or entire classes. In order to conduct a systematic study, the teacher collects data that document the effects of the intervention. This is where the teacher librarian, as research leader, can help. The teacher librarian can aid in the design of the intervention, the data collection strategy, and the recording of the process. The teacher librarian is also in a position to share discoveries about successful instructional strategies with other teachers.

For those interested in action research that promotes collaboration between teachers and teacher librarians, Loertscher (2007) is conducting a collective action research project. Details about this project are linked at: http://www.davidvl.org/. In this project, before collaborating on a lesson with a teacher librarian, teachers make predictions about how well individual students will perform in a lesson. After the collaboration, the predictions are compared to actual student performance. The comparisons are added to those of other teacher/teacher librarian partnerships around the world. The results will provide evidence of how collaboration between teachers and teacher librarians impacts learning.

The key recipients of a research leader's efforts in a school are the students. As a research leader the teacher librarian initiates students into the research process. In many situations this is limited to a search for knowledge on a designated topic. But this process can be greatly enhanced if the students themselves are asking the questions directing the search (Koechlin & Zwaan, 2006). Authentic questions, rather than those imposed by teachers and textbooks, can lead to an exploration that involves messy, complex, real world problems. These kinds of problems spark inquiry and fuel it throughout the research process. Student generated inquiry can lead to the use of higher level thinking skills, like analysis, evaluation, and the transference of knowledge to new domains. Generating inquiry requires careful planning. Teacher librarians are essential to the process because they know how to use information to enrich lessons and how to help students develop research skills.

When the teacher librarian is a research leader in a school the effect is infectious. The school library becomes the heart and the brain of the community, providing access to rich information resources (Valenza, 2006). With the guidance of the teacher librarian, everyone in the school community can develop an understanding of how to best find or create the information they need to accomplish their goals. The teacher librarian offers independence and intervention in "making sense of the new media jungle" (Valenza, p. 59). In conclusion, the teacher librarian is a leader who prepares administrators, teachers,

and students to use effective research skills. By mentoring, modeling, and teaching, the research leader promotes information literacy and helps others become independent inquirers and researchers.

Community Leader

Information Power: Building Partnerships for Learning points out how of librarians can connect with communities beyond the school media center. Sitter (2006) points out that teacher librarians are in the unique position of having opportunities to connect students, teachers, and the community in partnership efforts to promote learning and community awareness. This might involve service-learning, which combines service to the community with classroom instruction. Teacher librarians are familiar with the skills required to make these efforts work: networking, coordination, cooperation, and collaboration. Benefits from incorporating service-learner into library programs include giving students opportunities to connect with culturally diverse groups and to discover the rewards of serving the community. These opportunities help students to develop a stronger awareness of civic responsibility while motivating them to learn.

Shutzer (2007), an elementary school librarian, stresses the importance of community outreach in improving student literacy. She offers four very practical ways to approach this type of endeavor:

1) Organize a community reading day, inviting community leaders and politicians to come to the library and read to the students. Not only do the children connect with community leaders, but also these leaders get a chance to see how funding for the library program is used.
2) Host a sponsored, community book sale. In this effort, families and the community promote the value of reading both in school and at home.
3) Work with a local college. Perhaps college students could do after-school tutoring or read to students. One example Shutzer gives is a project where college students painted eleven murals on the library walls depicting scenes from books.
4) Private school partnerships can also provide a valuable exchange of resources and connect members of the community that might not otherwise work together.

Van Dusen (2007), a librarian at a state university, suggests that community outreach is more than just reaching out to the community—it means providing opportunities for the school library to serve more members of the community. One suggestion she makes is to provide ways for students to connect with the community outside of classroom activities. Middle school students might volunteer to work after school in the elementary library, reading to or assisting younger students. High school students might teach members of the community (such as senior citizens) technology skills (Van Dusen; Anderson, 2003). Students who volunteer time in the community develop loyalty and good citizenship. Van Dusen (2007) also suggests that teacher librarians provide parents and community members with guest library cards so that they can use materials in the school library. The school librarian can also make connections to the community by extending hours and if possible remaining open in the summer. The extra funding for this could be supplied

through community outreach grants. In addition to opening up access to the library's book collection, school librarians might consider providing opportunities for community members to access library technology. Another recommendation is for the teacher librarian to provide resource guides on topics like recommended book lists and interesting web sites. One school librarian in Kansas who pulls several hundred of the library's newest fiction books and loans them to the local public library for summer reading programs. This is an example of a teacher librarian who is also a community leader (Van Dusen).

Community outreach programs can correspond to local celebrations. One school brings in local veterans to talk to students who are doing research on wars. Another idea is to bring families into the library with a family day where everyone participates in educational and fun activities. This could be centered around a family history project where students conduct research of their genealogy. Barry (2007), a public librarian, writes about a program that her public library launched to reach Hispanic members of the community. Since populations everywhere are increasingly diverse, it is important for our libraries to make community connections to meet multi-cultural needs. The library Barry describes created an ESL Family Storytime. Barry states that immigrant families tend to be hesitant to make use of libraries, feeling unfamiliar with the language and the way the facility works. Storytime brings families into the library, giving them a chance to gain not only language skills but also confidence and an understanding of the importance of families in language development.

Noesen (1997) is a principal of a small elementary school in Los Angeles County. 80% of the community and student body are Latino; 76% of students live at or below the poverty level. The school's history program has transformed their school in many ways by making use of community resources. Students in history classes conducted activity-based projects such as archaeological digs where artifacts found are examined. Students have also investigated reasons for homelessness in their community. Parents and other community members were involved in these and other projects, and a strong link between the school and the community was formed. The curriculum in this history program is integrated with curriculum throughout the school, linking all the classes through common learning goals. Noesen refers to his school as classrooms without walls, a fit description for this dynamic program.

Anderson (2003) provides examples of community outreach that include a group called "Communikids" which is an intergenerational project involving senior citizens and students. She also permits local businesses to conduct meetings in her library and an investment club to utilize the computers. Parents come to the library in order to study for their GED or to attend Family Reading Night activities. Anderson (2003) believes that the power of technology lies in its function as a relationship-building tool. She recommends providing community access to technology resources as well as the print collection.

Another way that the teacher librarian can connect with the community is through the library web site. In addition to being a research portal, the library site can be a tool to

announce and promote community involvement, and invite participation in programs at the library. Other ways the librarian can reach out with technology is through the creation of podcasts of interest to the local community. It takes a lot of work to be a community leader, but working with communities builds support for and understanding of the library media center's purpose and programs.

Communication Leader

Glantz and White (1990) share practical tips for becoming a communication leader, contributed by teacher librarians from around the country. These tips include writing a one-page monthly newsletter to inform the faculty of new items in the library, new programs, and other pertinent information, such as hours of operation. Another tip for communicating is to create a notepad "From Kathy in the Media Center" with catchy cartoon graphics. Create attention-grabbing memos—and attach candy to them. Have a bulletin board message center where students and faculty can post recommended book titles, the librarian can post messages, and more. No time to do book talks? Start a newsletter book talk to be distributed to faculty and made available to students. Create a library-style jeopardy game about how to use the facility, such as a library orientation game which can be accessed by parents as well as students, using the school website. These are some of the effective ways that the teacher librarian can communicate with staff, students, the community, and beyond.

Howard (2004) suggests that teacher librarians prepare a handbook or folder for teachers containing pertinent library information such as services, procedures, and policies. Teachers could be encouraged to keep library newsletters in this folder along with materials used in collaboration. Howard also recommends that the teacher librarians form a library advisory committee, asking for volunteers to assist with activities like Read Across America and for other relevant tasks. Another suggestion is to create a form for teachers to request books, request collaboration, and make suggestions. Other ideas for being a communication leader include participating in grade level meetings, conducting library orientation for new teachers, and providing recognition to teachers who have made library use part of their lessons.

Huwe (2006), director of library resources at the University of California, stresses that today's librarian embraces the digital age. Pool (2005) suggests that students are the beneficiaries of the digital knowledge explosion and communication bonanza. Becoming a digital communicator involves knowledge of web sites, digital repositories, publications, and exhibits (Huwe, 2006). The digital communicator monitors information dynamics and takes appropriate action to make this information easily accessible. The Internet has expanded what we call community, but that connection can be tenuous. Huwe states that email is glue that connects community. He stresses the importance of the library web site in communication and in organizing access to digital resources. Pool (2005) suggests that teachers and teacher librarians create personal blogs or utilize those that are already posted to promote curriculum topics and services, such as book talks. Another digital communication tool that can be valuable is the podcast; students can create their own podcasts or access those made by others. Even the common

cell phone can be a potential learning tool with its capacity for Internet access and instant messaging.

According to Miller (2006), the teacher librarian is in the unique position of being able to guide and support the students, faculty, administration, and other patrons in developing programs and collaborations that utilize the Internet and to provide the best resources for communication. But the future holds even more promise for the teacher librarian who is a communication leader. Internet 2, a consortium, is part of a worldwide chain of 47 systems that communicate through high-speed broadband networks. The potential for expanding partnerships and collaborations such as these is huge. Internet 2 began in 1996 and is now led by 206 universities partnering with industry and government. The consortium has two goals: to enable revolutionary Internet applications, and to ensure the rapid transfer of services and applications. In 2001, the Internet 2 began an initiative to encourage K-12 schools to participate in this network using advanced technology to connect to students, teachers, libraries, museums and other educational institutions worldwide. One way K-12 students could take advantage of this communication resource is through videoconferencing now that many inexpensive conferencing applications are available. Another way to utilize this resource is through forming interactive collaboratories where teacher librarians can pool copyright free digital resources. Many of the uses of Internet 2 communication tools have not been imagined yet. But the teacher librarian with an eye to the future will be alert for ways this new technology can enhance communication in schools, becoming a leader in still another area.

Conclusion

A teacher librarian who participates in all six roles of school leadership is indeed a superhero, and these individuals are not rare in schools today. Table 1 depicts the duties of a real, practicing teacher librarian and co-author of this paper, Robin Gibbons. As a teacher leader, she works on curriculum, as well as assists in teaching and in student discipline programs. As a curriculum leader, she collaborates and attends curriculum meetings. She also maintains a collection that supports the activities of all of the teachers in the school. As a technology leader, she maintains resources, participates in planning, and provides training for faculty and staff. As a research leader, she shares information about successful and unsuccessful instructional programs in her school and in the larger professional community. As a community leader, she draws others to the school through events in the library and by sharing school news. In the role of communication leader, she emails members of the school community, and writes articles and reports that inform the parents and the larger community.

The figure demonstrates that leadership in the library involves many types of activities. Although the demands on teacher librarians are complex, these superheroes rise to the occasion every day. Leadership in the library contributes to the well-being and success of everyone in the school community.

Table 1. Library media specialist roles as experienced by Robin Gibbons.

Teacher	Curriculum	Technology
• Daily instruction • Voluntary hall duty • Communication Arts Team planning and support • Professional Learning Community curriculum support • Grading/commenting on student work in the media center • Collaboration with teachers, both • informal (based on focus sheets) and formal (meetings) • Readers' Advisory services • BIST discipline plan	• Communication Arts Team planning and data—DRA scores, writing prompts, etc. • District media specialists meetings re: collaboration and support for GLEs • Professional Learning Community team—work on 6-trait writing, Big 6 • Monthly Focus Sheets to classroom teachers for support of classroom curriculum • Circulation • Inventory • Purchasing • Readers' Advisory services	• Technology Team member • Building contact for *Reading Counts, Reading A to Z,* and *Knowledge Box* • Responsible for building web page maintenance • Building liaison between faculty/staff and technology dept. re: updates, troubleshooting • Formal *Destiny* (online OPAC) training for faculty/staff annually • CirculationInventory
Research	**Community**	**Communication**
• Emphasis on value of flexible scheduling • 6-trait writing support • *MASL Speaks* presentation to building principals • Continuing and constant research on the value/lack thereof of reading programs such as *Reading Counts* • Purchasing • Teaching research skills	• Book Fair • Communication Arts Night/Math Night • Visits from the children's librarian-Cass Co. Public Library • Guest readers • News in district "Quick News" • Building web page maintenance • Attendance at PTA meetings • Communication with local newspaper re: events • GKCASL, MASL meetings and functions • Providing free coffee, treats, and the use of the library for folks	• Emails to teachers re: web sites, upcoming literature events, festivals, Scholastic/Borders teacher events, author/illustrator local visits • Book Fair promotions/preview • Core Data to DESE • Email communication with other LMS in/out of district re: professional issues • Articles in PTA newsletter • Articles in GKCASL, • MASL publications • Supervise paraprofessional

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Facing the Reform Challenge: Teacher-Librarians As Change Agents

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Abstract

As teacher-librarians, we have frequently been reactive rather than proactive leaders in reform initiatives. Are we ready to move from the sidelines to the center of change actions in our schools and districts? Culling from ideas and examples presented in their recently edited volume, School Reform and the School Library Media Specialist, the authors urge teacher-librarians to assume leadership roles that influence substantive school improvement.

School reform initiatives have always been complex, messy, and amorphous. They encompass topics ranging from school-based management to uses of technology in the classroom. Fueled by federal and state mandates targeting high expectations for all students to succeed, reform initiatives hold school systems accountable for an increasingly diverse student population. It's no wonder that educators consider themselves at the "epicenter of a continuing tempest" (Kinsler & Gamble 2001, 3).

The history of school librarianship reveals that teacher-librarians have participated in evolving concepts of reform in education (Urbanik 1989) beginning with the Progressive movement of the early and mid-1900s, and continuing through the science and math emphasis of the post-Sputnik era, the pendulum swing back to basics in the 1980s, and the current focus on standards-based education. The school library's participation in these movements, however, has been largely "as a reactive agent to educational change" (Carroll 1981, 22). In spite of the fact that the evidence of the relationship between high-performing schools and successful library programs has grown over the last several decades (e.g., Lance & Loertscher 2005, Lonsdale 2003, Todd & Kuhlthau 2005), general reform literature has not recognized the role of school libraries in relation to student achievement. For this reason, leaders in the field of school librarianship have urged teacher-librarians to become facilitators and leaders of education reform rather than reactors to it.

In this article, we challenge the school library community with several hard questions: How do teacher-librarians act as skilled change agents? How do they deal with educational change proactively and productively? How do they work with classroom teachers, administrators, parents, and community members to implement reform initiatives that make a difference in the lives of students? We provide responses to these questions by culling information and insights from a number of sources, notably from *School Reform and the School Library Media Specialist* (Hughes-Hassell & Harada

2007), the most recent title in the Principles and Practices series published by Libraries Unlimited. We begin with a description of change agentry and follow this with examples of how teacher-librarians might be proactive agents in five key reform areas: (1) building rigor in what students learn, (2) incorporating information communication technologies in the curriculum, (3) promoting evidence-based practice, (4) engaging families in literacy development, and (5) addressing the issue of diversity in our school populations.

BEING CHANGE AGENTS

What is change agentry? What do change agents do? Fullan (1993) defines change agentry as "being self-conscious about the nature of change and the change process" (12). Change agents support, assist, nurture, encourage, persuade, and push people to change, to adopt an innovation, and to use it in their daily work (Hord, Rutherford, Hulling, & Hall 2006). They act as caregivers, coaches, connectors, and catalysts (Stripling 2003). Regardless of the roles they assume, the goal of the change agent is "to fill the gaps of expertise and to assist in charting and implementing courses of action" (Fullan & Stiegelbauer 1991, 215).

Various educators have described the characteristics or core capacities required for individuals to be effective change agents (e.g., Fullan 1993, Glickman 2002, Fullan & Stiegelbauer 1991, Fullan & Hargreaves 1991, Connor 1998, Feehan 1991). Table 1 provides a list of the most frequently mentioned characteristics.

Table 1 Core Characteristics of Effective Change Agents

Characteristic	Definition
Moral purpose	Desire to make a difference in the lives of students, to contribute to the betterment of society, and to the application of democratic principles
Personal vision	Understanding of motivation and purpose for becoming an educator
Commitment	Dedication to continual improvement of self, students, and colleagues
Capacity for inquiry	Habit of continuous learning and reflective practice
High abstract thinking skills	Ability to view innovations from multiple perspectives and to generate multiple plans for implementation
Knowledge and mastery	Command of the content of the new practice, its purpose, and the benefits that will result from its use Understanding of the school culture
Collaboration	Understanding of the benefits of collaboration to self, students, and colleagues; ability to work with others
Resiliency	Ability to remain flexible, focused, organized, positive, and proactive when faced with change
Interpersonal skills	Demonstrate the interpersonal skills needed to work effectively with people: sincere, honest, realistic, perceptive, enthusiastic, empathetic, and trustworthy

Core Characteristics of Effective Change Agents

In the remainder of this article, we sketch how teacher-librarians might display many of these characteristics as strategic players in different targets of school reform.

BUILDING RIGOR IN LEARNING

Rigor in the educational context refers to learning that stimulates curiosity and discovery. Such learning challenges students to engage in deeper questioning and analysis of topics, issues, and situations. It requires *teaching for understanding* that underscores "the ability to think and act flexibly with what one knows" (ALPS 2006). Understanding goes beyond comprehension. Stripling (2007) states that understanding reflects "the power of learning that a learner develops when he or she interprets, evaluates, and applies or transfers knowledge to a next context" (38). She also stresses that educators can only teach for understanding by "creating learning experiences that require the development of essential knowledge, the use of cognitive and metacognitive skills, and the application and transfer of knowledge" (38).

For this type of deep learning to occur, instructors must introduce opportunities for cognitively complex tasks to solve real problems rather than low-level, fact-gathering tasks that contribute to shallow performances. The students start with a driving question. They use multiple sources of information and learn in a social context. They are motivated to persist when teachers scaffold instruction by breaking down tasks, and use modeling, prompting, facilitation, and coaching. Students construct artifacts and performances that are representations of their findings and solutions. Importantly, content and process are not separated. As Case (2005) indicates, "thinking without content is vacuous and content acquired without thought is mindless and inert" (46). Figure 1 provides an example of how a teacher-librarian might serve as a collaborator and a connector in creating an interdisciplinary unit of study that moves "beyond superficial, activity-based instruction to deeper, constructivist approaches in which the student is expected to engage actively and thoughtfully in building meaning" (Stripling 2007, 45).

Figure 1 Example of Teacher-Librarian's Role in Building Rigor in Learning

Mark and Meredith, social studies and language arts teachers at Ocean Point High School, decide to work on a project-based unit together after attending a faculty workshop on collaborative learning. Cindy, the teacher-librarian, immediately offers to help since she is familiar with the content standards in both disciplines. She has also worked well with both teachers in the past. As a member of the team, she suggests several topics that might be exciting for the students. Together, they decide on the concept of global interdependence. Knowing how busy the teachers are, Cindy also volunteers to take notes of the team's planning meetings and send the summaries to Mark and Meredith via the school's e-mail system.

With the students' input, the team members formulate the overarching questions for the project and brainstorm criteria for assessing student performance. Mark decides that a major criterion for social studies is students being able to explain the impact of a specific global issue (e.g., a food crop, a disease, a trade good, a migration) in different parts of the world. In language arts and in the library, Meredith and Cindy focus on students being able to critically evaluate primary and secondary sources and select relevant information in developing their specific projects. Cindy also arranges for videoconferences with community experts on specific issues.

The instructors allow the students to select different formats for their final presentations. Cindy takes the initiative to conduct Web searches for possible project ideas and shares these creative examples with the teachers and students. Ultimately, students present their work to other classes at a culminating event staged in the library media center. Cindy also helps the students create a Web page to exchange their information with peers working on similar projects in other high schools in the state.

[Note: Ideas for this example come from *Collaborating for Project-Based Learning for Grades 9-12,* by V. H. Harada, C. H. Kirio, & S. H. Yamamoto, Linworth Publishing, Inc., in press.]

Example of Teacher-Librarian's Role in Building Rigor in Learning

INCORPORATING INFORMATION AND COMMUNICATION TECHNOLOGIES

The Millennials are the newest generation with half of them already eighteen years old. Being digital natives, who assume communication to be anywhere and anytime, this generation also expects technology to be a natural part of their learning environment. It's certainly true that they live in a world where literacy in information and communication technologies (ICT) are critical (Partnerships for 21st Century Skills 2004). Berger (2007) states:

> Technologies' ubiquitous presence is evidenced in everything we do, including the way we locate information, communicate, write, learn, shop and even socialize. It is having a significant impact on the way we live and even on the notion of an educated person. Competence with ICT is seen as a perquisite for participation in society and the workplace (112).

The ICT Literacy Panel (2002) defines digital literacy as "using digital technology, communications tools and/or networks to access, manage, integrate, evaluate and create information in order to function in a knowledge society" (10). Unquestionably, technology opens exciting avenues for accessing and producing information. Students use tools such as word processing programs, spreadsheets, and databases to outline ideas, draft reports, analyze numerical data, manage data, and organize information. They use e-mail, online forums, blogs, wikis, and chatrooms to communicate and collaborate with contacts around the world (Harada, Kirio, & Yamamoto, in press).

On a more formal level, the Internet provides access to a wealth of resources available in libraries, museums, and geographically remote research sites. Students use an ever-increasing range of software tools to produce innovative expressions of their work. Internet and digital video technologies promote collaborative activities among geographically distant students. Many of them participate in simulations or virtual worlds and work together to accomplish tasks online. Students also archive their electronic products for others to review and critique. In addition, they employ technology as a tool for assessment and evaluation, e.g., the development of electronic portfolios (Harada, Kirio, & Yamamoto, in press).

It makes good sense for teacher-librarians to be critical partners in ICT since these skills "build on the foundation of traditional literacy, research and information literacy skills, technology skills, and critical thinking skills—the core skills of the school library program" (Berger 2007, 126). Figure 2 provides a snapshot of how a teacher-librarian might function as a collaborator, a coach, and a caregiver in assisting both teachers and students in achieving a new level of literacy.

Figure 2 Example of Teacher-Librarian's Role in Incorporating ICT

Harriet, the teacher-librarian at Clear Mountain Middle School, spends her summers taking courses in the use of various digital technologies. Last year, she completed a special Technology for Teaching program through the state department of education. She works closely with Sarah, the technology resource specialist at her school. They are both excited about incorporating different digital tools and software into the school program; at the same time, they realize that many of the veteran teachers are technologically challenged. Together, they plan a series of faculty training sessions on the use of tools and resources such as the digital camera, iMovie, podcasts, and wikis. In addition, Harriet offers mini-workshops on accessing information through online catalogs and primary sources available on the Internet. She and Sarah make the sessions non-threatening and fun for the faculty.

They also collaborate with the fifth grade teachers on units of study that incorporate some of these tools. While the teachers take the lead in covering the content, Harriet and Sarah support the students as they gather information, not only through text but also through symbols and visual images (i.e., graphic literacy). They assist the students in learning to navigate in the hypertext environment of the Internet and coach them through the production phase of the students' team projects. Throughout their work, Harriet and Sarah emphasize the importance of critically analyzing information and assuming ethical responsibility for working in cyberspace.

[Note: Ideas for this example come from "Literacy and Learning in a Digital World," by P. Berger. In *School Reform and the School Library Media Specialist*, edited by S. Hughes-Hassell & V. H. Harada, Libraries Unlimited, 2007.]

Example of Teacher-Librarian's Role in Incorporating ICT

PROMOTING REFLECTION AND EVIDENCE-BASED PRACTICE

Reflection is a vital component of the learning and teaching processes. Being able to examine one's own performance and actions are the first steps in self-awareness and self-regulation. As reflection becomes a natural part of the total learning experience, students realize the empowering nature of assessment. This metacognitive knowledge gives them control over their own learning. When students practice this type of thoughtful behavior, they build essential skills and dispositions for self-directed excellence that lead to lifelong self-improvement (Jones 2006).

Reflection is not only crucial for students; it is equally critical for the teachers and library media specialists. By examining their instructional practices, professional colleagues ask deeper questions about the validity of what they teach and how they teach. They hone their skills in designing assessment techniques and using the data and student feedback to drive improvement. Effective reform efforts demand that practitioners have intimate knowledge of current research and combine this knowledge with craft wisdom (Todd 2007). The result is practice that is based on "best-available evidence" (Todd 2007, 59). Coe (1999) identifies the following as critical dimensions of evidence-based practice:

> ...the ability to collect, read, interpret, and integrate valid and applicable user-observed and research-derived evidence; the combining of this evidence with professional expertise, insight, experience, and leadership; and the application of this evident and wisdom to ensure significant and optimal outcomes (quoted in Todd 2007, 58).

Todd (2007) elaborates on the value of evidence-based practice in making decisions about the teacher-librarian's instructional role:

> [It] is more than getting research into practice to guide day-to-day decision-making and actions. It is also about focusing on the delivery of services based on the stated goals and objectives, systematically demonstrating outcomes and endpoints in tangible ways, and critically reflecting on inputs and processes to build an evidence-based cycle of continuous improvement...In the context of school libraries and school goals and objectives, evidence-based practice means that day-by-day work of school librarians is directed towards demonstrating the tangible impact and outcomes of services and initiatives in relation to student learning outcomes (62-63).

Action research is a tool for evidence-based practice. Ziegler (2001) defines action research as "an intentional systematic method of inquiry used by a group of practitioner-researchers who reflect and act own the real-life problems encountered in their own practice" (3). According to Gordon (2007), teacher-librarians are well suited for this type of research because the qualitative methodologies used in action research are easily integrated with everyday activities. She also maintains that the cooperative nature of the work between teachers and teacher-librarians is "ideal for the collaborative tendencies of action research" (166). Conducting this type of investigation "bolsters school librarians' confidence and transforms their perceptions of their role from one of support to one of leadership" (Gordon 2007, 177). Figure 3 presents an example of a teacher-librarian functioning as a catalyst in conducting action research.

Figure 3 Example of Teacher-Librarian's Role in Action Research

Sam, a teacher-librarian at Purple Valley Elementary, invites Carolyn, a fifth grade teacher, to collaborate with him on investigating her students' ability to distinguish between ethical and unethical uses of information. She expresses interest in doing this because she is concerned about the overall quality of her students' research projects. They apply the following systematic process in building an evidence-based framework for their action research.

- *Read the research:* Sam takes the lead in searching online for studies that have been done in this particular area and shares them with Carolyn.
- *Focus on student learning*: Both Sam and Carolyn are concerned that students are not able to restate, summarize, or paraphrase information gleaned from various sources. They agree that students also need to understand the ethical implications of using information responsibly.
- *Employ evidence gathering strategies:* They create and administer a pre-survey that serves as a diagnostic tool. The results indicate that students have misconceptions about what constitutes plagiarism and copyright infringement. They use this data in designing a science unit on the conservation of rain forests. Sam focuses on lessons on note taking (e.g., paraphrasing and summarizing information) and creating bibliographies. Both Sam and Carolyn discuss with students the impact of plagiarism and the importance of copyright compliance. At the end of the unit, they administer a post-survey. Using the survey results and other assessment data they have gathered through the course of the unit, they compile evidence of the progress that the students have made.
- *Mesh results with other evidence in the school:* All the faculty members have been working on curriculum maps for the school year. These maps are comprehensive matrices that identify and align the following: content standards, specific learning objectives, assessment criteria and tools, and specific units of study. Carolyn incorporates the unit on rain forests in her curriculum map. Sam also documents this unit in his instructional map for the library program.
- *Disseminate evidence:* Carolyn and Sam share their collaborative research and teaching efforts at a faculty meeting. The teachers like how Carolyn has incorporated this unit in her fifth grade map of the curriculum. This motivates several of them to request Sam's assistance with library-related instruction and assessment that they might incorporate in their respective maps.
- *Build on evidence:* Sam and Carolyn reflect on what they have learned from the action research and discuss other investigations to conduct as a team. Sam also considers ways to involve additional teachers in this type of research.

[Note: Ideas for this example come from "The Real Thing: Authentic Teaching through Action Research," by C. A. Gordon. In *School Reform and the School Library Media Specialist,* edited by S. Hughes-Hassell & V. H. Harada, Libraries Unlimited, 2007.]

Example of Teacher-Librarian's Role in Action Research

INVOLVING FAMILIES IN LITERACY DEVELOPMENT

A child's literacy development and education is dependent on the quality of the family environment and the family's involvement in his or her learning. This type of engagement goes beyond the conventional focus on what parents do for the school, e.g., raising funds, chaperoning on field excursions, and volunteering at special events. It centers on *family literacy* that integrates the following activities:

> (a) interactive literacy activities between parents and their children,
> (b) training for parents regarding how to be the primary teacher for their children and full partners in the education of their children,
> (c) parent literacy training that leads to economic self-sufficiency, and
> (d) an age-appropriate education to prepare children for success in school and life experiences (National Center for Family Literacy, quoted in Mackey & Pitcher 2007, 82).

There is ample research to support the value of family literacy programs and activities (e.g., Taylor 1998; Mulhern, Rodriguez-Brown, & Shanahan 1994). "The bottom line is that families offer unique and valuable contributions to the school community; therefore, every opportunity to involve families in literacy opportunities must be considered" (Mackey & Pitcher 2007, 82). Teacher-librarians are strategically positioned to be leaders in family literacy efforts. In assuming this role, they must consider the following elements of successful programs (Griffis 2003):

- Build on literacy experiences already present in the home
- Develop instruction for children and parents that might include reading, writing, and technology skills and activities
- Provide access to information and resources that will help families become self-sufficient
- Collaborate with community partners to expand both the resources available and the range of instruction

Figure 4 describes how a teacher-librarian serves as a catalyst, caregiver, and connector, who empowers families to read and learn together.

Figure 4: Example of Teacher-Librarian's Role in Family Literacy Activities

Ramon is the teacher-librarian at High Mesa Elementary. He works closely with the faculty, administrators, and community members to gather information about the students and their home life so that he might establish programs that meet their needs. He also works closely with the Parent-Community Coordinator at his school, a volunteer that works on home-school programs and activities. They collaborate on the following activities for the upcoming school year:

- *Reading night:* Families read several books from a recommended reading list to prepare for the event. They are invited to a school pizza dinner where they can informally share their views and personal experiences based on the stories they have read. By participating, families practice new skills in reading with their children.
- *Computer night:* This intergenerational activity encourages parents to learn from their children. The youngsters teach their parents the use of various software applications and Internet navigation. Ramon also invites the neighborhood public librarian to teach parents and students how to access the public library's online access catalog.
- *Author night:* A local author is invited to read to the families and share personal experiences that inspired his or her writing. This session includes follow-up activities, e.g., a small group interaction with the author, games to win copies of the author's book, and a literature circle where the families discuss the book.

[Note: Ideas for this example come from "Family Literacy: The Dynamic Roles School Librarians Can Play," by B. Mackey & S. Pitcher. In *School Reform and the School Library Media Specialist,* edited by S. Hughes-Hassell & V. H. Harada, Libraries Unlimited, 2007.]

Example of Teacher-Librarian's Role in Family Literacy Activities

ADDRESSING DIVERSITY

Over five million students attending today's public schools are not native English speakers; in fact, they speak over 460 different languages from cultures around the world (McElroy 2005). According to Agosto and Hughes-Hassell (2007), this substantial increase in English-language learners (ELL) means that "school library media specialists and teachers at all levels of the education system...must devote increased time and resources to supporting education for students with limited English skills" (145).

It is critical to know that a student's linguistic background impacts "educators' assessments of student skills [and] student comprehension of information resources" (Agosto & Hughes-Hassell 2007, 148). Just as limited English-language proficiency affects student learning, the students' cultural rearing influence how and what they learn. The following strategies help educators to leverage rather than limit what students bring from their diverse family environments (Agosto & Hughes-Hassell 2007):

- Promote the use of multicultural and bilingual resources across the curriculum
- Help ELL students make personal connections to library resources representing unfamiliar cultures
- Establish and maintain ties with information resources and services in the community that meet the needs of ELL students

Figure 5 provides an example of how a teacher-librarian works as a connector, caregiver, and coach to make the library media center a welcoming and supportive place for all students.

Figure 5 Example of Teacher-Librarian's Role in Addressing Cultural Diversity
FIGURE 5

Blue Plains High School has a culturally diverse student population: 60% of the students are Latino, 20% are African Americans, and the remaining 20% are Asian and Caucasian Americans. This is the first year at the school for Sharon, the teacher-librarian. She notes that the library media center's resources do not adequately reflect the rich cultural diversity of the student body. Her thoughts are confirmed when she conducts an informal survey of the students regarding what they would like to see in the library collection.

She puts together an expansion plan for a culturally responsive collection that includes not only multicultural books, but a wide range of materials including newspapers form the students' countries of birth, bilingual materials, videos, and music. In creating this plan, she collaborates with an ad hoc team comprised of teachers, students, and community members. Sharon presents her plan to the faculty, administrators, and school-community council. Everyone is impressed and supportive of her plan. The principal gives her $10,000 as seed money. The parent association contributes another $3,000. In addition, Sharon receives a $20,000 grant from a local private foundation that supports multicultural initiatives. Along with the print and multimedia collections, Sharon also builds a digital library that includes links to Web resources that are culturally relevant. For this activity, she enlists a cadre of students, who help her identify and evaluate Web sites that might be added to the school's digital network.

Sharon also maps out a series of activities to raise everyone's awareness about the value of cultural diversity, e.g., lunch hour literature circles with the students, a family night to involve parents and siblings, and collaborative units of study with teachers on culturally-related issues and themes.

[Note: Ideas for this example come from "Language, Culture, and the School Library," by D. E. Agosto & S. Hughes-Hassell. In *School Reform and the School Library Media Specialist,* edited by S. Hughes-Hassell & V. H. Harada, Libraries Unlimited, 2007.]

Example of Teacher-Librarian's Role in Addressing Cultural Diversity

CONCLUDING THOUGHTS

Today's climate of reform demands that teacher-librarians become advocates for students and teachers. Being an advocate means becoming a change agent and actively and thoughtfully entering the educational conversation. It means having the language and knowledge to move beyond the library media center into the wider school community. It requires familiarity with current research on teaching and learning to effectively facilitate the change process. It means carefully listening with an open mind and being responsive to teacher's concerns and questions. It means knowing how and when to communicate and whom to seek out for support. It means learning new skills to achieve the school's vision. Finally, it means being proactive and positive. While educational change is a journey often filled with uncertainty and conflict, it is also an immensely rewarding one for students and all adult stakeholders. It is a journey worth leading.

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Amount Counts:
Placing Quality Books into the Hands of Children

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In August of 2006, Dr. David Loertscher presented a full day training session for our district librarians. During the course of the day he mentioned a reading initiative that had taken place in another school to encourage a habit of daily reading, and place quality books into children's hands. He coined the phrase "Amount Counts" as an important factor in creating competent, lifelong readers.

From that statement, an idea was born and four librarians from four diverse elementary schools implemented a daily at-home reading program.

Students from Kindergarten, 1st and 2nd grade were represented in this pilot program. Each student took home a bag with 2 books each day of the week. One of the books was an appropriate reading level for the child to read to the parent, and the 2nd book was a quality, high-interest picture book for the parent to read to the child.
Included in the book bag was a folder with reading tips for the parent, as well as suggested questions and discussion stems, a parent survey, and a reading response log for each book.

The children returned and exchanged book bags daily. They were able to participate in the selection of the books placed in the bags, and looked forward to the different books in each new bag they took home. The duration of the program was from October through April. Books were selected from the regular library collection.

Post program surveys were very positive and supportive from all parties involved; classroom teachers, parents and the students. The collaborative endeavor fostered strong relationships between the parent, classroom teacher, librarian and reading specialist. There was no direct research to support reading gains that were higher than classrooms that did not participate.

Challenge: The children were given what is called a TPRI Reading Score at the beginning of the year, middle of the year and end of the year. We attempted to compare growth using the classes who participated in the program with classes that did not. We saw similar gains in reading in ALL classes. We then tried to look at how many reading levels the child may have increased during the course of the program and found it hard to compare as the children were tested at different reading levels using different stories. The fluency scores showed increases at each testing. Our Reading Specialist did not have any answers for us either. The challenge is to document evidence properly with the help (hopefully) of professional researchers.

The librarians involved with this program will be presenting a session on Saturday during the AASL conference.

Developing Critical Literacy: A Priority for the 21st Century

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Why is critical literacy important?

I was recently working with a class of 11-12 year olds on a history project about the Second World War. Among various investigations that we pursued, one group was set the task of gathering information about the Holocaust. As well as collecting suitable books from the class and school libraries, they also spent some time on the Internet-connected computer in the school library. The texts they brought back included the following three paragraphs of a much longer document:

> **A short introduction to the study of Holocaust revisionism**
> Arthur R. Butz
>
> [Originally published in the *Daily Northwestern* of May 13, 1991, corrected May 14; source: http://pubweb.acns.nwu.edu/~abutz/di/intro.html]
>
> I see three principal reasons for the widespread but erroneous belief in the legend of millions of Jews killed by the Germans during World War II: US and British troops found horrible piles of corpses in the west German camps they captured in 1945 (e.g. Dachau and Belsen), there are no longer large communities of Jews in Poland, and historians generally support the legend.
>
> During both world wars Germany was forced to fight typhus, carried by lice in the constant traffic with the east. That is why all accounts of entry into the German concentration camps speak of shaving of hair and showering and other delousing procedures, such as treatment of quarters with the pesticide Zyklon. That was also the main reason for a high death rate in the camps, and the crematoria that existed in all.
>
> When Germany collapsed in chaos then of course all such defenses ceased, and typhus and other diseases became rampant in the camps, which quartered mainly political prisoners, ordinary criminals, homosexuals, conscientious objectors, and Jews conscripted for labor. Hence the horrible scenes, which however had nothing to do with "extermination" or any deliberate policy. Moreover the west German camps involved were not the alleged "extermination camps", which were all in Poland (e.g. Auschwitz and Treblinka) and which were all evacuated or shut down before capture by the Soviets, who found no such scenes.

This text was simply added to the collection, from which members of the class later worked on extracting and summarising information. It was not until I sat with the group and we did a careful shared reading of this text that they noticed it was radically at odds with the other texts they had collected on this subject.

I should point out that this group were all operating at average or above average levels in their literacy. They were all very able to discuss texts in terms of structural features, to explain different uses of connective words and phrases within texts, to talk knowledgeably about tense, active and passive sentences, and vocabulary choice. But this ability had only taken them so far. When faced with texts like this, they needed to be able to ask critical questions such as: 'What is the evidence for the claims this text makes?'; 'What is the author trying to convince me of?'; 'How do I know whether to believe this or not?'.

Asking questions such as these involves the operation of critical literacy. We are all – adults and children alike – constantly bombarded with text which tries, sometimes blatantly and sometimes extraordinarily subtly, to persuade us to a certain viewpoint or action. Fully literate people are aware of such persuasion and know how, or whether, to resist it. Critical literacy is a crucial skill for surviving in the information-dense twenty first century.

What is critical literacy?

Of course, critical literacy is not an entirely new concept. Rather like a chameleon, it changes from context to context and is known in different parts of the world by terms such as critical language awareness, critical social literacy, critically-aware literacy. Nevertheless, some common threads run through the different approaches and serve a useful starting point for discussion.

Firstly, critical literacy rests on an assumption that language education can make a difference in children's lives. Being literate in a 'basic' sense is not enough. Teachers who value critical literacy will thus tend to have a stake in social change and will encourage their pupils to investigate, question and even challenge relationships between language and social practices that advantage some social groups over others.

Secondly, critical literacy approaches assume that the meanings of words and texts (which can be verbal, digital, printed, moving or pictorial) cannot be separated from the cultural and social practices in which - and by which - they are constructed. The way that we use language to read, write, view, speak and listen is never neutral or value-free. Even activities as seemingly benign as reading a picture book to young children are culturally and politically complex. We select texts we deem to be appropriate, which then become naturalised as 'the way things are, or ought to be', potentially excluding children who belong to and identify with different cultures.

Thirdly, critical literacy is about analysis and evaluation. Ira Shor (1992), for example, offers the following definition:

> analytic habits of thinking, reading, writing, speaking, or discussing which go beneath surface impressions, traditional myths, mere opinions, and routine clichés; understanding the social contexts and consequences of any subject matter; discovering the deep meaning of any event, text, technique, process, object, statement, image, or situation; applying that meaning to your own context.

Fourthly, notions of social awareness and active citizenship run through most of the writing about critical literacy. Chris Searle (1998), for example, discusses developing what he calls 'imaginative empathy'. He uses a range of texts to encourage pupils to imagine themselves in the lives of others and to write poetry and prose from these different viewpoints. The outcomes include books of professionally produced poetry which challenge the racial and class tensions

that characterise their schools and communities. Seen this way, critical literacy is about transforming taken-for-granted social and language practices or assumptions for the good of as many people as possible.

There are a number of approaches and strategies which can be used to develop critical literacy with primary and secondary pupils, including textual analysis, text clustering, the use of texts for social action and critical writing.

Textual analysis

Here is an extract from *History can be fun* by Munro Leaf, a book I found on the library shelf of a Warwickshire primary school. First published in 1950 (in the US), the 1976 British edition is very attractively illustrated and appealingly presented.

> ... now that you've read this far you'll know what generally happened as soon as a new country was discovered. Two things, first, other nations came along and tried to get a share, second, the native people, like the Indians and 'red' Indians, found themselves being ruled by white men. With Australia and New Zealand things were better. No other European nation tried to take them, and in Australia there were only a very few black people so that colonists did not have to lead armies against them. In New Zealand there were splendid native people called Maoris and they fought against the British at first. But now the Maoris and the settlers who have come from Britain live peacefully side by side and there are Maori members of the New Zealand Parliament.

Passages like this are not uncommon in school history books, especially those written before the 1970s, and can be a useful source of textual analysis practice for primary pupils.

Key points in this text to draw to pupils' attention are:

- The suggestion that countries were unknown before Europeans set foot there: "... as soon as a *new country* was *discovered* ...".
- The way the text provides the opinions or viewpoint of one group only: "With Australia and New Zealand *things were better*." Better for whom?
- The way it minimises the damage and distress caused by colonisation to indigenous peoples: "...the Indians and 'red' Indians *found themselves being ruled* by white men." "But now the Maoris and the settlers... *live peacefully side by side*..."

This sort of textual analysis can be guided by asking the pupils to make their way systematically through a list of questions such as the following:

- What is the subject or topic of this text?
- Why might the author have written it?
- Who is it written for? How do you know?
- What values does the author assume the reader holds? How do you know?
- What knowledge does the reader need to bring to the text in order to understand it?
- Who would feel 'left out' in this text and why? Who would feel that the claims made in the text clash with their own values, beliefs or experiences?

- How is the reader 'positioned' in relation to the author (e.g. as a friend, as an opponent, as someone who needs to be persuaded, as invisible, as someone who agrees with the author's views)?

Another approach to analysing texts is to use a checklist such as CARS (Credibility, Accuracy, Reasonableness, Support), which was originally developed for use in evaluating web sites. In learning to apply the CARS criteria, pupils will significantly sharpen their critical faculties when engaging with textual information.

Credibility

Evidence of authenticity and reliability is very important. If we read a newspaper article saying that the area where we live will experience major flooding in the next few weeks, we need to know whether or not to believe the information. Some questions to ask would include: what makes this text believable (or not)? And how does the author know this information?

Tests that help the reader judge the credibility of a text include:

- *The author's credentials:* look for biographical details on their education, training, and/or experience in an area relevant to the information. Do they provide contact information (email or postal address, phone number)? What do you know about the author's reputation or previous publications?
- *Quality control*: information texts should pass through a review process, where several readers examine and approve the content before it is published. Statements issued in the name of an organisation have almost always been seen and approved by several people.

By the same token, you can sometimes tell by the tone, style, or competence of the writing whether or not the information is suspect. Anonymity, bad grammar or misspelled words suggest carelessness or ignorance, neither of which puts the writer in a favourable light.

Accuracy

Information needs to be up to date, factual, detailed, exact, and comprehensive. For example, even though a very credible writer said something that was correct twenty years ago, it may not be correct today. Similarly, a reputable text might be giving up-to-date but incomplete information. Things to bear in mind when judging accuracy include:

- *Timeliness.* Some texts, like classic novels and stories, are timeless; others, like texts about computers, have a limited useful life because of rapid advances in knowledge. We must therefore be careful to note when information was created, before deciding whether it is still of value.
- *Comprehensiveness.* It is not always possible to give a comprehensive picture: nobody can read every single thing on a subject. It is always a good idea to consult more than one text.

Indicators that a text is inaccurate, either in whole or in part include the absence of a date or an old date on information known to change rapidly; vague or sweeping generalisations; and the failure to acknowledge opposing views.

Reasonableness

Reasonableness involves examining the information for fairness, objectivity and moderateness.

- *Fairness* requires the writer to offer a balanced argument, and to consider claims made by people with opposing views. A good information text will have a calm, reasoned tone, arguing or presenting material thoughtfully.
- Like comprehensiveness, *objectivity* is difficult to achieve. Good writers, however, try to minimize bias.
- *Moderateness*. If a text makes a claim that is surprising or hard to believe, the reader needs more evidence than might be required for a lesser claim. Is the information believable? Does it make sense?

Some clues to a lack of reasonableness are: intemperate language ("these stupid people", "those who believe differently are obviously deranged"); exaggerated claims ("Thousands of children are murdered every day in the United Kingdom"); sweeping statements ("This is the most important idea ever suggested!"); and conflicts of interest ("Welcome to the United Tobacco Company Home Page. To read our report, 'Cigarettes Make You Live Longer', click here").

Support

Support for the writer's argument from other sources strengthens their credibility. It can take various forms:

- *Bibliography and references*. What texts did the author use? Are these listed? It is especially important for figures to be documented. Otherwise, the author might just be making up the numbers.
- *Corroboration*. It is a good idea to triangulate information, that is to find at least three texts that agree. If other texts do not agree, further research into the range of opinion or disagreement is needed. Readers should be careful when statistics are presented without identifying the source or when they cannot find any other texts that present or acknowledge the same information.

Text clustering

Text clustering involves confronting pupils with texts which obviously contradict each other. The task is to use whatever evidence they can find to try to make judgements about where the truth actually lies. Sometimes these judgements are relatively easy. Some 9-10 year olds, for instance, were recently investigating the planets and found the following conflicting information about Saturn.

> *1. **Four new moons found circling Saturn***
> *By BBC News Online science editor Dr David Whitehouse*

Saturn has become the planet with the greatest number of known moons, 22, following the discovery of four new satellites around it.
The four, faint bodies were detected during the past few months by several telescopes around the world. Further studies in the next few months will establish the satellites' precise orbits around the ringed planet.
(http://news.bbc.co.uk/1/hi/sci/tech/992494.stm) (page dated Thursday, 26 October, 2000)

2. New moons discovered around Saturn
Astronomers have discovered 12 new moons around Saturn, bringing the planet's tally to 30 - the largest satellite family in the Solar System.
The new moons are small, measuring between six and 30 kilometres in diameter, and move in irregular, tilted orbits.

They fall into several clusters, leading scientists to conclude that they are the remnants of larger moons fragmented by collisions. The moons probably began life as wandering bodies that were captured by Saturn's gravity.
French astronomer Brett Gladman, from the Observatoire de la Cote d'Azur, and colleagues found the moons by scanning Saturn with sophisticated electronic detectors mounted on Earth-based telescopes.

Their findings were reported today in the journal Nature.
(http://www.ananova.com/news/story/sm_349369.html) (page dated Wednesday, 11 July, 2001)

The children were puzzled about how many moons Saturn actually has, and how to reconcile this conflicting information about when these moons were discovered. Further investigation revealed a third text.

3. Satellites orbiting Saturn (date discovered in brackets)
Pan (1990); Atlas (1980); Prometheus (1980); Janus (1966); Enceladus (1789); Tethys (1684); Telesto (1980); Pandora (1980); Epimetheus (1966); Mimas (1789); Calypso (1980); Dione (1684); Helene (1980); Rhea (1672); Titan (1655); Hyperion (1848); Iapetus (1671); Phoebe (1898).
(http://www.sciencenet.org.uk/database/phys/astronomy/solarsystem/Jupiter/p00958b.html) (undated page)

The pupils' conclusion (with teacher help) was that the number of moons thought to orbit Saturn depended upon the date that the moons had been discovered. Therefore, it was important to pay particular attention when the text had been written.

Other sources of material for text clustering activities include newspaper reports, everyday texts and fairy stories.

Newspaper reports

Collect reports of a current event from four or five newspapers, making sure you include a range of tabloids and broadsheets. Use extracts for shared reading. As you read, demonstrate to the class the kinds of questions you might ask yourself to judge the credibility and accuracy of each

report. Ask groups of pupils to compare pairs of reports and to list the questions they have about items which might seem to conflict. Bring the class together to discuss what they have found. Draw their attention to (among other things):

- *Selective quotes*. Newspaper reporters will all get their original information from the same speech by a person involved in the event, or the same press release. Why do they often use quotes slightly differently or not at all?
- *Descriptors*. Look at the use of adjectives and adverbs in reports. What impression does the newspaper want to create and why?
- *Order*. Newspaper editors know that the average reader only ever reads the first couple of paragraphs of any report. What information do they choose to go in these first paragraphs, and which is left until later? Why might they plan things in this way?

Everyday texts

Ask pupils to collect examples of advertisement, brochures and leaflets for the purpose of comparison. Get the pupils to look carefully at how different texts which, on the face of it, are doing similar jobs, are written and structured differently.

As an example of this kind of activity, look at the 3 texts given below, each of which was found in a hotel bathroom.

1. Help Us to Help Our Environment

Environmental care is often a matter of taking little steps which reduce the demands on the earth's natural resources. Help us to do this by kindly considering using the bathroom towels a second time.

Place your towels on the towel rail to USE, THEM AGAIN
Place your towels in the bath or shower to CHANGE THEM.

2. In the interests of the environment

Imagine just how many towels are unnecessarily washed each day in all the hotels throughout the world. The truckloads of washing powder used, the reservoirs of water needed and the energy consumed to wash and dry them.

TOWELS PLACED IN THE BATH/SHOWER MEANS PLEASE EXCHANGE
TOWELS REPLACED ON THE TOWEL RAIL MEANS I WILL USE AGAIN

Thank you for your co-operation

3. Help us to help our environment

In an effort to exercise the dual responsibility to both you and to the environment Menzies Hotels has introduced a fully ecological bathroom policy.

TOILETRIES
The "Press and Wash System" installed in your bathroom provides products of the highest quality. All products are dermatologically tested, kind to the skin, packaged in recyclable, biodegradable plastic and are not tested on animals.

TOWELLING
To help us reduce the use of laundry chemicals and save precious energy, placing used towels on the bathroom floor will indicate that you wish to be provided with clean linen. Used towels placed on the rack will not be changed.

Questions to ask about these texts include:

- Two of the texts talk about 'our environment', and one says 'the environment'. What difference does this make to the way the reader responds?
- Two texts ask for the reader's help: 'Help us to help our environment'. One text simply tells us what to do. Again, what effect does this have on the reader?
- Notice the use of 'by kindly considering using these bathroom towels a second time' in the first text. This is a very gentle way of asking readers to do something. Compare it with the more direct language of the other two texts.
- Why does the third text only mention towels *after* it has told the reader what the hotel has done to help the environment?
- Notice that none of these notices mentions the fact that the less washing the hotel has to do, the smaller its laundry bill will be.

Fairy stories

Younger children will enjoy comparing different versions of well known fairy stories and discussing how these make them feel. One class of 6 year olds were read a version of the story (taken from Andrew Lang's *Blue Fairy Book*, first published in 1899) which ends with both Red Riding Hood and the grandmother being eaten by the wolf. This caused great discussion as the children compared other versions that they knew. One little boy spent a good ten minutes trying to find what he insisted must be a page missing from the story (the bit where the woodcutter comes to rescue Red Riding Hood) and was only persuaded that there was no missing page by looking at the page numbers in the book. Such an activity is a good example of critical literacy as it focuses children's minds on the fact that stories are constructed, from a number of possible alternatives, by an author.

Texts for social action

The importance of authentic literacy experiences for children's literacy development is well established. When pupils are given opportunities to engage in purposeful and 'urgent' reading and writing, they begin to see the point of learning and practicing the skills of literacy. Yet it has always been extremely difficult to provide many pupils with experiences of this kind. For example, the accepted wisdom is that providing pupils with real audiences will improve their writing skills. Yet even when they are told that the audience is elsewhere, they usually know that the writing will in fact be read and judged only by their teacher.

If we wish our pupils to experience the power of literacy to influence people, then we need at some point to allow them the time and opportunity to use literacy in a socially active way. A good example are the letters sent to many people, including local councillors and the Prime Minister, by children in North Devon following a serious traffic accident outside the school.

Critical writing

Learning to write effectively teaches children to read more effectively. It is thus possible to argue that one of the most important teaching strategies for developing critical reading is to teach persuasive writing explicitly. How can this be done? One approach involves:

1. Providing models of writing and focusing pupils' attention on how these work
2. Demonstrating writing processes
3. Participating in writing tasks alongside pupils
4. Scaffolding pupils in producing writing.

These steps can be summarised in the acronym IDES: Immersion, Deconstruction, Exemplification, Scaffolding.

Immersion

Just as immersion in spoken language is a crucial factor when babies learn to talk, so pupils learning to write persuasively need to be immersed in examples of persuasive writing. We have always tended to surround pupils with texts we perceive to be neutral, simply giving them information rather than trying to persuade them to a particular point of view. There are good reasons for this, of course. Teachers do not want to be accused of trying to influence children through the texts they use, and persuasive texts, by their very nature, can be controversial. However, unless pupils are confronted regularly with such persuasive, and controversial, texts and, **crucially**, taught to examine these texts critically, they will find it more difficult to resist the texts they regularly encounter outside the classroom.

Deconstruction

Of course, pupils do not learn how persuasive texts work and how to resist them simply through exposure. They also need to deconstruct these texts: that is, to explore how they are structured, how their style and choice of words make them persuasive. Shared reading is a very useful tool. By closely examining a text together, a great many textual tricks and techniques can be learnt.

Exemplification

Exemplification simply means that the teacher demonstrates how to write persuasive texts and is the essence of shared writing. Remember that the point of shared writing is not so much the pupils *watching* the teacher write, but *hearing* the teacher think aloud as he/she explains the processes involved in the composition. Shared writing has four major purposes:

1. It models for children how writers think, making visible the otherwise hidden mental processes that make up writing.
2. It provides a demonstration of how to compose, a process that can seem very mysterious to novice writers.
3. It provides an active demonstration of the full writing process, including:
   - selecting or clarifying the writing task

- collecting and connecting information
- gathering ideas and researching
- planning
- transcribing, reading and revising
- doing final editing and proof reading
- getting feedback on what has been written

4. It shows that writing needs to be purposeful and written with readers in mind.

Scaffolding

Shared writing should lead to pupils writing independently using similar knowledge and skills to those demonstrated by the teacher. But the jump from teacher demonstration to pupil independence is not usually a rapid or simple one. Especially in writing, learners need support as they begin to work independently, in our case on producing persuasive writing. Such support can take a number of forms.

In *collaborative writing*, where pupils work together, either with or without a teacher, to compose a piece of persuasive writing, hesitant writers are offered a context for extending their skills. Support comes from other writers who may or may not be more expert at the particular writing task.

In *supported writing,* pupils write following a prompt such as a writing frame (Wray & Lewis, 1997) which guides pupils in the structure of a text, and the use of key connective phrases.

Conclusion

The main aims of this article have been to suggest that critical literacy is a vital element to teach to pupils in the 21st century, and that there are some practical ways in which this teaching might be achieved.

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Participants' Perceptions of the Impact of the Wonder of Reading Program

Marilyn Robertson

Abstract

By spring 2003, the Wonder of Reading, a nonprofit organization, had partnered with one hundred Los Angeles area elementary schools to implement their 3R Program: Renovate, Restock, and Read. The study examined the impact of the Wonder of Reading program in selected schools as perceived by administrators, teachers, library staff, and parents. Further, the study examined variations in perception by role and by school characteristics. Participants perceived that the project led to a cascade of changes in practices, policies, and attitudes impacting student access to print, engagement in reading, and student achievement.

Background and Purpose

The Wonder of Reading

The Wonder of Reading is a nonprofit organization of people whose stated purpose is to "inspire in children the love of reading." Since 1995, the organization has partnered with schools in the Los Angeles Unified School District to provide matching funds to implement a 3R program—Renovate, Restock. and Read (3R). The organization provides funding to double the size of elementary school libraries to approximately 1,700 square feet; installs new shelving, story stairs, carpeting and other facility enhancements; provides $10,000 for the purchase of new books; and works with the school to train and place adult volunteer reading partners to work one-on-one with students. By spring, 2003, the organization had renovated one hundred school libraries.

As of December, 2006, 172 school libraries have benefited from this partnership, 157 in the Los Angeles Unified School District, more than one-third of the schools.

Purpose

The purpose of the study was to assess the impact of the Wonder of Reading program. In a larger sense, it was to investigate the impact of improving elementary libraries in urban schools.

Research Questions

The research investigated the impact of the Wonder of Reading program in selected schools in Los Angeles as perceived by administrators, teachers, library staff, and parents. The study also compared variations in perception by role and by school characteristics.

The theoretical framework for the study centered on research related to print access, time spent reading, motivation, and school library research showing the positive role of school libraries in improving student achievement.

There is a growing body of evidence that children living in poverty have markedly limited access to print materials of all kinds in relation to their more affluent peers (Duke, 2000; Guice et al., 1996; McQuillan et al., 1997; Neuman and Celano, 2001; Smith, Constantino, and Krashen, 1997). On the other hand, there is evidence that where students are flooded with age-appropriate, appealing books and given opportunities to engage meaningfully with them at school and at home, positive changes can be seen in students' concepts of and engagement with print, listening comprehension, and motivation to read (Elley and Mangubhai, 1983; Krashen, 1993; Koskinen et al., 2000; Neuman, 1999).

Time spent reading and engagement in reading is an important predictor of reading success (Anderson, Wilson, and Fielding, 1988; Cullinan, 2000; Greaney and Hegarty, 1987; Kirsch et al., 2002; Krashen, 1993; McQuillan, 1998; Taylor, Frye, and Maruyama, 1990, Morrow and Weinstein, 1986; Romatowski and Trepanier-Street, 1993).
Reading motivation has been the focus of inquiry by Gambrell (1996), Worthy (1996), and Turner (1995). Gambrell found that access to books in the classroom, opportunities for self-selection, familiarity with books, and conversations about reading, particularly with adults who were engaged readers, supported the development of intrinsic motivation. She concluded that motivation and engagement with print are enhanced where there is planning time for staff, reading choices for students, opportunities to read for enjoyment, and funding for increased access to high-interest material. Krashen (1993) concurred, noting that "light reading is a hook that may be the way that nearly all of us learned to become avid readers" (47).

Increasingly, studies suggest that school library programs have a positive impact on student achievement (Baughman, 2000; Gaver, 1963; Lance, Hamilton-Pennell, and Rodney, 1999; Lance, Rodney, and Hamilton-Pennell, 2000; Lance, Rodney and Hamilton-Pennell, 2002; Lance, Welborn, and Hamilton-Pennell, 1993; Smith, 2001). Studies in states around the United States have validated Lance, Hamilton-Pennell, and Rodney's (1993) that found higher test scores in those schools with higher funding for school libraries and in schools where library media specialists took an active role in instruction.

Method

Fifteen schools were chosen for the study, three in each of five geographic areas of Los Angeles. Schools were eligible if their new Wonder of Reading library had been open for at least one year and had at least one administrator who was involved when the school applied for Wonder of Reading funding.

Six volunteer participants, involved before and after the new library opened, were recruited at each school—the administrator, two teachers, two parents, and the library staff member. Eighty-one out of a possible ninety participants completed a thirty-item survey. Eighty-six of the ninety participated in a brief interview. These procedures gathered perceptions about the overall impact of the program and changes in nine specific domains, including the facility, student access to print, motivation, and library use.

Data from the California Department of Education and local district library annual reports were also gathered to identify and compare school characteristics, such as enrollment, number of low-income students, number of books and books per student. Academic Performance Index (API) scores for these schools were also compared from the inception of this composite of testing results in California from 1999 to 2002.

Responses to each question before and after the Wonder of Reading program were tallied by participants' roles and put into tables showing raw totals and total percentages as well as percentages of responses by role. Responses before and after ranged over five choices, from strongly disagree, to disagree, to neutral, to agree, and strongly agree.

Typed notes from interviews were grouped by role so that responses could be seen together. Responses describing the overall impact were followed by perceptions about specific changes in nine areas related to the facility, student access to print, motivation, and library use. Recurring themes were highlighted and listed to gather data about patterns of response by role and by school characteristics.

Findings

School Characteristics

Schools sampled were taken from five geographic areas of the city. All were elementary schools with students in grades kindergarten through five. Three were magnet schools on traditional nine-month calendars; six had enrollments of more than one thousand students on year-round calendars, and six were on traditional September-June calendars.

The largest ethnic group of students served was Hispanic American; three of the schools served predominantly African Americans; two were majority Caucasian; and one school had a majority Asian American population (table 1).

Thirteen out of fifteen schools (87 percent) served students where more than 50 percent qualified for free or reduced lunches, an indicator that a majority of the students were from low-income families (table 2).

Table 3 shows that all fifteen schools had fewer than nine books per student. By spring 2002, nine out of fifteen schools had nine or more books per student. Eight out of the fifteen schools increased their number of library books by more than 100 percent; four of these increased by more than 200 percent and one increased by more than 300 percent. The average number of books in these fifteen school libraries in 1999 was 4,249. By 2002, the average number was 8,574, an average 102 percent increase.

Increases in the number of books came from the Wonder of Reading's $10,000 for books. Increased state funding from the California Public School Library Act of 1998 gave Los Angeles schools $20 per pupil for books and library technology, the effects of which began to show beginning in 1999. In other cases, schools chose to supplement this funding with other categorical monies to build library collections.

Table 4 shows high test scores for students in relatively more affluent schools from the start, suggesting a relationship between higher socio-economic status (SES) and achievement. Schools serving the lowest-income students improved an average of 165 points.

School Libraries before the Wonder of Reading

No participant in these interviews had much positive to say about their old library. Words such as "dark," "crowded," and "cramped" were used to describe them. One called it "a dungeon". Another called the old library "an appendage and a sick one at that." Many teachers interviewed reported that they stopped using the old library, saying it was not worth it. While other schools were not so disparaging about the old library, they still reported that the small size meant that students had little freedom of movement, that only one class could fit at one time, and that the place appeared disorganized and uninviting.

Staffing was limited to a paraprofessional or aide who worked in the library three hours per day until the spring previous top the study when these positions were expanded to six-hour-per-day for every school library. As one aide described it, three-hour positions allowed only for damage control. The book collections were out of date and in poor condition, lacking, as one teacher put it, curb appeal. "First impressions make a difference," one teacher stated, the implication being that the old library did not make a good one. Another teacher said that students were interested in the library before but there was nothing there for them.

Access was limited to weekly or biweekly class visits. Teachers brought students in, rushed them to get a book, and hurried them out. If a child forgot his previously checked-out book, he had to wait another two weeks, in some cases, to exchange it. The library was not open beyond the school day. Books, except in one instance, were not allowed to be taken home. Student motivation to read the old books was low.

Parents did not serve as volunteers in the library except, in one case, to help keep the library open longer in the absence of full-time staff. The library was not able to support student learning related to curriculum nor did it meet their recreational or personal interests or needs.

What impact, then, did participants perceive following the implementation of the Wonder of Reading program? Did perceptions vary by roles? Did they vary by school characteristics?

Overall Findings

"We have a library." In several schools, the former library had been virtually nonexistent in the eyes of users. The Wonder of Reading library, then, was a notable change. Participants spoke about how much students love to visit the library and, that if teachers forgot their library time, students would remind them. They spoke about the feeling of self-esteem, that people felt better about being at the school. They said the library was a source of pride. One called the library a foundation from which to enhance the overall learning program at the school, both in the library and beyond.

Principals, and often the assistant principals or program coordinators who worked with them, saw the library as a catalyst for turning the whole school around, changing school culture. Several in the study were termed "turn-around schools." In these schools, a new principal had engaged the whole school community in the application and fund-raising effort. The library improvement effort, then, took on added significance. The project became for some a symbol of accomplishment and of where the school was headed. In a more pragmatic comment, one principal mentioned that the library helped with teacher recruitment. He mentioned its importance in providing access for all in a community where there are few books in the homes.

Parents commented on the library facility's spaciousness and its welcoming atmosphere. They appreciated having so many new books and noted the excitement that their children expressed about using it. The first comment from one parent was, "Oh gosh, it makes us so proud." She called it the centerpiece of the school, special. Another said that they were excited about the plans for the new library but didn't know that the change would be so extensive. One called the library "A real Wow! Very different, more relaxed, comfortable, with spaces, books, and computers right here."

The library staff participants consisted of three library media teachers (LMTs) and twelve library aides. One LMT commented on the physical appearance of the library as "the most beautiful place in the school" in a area where beauty was not often seen. "It attracts people. People want to be in a beautiful place, a welcoming place for students and staff. It is a place that attracts." He commented that circulation had increased dramatically.

One LMT in a large, overcrowded, year-round school called the library a "haven." In another low-income school, the library aide described how she keeps the library open late for latchkey children and for homework tutoring, providing a nurturing place for them. Participants commented that the library atmosphere was more relaxed than that of the hectic classroom.

One library aide in a gifted magnet school commented that "there is a joy about books here." She pointed out that some of the students were reading on a high-school level, creating a broad spectrum of collection needs. She commented that at first students were just excited. Now she sees students selecting more quality books. This appeared partly due to the efforts of the library aide herself who was reading the books and actively recommending them to students.

This aide's parting comment was that she could stand on her head all day, and it would not make any difference. "It is the leadership here than makes the difference. It is because the principal has reading as her focus that we all do and so the kids do too." This principal's passion was confirmed in her statement: "At the center is the book. We don't do any froo-froo stuff. Reading is the point. We model it, talk about it, celebrate it. We want reading for the sake of reading. At the heart, you have to have access to books. The library alone won't do it. Kids need support." Another actively involved assistant principal noted about the new library, "It is central to everything we do here. I can't imagine a school not having a vital, functioning library. Everything we do here is about literacy. The library media center is the place where people go to make those connections."

Summary of Findings

Wonder of Reading libraries led to a cascade of changes impacting student and school community access and use. Changes in the school library appear to have expanded not only the facility but student access to print in both physical and affective dimensions. Changes in this segment of the school appeared to affect attitudes that, in turn, influenced practices. Hours expanded, a requirement in the application. Students could exchange books at any time during the day. In most schools, students could check out multiple books, a change from the one-student, one-book practice common in the school district. Books went home, another change for some schools. One principal noted that the loss rate was minimal because the school stressed responsibility, and the students had developed a respect for the library and the resources there. Thus, the study confirmed changes in student library use and investment in the program, a

liberalization of use policies, and a change in school culture regarding books, reading, and libraries.

Student access to print, opportunities that urban students may not otherwise have, was expanded in many ways:

- the number of books increased;
- the space to house the additional books increased;
- the space to house potential users increased;
- staffing and hours increased in many cases;
- policies allowing multiple books to go home became the norm;
- adults became available for modeling and guidance;
- the visual appeal of the space invited readers in;
- a warm, welcoming atmosphere encouraged them to stay;
- books and other resources offered "curb appeal", encouraging student use; and
- the space offered urban students quiet and comfort conducive to engaging in print.

Student use was expanded:

- book circulation increased;
- the space could accommodate overlapping uses by classes, small groups, and individuals;
- students were able to come on their own before, during, and after class;
- teachers made assignments because the resources for students were now there;
- students found resources for independent, self-selected reading;
- students in some schools were able to use technology in the library;
- students were involved in special literacy events; and
- where there was an LMT, students began to engage in research related to curricular themes.

Variations in Response by Role

In interviews, teachers expressed gratitude for simply having a functional library. They commented on the importance of "curb appeal" in enticing students to read. They described how well the new library complemented their work with children in the classroom, enabling them to make assignments previously withheld due to lack of resources.

Parents appreciated the beauty of the space. They observed that their children were excited about going to the library and were reading more. They appreciated having the resources right there at the school rather than having to purchase books or to take their children to the public library, which, in seven school communities, had been closed.

Comments by the library staff reflected their service orientation to students. The twelve library aides commented on the increased activity and the workload, which they gladly took on. The three library media teachers expressed some frustration due to pending funding cuts that were either threatening or eliminating their positions. They described their instructional collaborations with teachers initiated to engage students in reading and in research.

Administrators had the broadest view. Their philosophies were reflected in the attitudes and activities of the students and staff. One principal of a magnet school in an urban area noted the

importance of the library in setting a tone and providing the resources for academic learning. Another reflected that "the library saved me," recalling her own immigrant roots and the positive role that *The Boxcar Children* had on her as a young reader. Principals noted that the new library served as a symbol of how much the school cared for students and what the school community could accomplish together. One commented, and others implied, that the new library had changed school culture with regard to reading, making reading a desirable way to spend time.

Variation in Response by School Characteristics

Responses from schools with many low-income students, the majority, showed that parents saw the library as a source of empowerment for their children. The space was the most beautiful place in the school. Parents were grateful to have a safe learning place for their children. Safety was an important issue for these parents. They felt that the library kindled desire for learning in their children in a way not possible before. One parent whose comments were translated from Spanish said about the library's role, "It plays a very important role—fundamental for the education of children. If there were no library, how could you improve the reading abilities of children? It is critical to education."

In higher-income areas, parents were also grateful not to have to buy so many books for children whose interests were constantly changing. They pointed to the value of the library in convincing potential business partners to provide additional support. At one school, parents had tried to convince local businesses to contribute to the school with little success. After the opening of the Wonder of Reading library, the response turned to asking how they could help. Parents from relatively more affluent areas spoke of the library as a tool for marketing the value of public education to families considering private schools. Principals used the new library to recruit new teachers as well as to foster partnerships with community groups.

Student Achievement and Expenditures on the Library Program

The fifteen schools in this study all invested heavily in their school libraries. Each one raised from $25,000 to $40,000 in matching funds. Eight schools increased their book collections by more than 100 percent—four by more than 200 percent (see table 5). Three of the schools found funding from grants or from a combination of accounts to hire a full-time LMT in addition to the six-hour library aide. The schools in this study had only had their library aides for 6 hours per day for only one semester. One small school without special categorical funding still managed to hire a part-time teaching assistant with a master's degree in library science to work with their library aide. Another hired a second full-time library aide.

Did this investment in school libraries lead to improved student achievement? Fourteen out of fifteen schools raised their Academic Performance Index (API) test scores by more than one hundred points. Seven of these schools increased their number of books by more than 100 percent or hired a library media teacher along with the district-funded library aide.

The five schools with the fewest students qualifying for free lunch already had high baseline scores. One school where the API increase was modest also appeared to have made the smallest investment in the collection, increasing the number of books by 20 percent from 1999–2002. This school's use policies and practices had also not changed to the degree seen in other schools. For example, students could not come to the library on their own time.

Investment in the library and the concurrent changes in library use appeared to be reflected in API scores. Between 1999 and 2002, these schools' scores ranged from increases of 127 to191 points . It appears that, as studies by Lance, et al., suggest, investing in school libraries has a positive impact on student achievement (Lance, Welborn, & Hamilton-Pennell, 1993).

Conclusion

The findings of this study affirm findings in previous studies that providing plentiful access to interesting reading materials fosters engagement and increased time spent reading (Kirsch, et al., 2003; Krashen, 1993; McQuillan, 1998). This increased time may, in turn, make a difference to reading growth.

The results suggest that investment in the school library pays achievement dividends. (Baughman, 2000; Lance, Welborn, and Hamilton Pennell,1993; Lance, Hamilton-Pennell, and Rodney,1999; Lance, Rodney. and Hamilton-Pennell, 2000; Lance, Rodney, and Hamilton-Pennell, 2001). They show that access to print for low-income urban students is severely limited and that access through the school library can make an important difference to these young learners. The results further suggest that enlarging and restocking the school library may serve as the first in a cascade of changes that positively affect student engagement in reading.

Although the Wonder of Reading could not claim credit for all of the changes that occurred, the program appeared to be well timed, building upon a convergence of funding and attention to reading that may have made the changes brought about by the program even more effective. The findings suggest that offering students an enlarged and redesigned space with shelves well-stocked with new books can become a symbol that communicates every day to students how much the adults around them value them and their success as readers.

Next Steps

Ongoing funding for school libraries will be vital to continue to grow these programs and to encourage more schools to apply for the program. Once a critical mass of school libraries have been remodeled, it may appear unacceptable for any school in the district to continue to offer a library facility and collection that do not meet this standard. The most obvious need, however, is to hire library media teachers to, colloquially, put a cook in the kitchen. This funding will need to be from a stable, consistent source rather than from grant funding or other sources that terminate before the programs can mature.

Additional research is needed to gather more empirical data, such as comparing schools with similar characteristics, both with and without Wonder of Reading libraries. Case studies of student use before and after program implementation or between schools with and without the program could yield useful data. Exploring the impact of adding a library media teacher in these schools is clearly needed, as is the effects of adult volunteers working one-on-one with students.

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Tables

Table 1

Largest ethnic groups

Ethnicity	Number	%
Schools (n=15)		
Hispanics	9	60
African Americans	3	20
Caucasian	2	13
Asian	1	7
Total	15	100

Ethnically, the largest group, 60%, of students served were Hispanic. 3 of the schools were predominantly African American, two were majority Caucasian, and one school had a majority of Asian students. These may or may not be Asian Americans as these were children of resident foreign students attending a nearby school of higher education.

Table 2

Socio-Economic indicators

Students qualifying for Free/Reduced Lunch	Schools	%	Schools
Over 80%	9	60	A, B, C, E, F, G, I, L, M
50% -80%	3	20	J, K, O
Under 50%	3	20	D, H, N
Total	15	100	

13 out of 15 schools, 87%, served student populations with over 50% who qualified, an indicator that most of the schools, regardless of location across the district, served low-income students.

Table 3

Change in average number of books per pupil

Schools (n=15)		
Books per pupil	1999 or before	2002
9 or more per pupil	0	9
Less than 9 per pupil	15	6
Totals	15	15

Note. The district average was 9 books per pupil in spring 2002. 11.9 books per pupil were the reported state average in 2002. Year-round school figures reflect the number of books per pupils on campus.

8 out of 15 schools increased their number of library books by over 100%, 6 of these schools had 80% or more of students on free/reduced lunch, indicating a high-poverty area. 5 of these schools increased their number of books by over 200%. 1 of these 5, I, a school in a high poverty area with the lowest number of books in 2000, increased the collection by 383%.
Table 4

Comparison of % of Students With Free/Reduced Lunch and API Scores

	Schools (n=15)		
		1999	2002
%	No. Schools	Average API	Average API
55% or less	4	820	870
59-90%	8	502	622.5
Over 90%	3	445.3	610.33

A comparison of average API scores for the schools with less than 55% of students receiving free/reduced lunches from inception until 2002 shows very high scores from the start, reaffirming the link between high socio-economic status (SES) and achievement. The schools serving the lowest-income students improved an average of 165 points. Of the myriad of factors that may influence student achievement in these schools, effective use of a Wonder of Reading could be a variable worth considering.

Table 5
Ranked API Growth and Investment in School Libraries (Books and Staff)

School	API Growth 1999-2002	Number of Books Percentage of Increase
C	13	20
H*	26	50
N*	29	129
D*	65	28
K*	78	184
O*	86	60
A	127	31
B	127	108
I	129	383
M	140	42
J	156	24 + LMT
G	159	212
F	164	279 + LMT

L	166	212 +LMT
E	191	294

*Schools with baseline API scores already at 638 or higher and with 59% or less students receiving free lunches.

Fourteen out of fifteen schools either raised their API scores by over 100 points or already had very high baseline scores. Only one school, where the API increase was modest, also appeared to have made the smallest investment in the collection, increasing the number of books by only 20%. It appears that, as previous studies suggest, investing in school libraries has a positive impact on student achievement.

Epilogue

In the four years since this study, The Wonder of Reading has increased the number of schools in the program to 180, over one-third of the elementary schools in Los Angeles Unified. They expect to add 16 new schools per year. They have raised over $1.7 million for new books and reached more than 260,000 students and their families with this innovative 3R program. The schools have recruited and The Wonder of Reading has trained over 4600 volunteers to read one-on-one with at-risk students.

The Wonder of Reading offers continuing programs and opportunities to schools that have earned the initial 3R Program. Each fall, The Principals' Forum provides an opportunity for school leaders to hear a reading expert speaker and to meet with other principals and the program staff to inspire each other with new reading incentive ideas, volunteer recruitment strategies, and library improvement plans.

The organization also offers the *Visiting Author Program* and *Literacy Grants* to add library books to the collection in areas of need. *Library Skills Training* and *Parent Literacy Trainings* to empower school staff, library volunteers and parents to more effectively use the new library with students. The *Maintenance Program* grant provides funding each year to selected schools to ensure that library facilities stay fresh even after succeeding years of hard and active use by students.

The Wonder of Reading is committed to continuing the vital work they have started in public elementary schools. They also actively seek to offer their help to other communities as a model to engage in similar corporate, nonprofit, and public school collaborations to benefit students through improving school libraries to fulfill the mission, "to inspire in children a love of reading."

Digital Divides: Perspectives on Roadblocks to Technology Use in Schools

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As media specialists, we are often in the position of being the educational technology leaders. Despite the amount of professional development and discussion devoted to cultivating skills related to teaching and learning with new devices and applications, each of us has a story to tell about how technology could be implemented more effectively in our schools.

When examining schools' adoption and use, many studies have used in on the term "digital divide." Initially, the digital divide was framed in terms of access to technology hardware and connectivity, resulting in a number of policy initiatives in the 1990s to increase the numbers of computers in schools and connectivity to the Internet in classrooms [1]. These early efforts had a hardware-centric approach that differentiated between the computer "haves" and "have nots" primarily based on socioeconomic status, gender, and age. Statistics such as those provided by the National Center for Education Statistics (NCES) that state that 98% of U.S, schools are connected to the Internet [2] suggest that we have solved technology access problems, Yet, many teachers, students, and media specialists report infrequent use of technology during the school day.

The single level "digital divide" perspective has proven to be an incomplete model and guide to setting our expectations of having technology widely used in our schools. We would like to propose that we look at the other factors that influence technology use. It would appear that there are actually multiple and emergent digital divides impacting student skills and readiness for the future workplace [3].

Technology skills as a second-level digital divide

Access to technology in schools does not always result in use [4], nor does use always result in improved instructional practices or enhanced learning outcomes [5]. Addressing this first-level digital divide did not guarantee usage. As computer and Internet access increased in schools, yet gaps remained in use and impact, research and policy discussions shifted to a "second-level digital divide" that focuses on users' technological competencies and skills for both teachers and students [6].

For educators and students in schools, willingness to use technology is often related to their perceived personal competence using the technology. Attempts to bridge what are sometimes termed "information literacy" divides in schools have resulted in numerous professional development initiatives for in-service teachers as well as curricula for students [7]. Despite the attention paid to increasing educators' access to and skills with technology, little progress has been made with integration [8]. Likewise, many media specialists have observed that while students may be *confident* with technology, many of them are not *competent* with search, retrieval, analysis, and other skills relating to using technology to construct knowledge. One researcher described today's students as skill rich, but "information poor" [9].

As a consequence, the professional development opportunities and information literacy curricula continue to proliferate. These initiatives make only limited gains; educators and students maintain that they do not have access to the tools or applications that allow them to truly transform their practices in schools.

Third-level digital divide: Policy affects use

Prior research focusing on access to connectivity, equipment, and skills training does not go far enough toward addressing issues significant to sustainable implementation. Because most educational studies focus on individuals, whether students, teachers, or administrators, technology critiques often focus on the person in explaining usage gaps. In particular, as suggested by Cuban [10], such viewpoints have led to much finger-pointing at educators as the computer use "problem" leading to proposed solutions focused on fixing teachers (e.g., mandatory professional development, distribution of laptop computers) as solutions. Warschauer [11] states:

> Access to [technology] is embedded in a complex array of factors encompassing physical, digital, human, and social resources and relationships. Content and language, literacy and education, and community and institutional structures must all be taken into account if meaningful access to new technologies is to occur (n.p.)

Factors beyond personal access and knowledge or skill levels affect usage. Cuban [12] explained that classrooms and media centers do not operate in a vacuum. Classrooms and media centers function within the culture and history of an individual school, which, in turn, operates within the system of a district and within additional layers of local, state, and national governance.

When it comes to technology, existing school culture and externally imposed policy both encourage and restrain possibilities for teachers and students, reflecting the social and technical environment within which school technology functions [13]. For example, each district in Michigan must have a technology policy on file with the Michigan Department of Education, but these policies need never be revised or updated. Access establishes basic affordances for learning and teaching, individuals bring various attitudes and skills, but school culture frames values and expectations, and policy is the basis for technology's goals and intents. In this sense, school culture and policy form a third-level

digital divide in school environments. The implications of policy on use were specifically recognized in a Rand study on the adoption of new technologies:

> [L]aws and policies can create friendly or hostile environments that can promote or hinder technology implementation and exploitation. The passage of laws and enunciation of policies that explicitly promote or prohibit the use of a technology will significantly influence government, commercial, and individual decisions. [14]

As media specialists we often encounter many levels of policy that affect our technology environments. The school or district may have a permissions policy that does not allow individuals sufficient privileges to perform desktop maintenance. The district filtering policy may prohibit access to certain Web sites and applications like wikis and blogs. Or, the district may have a policy of computer replacement that is not in step with the speed of obsolescence. Often, these types of policies derail the use of new technology tools and skills.

Self-efficacy and motivation as a fourth-level digital divide

A final issue impacting the usage gap is related to motivation. Some critics have suggested that the idea of a uniform approach to the digital divide ignores issues related to differential beliefs, interests, needs, and desires to use technology [15]. While rarely linked to digital divide issues, differences in values and motivation are regularly cited as impacting whether teachers integrate technology in their classrooms. For example, several studies examining teacher uses of technology have noted that differences occur based on beliefs about impact on student learning [16], different attitudes related to disciplinary perspectives on teaching [17], and, in one recent study, fears of computers replacing teachers [18]. As one researcher noted, "the fact that an opportunity is available and that there are no overt barriers to taking advantage of it, is not the same thing as making that opportunity relevant and attractive to potential beneficiaries" [19].

The theoretical basis for this fourth level stems from two established theories from educational psychology. First, Maslow's Hierarchy [20] suggests that individuals are not in a position to embrace activities and innovations in an organization until more basic needs of security and physical and emotional health are met. This perspective applies to situation in schools in communities that face economic and social challenges. That is, technology use in learning should only be expected once the school environment is safe and healthy. The second theory, psychologist Bandura's expectancy theory [21], motivation is a function of belief in the value of the change times confidence in one's ability to make the change. If either of these two factors is zero, then the motivation to embrace the change is zero. In order for a technology to be implemented in schools, the members of the school community must believe that technology will improve teaching and learning and must have the skills required to use the technology. Indeed, some research has even demonstrated that belief in the technology's ability to affect positive change as well as the personal belief in the ability effectively operate the technology is the pivotal element of change and innovation [22].

These levels are neither sequential nor predictive; each school will exhibit various aspects of these divides. As we continue to enact roles as technology leaders, awareness of these different levels of divide can help us devise strategies and practices that anticipate myriad complications. Understanding why change is not occurring can often be key to making it happen. Setting appropriate expectations is the best place to begin to achieve and gauge success.

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The Components of Successful Technologies

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Books will soon be obsolete in schools.... Our school system will be completely changed in ten years. The quote above sounds like something a modern day futurist might posit. However, the quote referred not to computer technology, but to educational film. The luminary who made the statement was none other than Thomas Edison.[1] What would it take to truly transform education with technology? Do transformational technologies even really exist in education? Dating from the sixteenth century, futurists have viewed technology as changing education. Of course, in the sixteenth century, the advent of the printing press was going to make knowledge accessible at everyone's fingertips. Teachers were no longer going to have to be the font of knowledge, but be able to guide learners to the correct books. Where has that been heard recently?

Computer technologies and the Internet have changed nearly all aspects of society. We bank online or through computerized automatic teller machines. Optical scanning allows us to pass through tollbooths without slowing down to pay tolls. Our cell phones collect our e-mail and allow us to surf the web while waiting in the parking lot for soccer practice to be over. Nearly all universities offer some level of online coursework and in some cases; one can now obtain a university degree without ever setting foot on campus. So, why have the same strides not been made in K-12 education? Why have some schools not embraced technology? There don't appear to be any bankers thinking that the ATM is simply a fad or an unnecessary frill. Car dealers don't seem to be lagging in putting up web-based show rooms because Internet sales are a transient fad in their business. Why are some educators not embracing effective educational technology? Do they not know what technology should or could be doing for them? Which leads to the question, what should we be looking for in educational technology?

Early research into what makes for effective computer technology often focused on three issues: accessibility, professional development and reliability and support. The cannons mentioned the need to provide teachers access to computers in each classroom or workspace. For the most part that has been done in most schools. Most classrooms in the vast majority of schools have access to the Internet as well. Nearly all school library media centers have Internet access as one of their primary access points to information. However, technology hasn't transformed teaching and learning. Maybe it cannot. Computer advocates and critics have been arguing about the impact of technology on learning since the invention of the computer. What do we know that does allow technology to be both effective and transformational?

Transparency or ease of use is clearly one of the key components to technology being successful within an educational setting. It may be the most important single facet of effective technology. If it isn't easy enough for the average teacher to use, it cannot make

an impact. As I wander though exhibits at conferences or see various vendor presentations, I often ask or hear "but will teachers really have time to load this or that data or make this or that connection?" One developer tells his staff, "if your mother cannot figure it out, forget it." As an example, look at Google and the original Dialog service. Nearly anyone who can type can use Google to "find information." However, Dialog required several steps and often reference to a manual for occasional users. People didn't get many personal home subscriptions to Dialog. Lots of people are paying $240 or more a year for access to the Internet and, hence, Google. Computer technology has to be as simple as Edison's light bulb. (He did get some things right!) If it is more complicated than a light switch, it will not be as successful.

Technology must be ***engaging***. Any educational product that is going to be successful must be able to keep learners on task. Studies have shown if that the longer the learner remains on task, the more they are likely to learn. Technology systems, such as MOOs and gopher servers, have not withstood the test of time because they were not engaging enough. On the other hand, a fairly simply program like Oregon Trail continues on as students seem enthralled with it. I am unfamiliar with any research showing large test score gains for Oregon Trail users, but it is being used in classrooms around the country.

The next component for technology success is that it must ***fill a need***, curricular or administrative. Nearly every school district has an automated payroll system, because the business office staff can be more productive and makes fewer errors when using an automated system rather than writing out checks once or twice a month by long hand. In most cases, the technology tool will replace an existing product or service. A corollary is that it must make sense to replace the existing system with a technology tool. Graphing calculators are an excellent example. Nearly every advanced math classroom in the country now includes graphing calculators as they can manage all of the basic operations a student needs to complete plus they help students visualize advanced mathematical concepts.

Flexibility is another component of successful technologies. Flexibility takes on a number of facets. The flexibility can evidence itself in synchronicity. An example would be online courses that allow asynchronous participation. Blogs and Wikis are flexible environments that allow for asynchronous collaboration. The Wikipedia allows for an end user to contribute to the encyclopedia directly that also provides for a sense of ownership. That was never possible for the masses with *World Book*. E-mail is probably my favorite asynchronous technology as I can get quick and sometimes immediate responses without having to play telephone tag. E-mail is so much more flexible than traditional postal mail or telephone service, that its appears to be trying to replace both to some extent. Flexibility can also express itself in differentiation. Adaptive testing may be one of the truly best examples of successful technology when properly implemented. In an adaptive test, the computer will truly find out what level of skills or knowledge the student possesses. If the student gets a wrong answer, adaptive test software can present the next question to address the same learning goal, but at one level of skill below the previous question. Other adaptive tests can discriminate based on which of the distracters (wrong answers) was chosen. So one can analyze why the student made the mistake and make the

test more of a learning experience for both the students and the teacher. In theory such analysis has always been possible with paper and pencil tests, but nearly instant feedback is possible through a computerized test that isn't possible with paper and pencil tests. At a simpler level, software can simply adjust its questions and pace to the individual student much easier than a classroom teacher can with 25 students. Students can also work at their own pace on a computer while a traditional classroom teacher has to try to herd 25 individual learning styles in one uniform direction at a collective pace. The programmed instruction movement of the late 1960s and early 1970s was a primitive precursor to the best of modern educational software programs. Novel/STARS is an online service that allows students to move through high school courses at their own pace. This software can serve a school by providing a place for late semester transfers to work on a single course instead of being dropped into a full course load three weeks before final exams. Students in need of remediation can work faster and catch up if they wish. The ability to catch up to grade level peers is almost non-existent in traditional programs outside of summer school offerings.

Flexibility can also address multiple or non-traditional learning styles. For example, many at risk learners are labeled as visual learners. Traditional front of the room lecture often provides few visual stimuli for such students. Even simple PowerPoint presentations will often help these students take better notes and stay more engaged. Computer programs that allow students to visualize mathematical concepts, such as Geometer's SketchPad and Maple, are often cited as positive ways to improve math achievement. The student with an interpersonal learning style may do much better in a blog assignment than if asked to write a traditional term paper.

Technology also has to be ***accountable or results oriented***. Especially in today's environment of high stakes testing, other No Child Left Behind measures, and looming financial crises, every dollar spent needs to be able to be supported. In order to spend money on technology items, the school or district must be able to articulate the positive results. These results must be measurable in a form that the wider public will acknowledge as valuable. In today's world that means student achievement scores as measured by tests or other quantitative measures, reductions in drop out rates, improved attendance rates or improved graduation rates. However, the CEO Forum articulated five ways in which to measure the results of technology:

- Improved scores on standardized tests
- Increased application and production of knowledge for the real world
- Increased ability for students to manage learning
- Increased ability to promote achievement for special needs students
- Improved access to information increases knowledge, inquiry and depth of investigation[ii]

How do we measure results in a way that decision makers will value is a difficult question. Even since the CEO Forum's report came out in 2001, the landscape has changed. All five measurement criteria are still valid, but some now hold less value in our test-laden world. The simple answer is through standardized achievement testing.

Northwest Evaluation Association's (NWEA) Measures of Academic Progress (MAP) is an excellent adaptive testing program that is aligned with many states' standards. Such data collection allows a teacher-librarian to work with a group of teachers on a project and then analyze the fruits of their labors by looking for student achievement gains among those students involved in the project as opposed to those classrooms that didn't take part. Similarly, the performance of students who did take part in an online learning environment could be measured against those students who completed a traditional module of instruction. Such achievement measurements are strong measures for use in swaying decision makers.

There are other measurements that can be used as well, although potentially not as obvious. In a case where a school has a 1:1 laptop pilot program, attendance rates of those students could be compared to a similar group of students not involved in the pilot. If the laptop program increases the student attendance rate, there is a positive step forward. In fact, drop out prevention funds might be available to support the project. In an elementary school, are students less likely to miss school on days they have computer classes? That would be another way to measure technology impact without having to give students an additional test.

One of the most compelling ways to measure achievement is through local action research. If action research projects can show a direct impact on achievement at the local school or district level, that will be viewed as extremely compelling evidence. If a teacher-librarian and a group of teachers demonstrate the achievement impact of a given technology or library project, there will be support for that project. In today's educational milieu, dollars will follow projects that can demonstrate achievement gains.
Another way to show results is by impacting special learner groups. Many learning style inventories exist that allow students to determine his or her natural or preferred learning styles. Some also then provide students tips on how to study to embrace the given style(s). This process of creating student self-awareness may also assist students in achievement. As a simple experiment, divide your students into two random groups or collaborate with two classroom teachers. With one group, find a learning styles inventory and administer it to each student, and then provide each with suggestions on how to support their learning style. Throughout the next unit or grading period, ensure that they regularly reflect on and actively support their learning style. Give both groups the same unit test at the end of the period and see if the group who took the learning styles does better than the other group or better than expected based upon past performance. Action research can be that simple. If the students who took the learning styles inventory did better, it might make sense to expand the program and have all students take the inventory.

Similarly, you could make an online discussion group, a blog or a wiki available to one section of high school literature students and ask them to use it to discuss the unit's reading assignments. With another section of the same class, continue to teach the course without the blogging requirement. At the end of the unit, compare the test results of those students who engaged in blogging and those who didn't. If you have a solid and valid unit test, those achievement results should hold nearly as much weight as standardized

test results. If the blogging experiment is successful in improving growth, move to blogging for an entire semester and then measure the semester grades and potentially state exam scores for each group. Post your action research results and share with your colleagues.

Achievement as measured through real world production work can be used where teachers have well defined and agreed upon rubrics. However, within the standardized test climate we work in, such efforts may not hold as much weight as they did a few years ago. The last item, providing improved access to information to increase student achievement, is difficult to define and provides too many possible variables for causation to be determined, unless the study is working within fairly narrow parameters.

In the end, technology must fill a need whether academic or administrative. The technology must be easy to use, engaging, flexible and provide results. There are a myriad of further considerations to achieve technology success within a school or district. The systems must be reliable and the school must provide for proper support and training for example. The district must also adequately fund the system. However, those are all aspects of the school or district and not the technology products themselves. Good luck and share your action research results widely.

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[i] Saettler, P. *The Evolution of American Educational Technology*. Englewood, CO: Libraries Unlimited, 1990, 98. Quoted from the New York *Dramatic Mirror*, July 9, 1913.

[ii] CEO Forum, *Key Building Blocks for Student Achievement in the 21st Century,* June 2001, available at http://www.ceoforum.org/downloads/report4.pdf

Challenges to Teaching Evaluation of Online Information: A View from LM_NET

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Statement of the problem

School library media specialists know that although most young Americans are well-versed in the use of digital technologies, many are novices when it comes to searching, selecting, and assessing the meaning and value of the information they find online (Valenza, 2006; Educational Testing Service, 2006). Yet efforts to teach online information literacy skills in today's schooling environment are limited by a number of significant challenges, both institutional and pedagogical (Harris, 2007; van't Hooft, 2007; Bell, 2007; Sutton, 2006). Even though young people have more access at school to computers and the Internet than ever before (National Center for Education Statistics, 2005), the frequency with which these tools are used and the ways in which they are used at school differ markedly from their use at home (Hitlin and Rainie, 2005). For all practical purposes, young people have unfettered access to digital tools *outside of school.* They are exposed to a wide range of unvetted information, participate in online social networks, access a wide range of media, and create content themselves. *Inside school,* young people experience an environment that is highly protective (in the name of safety) and limited in scope (in the name of schooling's education mission). In such an environment, where the common tools of youth parlance cannot be accessed, it can be quite challenging to teach students to evaluate the credibility of the information they find online.

In an earlier analysis of the challenges that confront educators when trying to teach credibility assessment and the evaluation of digital media, I proposed a model that describes these difficulties in terms of **structural** challenges and **dynamic** challenges. Structural challenges are institutional, in the form of government regulation, and school policies and procedures. Dynamic challenges are the processes and relationships that occur as a consequence of young people's cognitive development and the inherent difficulties of navigating a complex web environment.

This study focuses on the **structural** challenges and how their influence is perceived in the community of school library media specialists. Do library media specialists view the restrictions of the contemporary schooling environment as having a deleterious effect on their ability to teach the evaluation of online information? The model subdivides the structural challenges into three general categories:

High-stakes testing

High-stakes testing describes an environment of accountability that has resulted in the proliferation of mandated testing and includes such legislation as the No Child Left Behind Act. Many in the education community feel that the need to address high-stakes testing has limited opportunities to teach skills and subjects that are not included on standardized tests, including such topics as information literacy (Center on Education

Policy, 2006; Kim and Sunderman, 2005; Sunderman et al., 2004; Zygmunt-Fillwalk and Bilello, 2005).

Everyone in charge, no one in charge

Although the federal government makes its mark on education through legislation like the No Child Left Behind Act, the American system of education is otherwise highly decentralized. Education is locally funded and, in large part, locally controlled. Individual states set graduation requirements and local school districts design curricula to meet them. Instead of being subject to federal control, public schools must meet the standards of regional accrediting bodies and the subject-area standards set by state boards of education. There is no single, comprehensive national authority that requires the presence of library services in schools, let alone the teaching of information literacy, digital or otherwise. While evaluation skills can be identified in various professional society standards documents (e.g., International Society for Technology in Education, 2000; National Council of Teachers of English and the International Reading Association, 1996) and are at the heart of library association standards (American Association of School Librarians and the Association for Educational Communications Technology, 1998), compliance with these standards is strictly voluntary and is subject to the priorities of local school boards and available resources.

Limited access to digital media

Student access to digital media is limited by a number of factors. Public and school libraries that receive "e-rate" discounts for Internet access must comply with the Children's Internet Protection Act (CIPA), which requires the installation of Internet filtering software. But filtering software is expensive to purchase, requires sophisticated network administration skills to install and maintain, and both underblocks and overblocks online information (Kranich, 2004; Sutton, 2006). Teachers themselves introduce filter-style limitations by restricting their students to prescreened content, even at more advanced levels of instruction. If most school Internet access is vetted in this way, students have little opportunity to learn important searching and evaluation skills (Heine, 2006). Access is also limited by generic acceptable use policies (AUP) that allow only curriculum-related use, despite the fact that school libraries have long offered non-curricular reading materials such as recreational magazines and non-required fiction.

Research questions

As stated, this study focuses solely on the **structural** challenges outlined above, the institutionalized factors that inhibit educators' efforts to teach online information evaluation, and how they are perceived by working school library media specialists. I was interested in finding out if these challenges are regarded as significant concerns for practitioners. If so, how are these concerns expressed? Do they rise to the level of concern found in the professional education literature and the popular press? Are some challenges considered more important than others? Finally, is there a particular context for the concerns? In other words, are they part of a larger set of issues that affect school library media specialists?

Methodology

In order to answer these questions, I turned to LM_NET, the nationally-based electronic discussion list used heavily by school library media specialists and those interested in the field. As much as any other indicator, it can be considered reasonably reflective of the concerns and interests of a broad-based cross-section of practitioners in the field. I examined a six-month period of messages from the LM_NET archives (http://www.eduref.org/lm_net/archive/), January 2007 to June 2007, aiming to capture the experiences and concerns of a complete semester. I selected and coded messages that addressed, either directly or indirectly, the topic of teaching web evaluation skills. A list of topics *not* considered for inclusion because they fall outside of this rubric can be found in the Appendix. In particular, I looked for discussions of structural challenges or barriers to teaching evaluation skills. At first, messages were separated into four categories – a category for general queries about teaching website evaluation, and a category for each of the three types of structural challenges that were outlined in the original model. As sub-themes emerged, the coding process became recursive, allowing me to code messages into more refined subcategories.

Although these results are technically quantifiable, a numerical accounting and distribution is not to be considered highly meaningful. There are a number of reasons why this is so. First, LM_NET uses a "Target/Hit" system in which a person who poses a question (the "Target") collects responses off-list by private e-mail, and then posts a compilation of the responses (the "Hit"). Therefore, a single post may actually represent multiple expressions of opinion. Second, at any given time, a hot topic may squeeze out discussion of other topics. This situation occurred, for example, when conversation was dominated by the controversy over the word "scrotum" in the Newbery award-winning book, *The Higher Power of Lucky*. Third, there are a significant number of "low-content" messages. These are messages that are sent by mistake, protocol messages from the discussion list owners, corrections to previous posts, and so on. Therefore, the numbers that do emerge are best seen as a very general indicators that further characterize what is essentially a discourse analysis.

There are some limitations of this methodology. LM_NET represents the points of view of those who participate in the community and may not reflect the feelings of the many library media specialists who do not (or do, but simply "lurk" on the list). The community is populated by professionals who are oriented towards this type of online communication, which excludes the views of those who are not. Discussion is often dominated by those who feel very strongly about a topic, which tends to diminish the voices of those whose views are more moderate. Finally, it is important to note that the process of message selection and coding is subjective. It may be that another analysis of the same content would produce results that differ from what is presented here. Future researchers might also explore individual categories and subcategories, each of which could be much more finely granulated than they are in this study.

Coding

The recursive process of examining postings produced the following categories and subcategories:

1. **GQ** General queries about teaching evaluation of online information
2. **HST** Postings about high-stakes testing, No Child Left Behind, and associated issues
3. **ECNC** "Everyone in charge, no one in charge" – postings about problems associated with the lack of standardization in teaching information evaluation skills
    a. **DR** *ECNC* postings about defining (and defending) the role of the school library media specialist
    b. **S** *ECNC* postings about standards bodies, standards documents, and associated issues.
    c. **WA** *ECNC* postings describing workarounds developed to deal with problematic *ECNC* situations.
4. **LA** Postings about limited access to digital media
    a. **SL** (Self-limiting) *LA* postings describing situations in which limited access is self-imposed by school library media specialists
    b. **WA** *LA* postings describing workarounds developed to deal with limited access situations.

Much more will be said about these categories as each is discussed in the results section. However, some general comments may be helpful. These codes are not mutually exclusive. For example, a January discussion of restrictive policies towards Web 2.0 applications was initially coded as *LA*, then ultimately evolved into an *ECNC* discussion as some participants made the case that limiting access to digital media made it difficult to achieve standards. Quite often, particularly in the case of a "Hit" posting, a discussion that fit primarily into one category touched on core issues of another category. For example, a *GQ* about teaching students the pitfalls of using online translation services elicited a comment which described how such services were blocked in the poster's school, which was an *LA* issue. This "crossover" phenomenon again points to the need for caution in interpreting the significance of the total numbers within categories.

In the context of the *ECNC* and *LA* categories, "workaround" means finding a method – generally outside "the system" – to solving a problem, rather than solving a problem by going through authorized channels. Descriptions of workarounds may also include the poster's rationale, such as a choice to pick one's battles. In such cases, the poster described surrendering the purely principled stand on a particular issue in favor of chances for a obtaining a clean win on other issues that were deemed more important.

Some postings that would have otherwise been considered out of scope for this study (see Appendix) were still included in the analysis. These exceptions occurred when the otherwise unrelated conversation explicitly touched on teaching web evaluation. For example, a discussion of staffing levels may have included concerns about having enough professional staff to teach web evaluation. Some administrative or process postings were included when they clearly related to the teaching of web evaluation, as did a number of postings on fixed versus flexible scheduling, collaboration with teachers, computer lab

rules, and website hoaxes (which might otherwise be considered resources discussions). Similarly, discussions of the read-write web and Web 2.0 often led to *LA* discussions, which in turn had bearing on web evaluation instruction. However, technical questions about how to set up various Web 2.0 services (e.g., blogs and wikis) were not included in the analysis. I also included some topically unrelated postings because the contributors used creative spellings and other workarounds to prevent their messages from being blocked by LM_NET recipients' filters, e.g., spelling "homosexuality" as "homo*exuality" in a post.

Results and discussion

Despite the caveats described earlier about quantifying these results, the aggregate numbers do reveal an impressionistic picture. For the period January through June 2007, the total number of postings on LM_NET was **8,189**. Of those, the total number of postings on the subject of teaching web evaluation was **468**. That total broke down into the categories as follows:

General Queries (*GQ*): **60**

High-stakes testing (*HST*): **14**

Everyone in charge, no one in charge (*ECNC*): **205**

ECNC postings *as a whole* were further divided into two subcategories:

Standards (*S*): **26**

Defining and defending role (*DR*): **179**

Limited access (*LA*): **189**

Selected LA postings were further divided into two subcategories:

Self-limiting (*SL*): **39**

Workarounds (*WA*): **15**

[NOTE: Some of the *ECNC* postings also exhibited workaround (*WA*) characteristics, typically in the form of hints or tips. These were vague enough that a strict *ECNC-WA* numerical accounting seemed unhelpful.]

General Queries (GQ)

Postings that were assigned to this category were the general, how-to queries participants posed about teaching web evaluation. Specifically, these were questions about methods of teaching, resources and websites to use, and activities participants found to be successful. For example, within a thread about online translation services, one participant described an activity she used to help students understand the pitfalls of such services. A number of participants posted messages about effective ways to teach students about Wikipedia, the very popular publicly-written encyclopedia. Some respondents advocated a corroboration technique, in which students would compare what they found in Wikipedia to information they found in a variety of other sources. Some threads addressed web evaluation instruction more by implication than by direct reference. One such case was a discussion about student-created webquests. Participants in the thread described webquests as having great potential as vehicles for teaching information literacy and promoting higher order thinking. The subtext (and implicit message) was that a core feature of webquest creation was learning to evaluate websites.

This category also included queries about hoax sites, with participants either asking for some examples to use in teaching or for help in determining whether or not a site actually was a hoax, a scam site, or a legitimate source of information.

The fact that there were relatively few postings in this category as compared to the aggregate total is interesting. Perhaps it is attributable to the fact that people who post messages to an electronic discussion list do so because they have a thorny problem to resolve or wish to share their views on a controversial topic. Simple informational queries are often easier to address by other means.

High-Stakes Testing (HST)

Perhaps the most unexpected finding to emerge from this discourse analysis was the low occurrence of postings on the topic of today's high-stakes testing environment. As much attention as this issue receives, in both the mainstream press and in education-related publications, it apparently is not high on library media specialists' radars as being considered a deterrent to teaching information literacy skills. This absence of concern was surprising, particularly given the public concern expressed by other content specialists about finding the time to teach curriculum that "is not on the test," such as social studies and the fine arts (Sunderman, et al. 2004).

One possible explanation for the lack of message traffic on this topic is that LM_NET posters felt high-stakes testing was a battle that could no longer be fought. Legislation such as the No Child Left Behind Act has made high-stakes testing an incontrovertible fact of life and therefore may not have been considered worth valuable time and energy to discuss and debate. The conversations that did take place on this topic generally lamented the status quo. Participants observed that teachers were foregoing inquiry and research projects because they had to focus on test preparation with their students. Participants noted that flexible scheduling would "go to waste" because teachers did not have time for activities that would not be tested. There were also requests for help in assessing how to establish that library programs supported NCLB and student achievement in measurable ways, or how other "ancillary" teaching staff could demonstrate that they contributed to the improvement of test scores. I also included posts that did not directly address the impact of high-stakes testing on web evaluation instruction, but that discussed issues that had an impact by implication, such as restrictive student scheduling and library closures for testing.

Everyone In Charge, No One In Charge (ECNC)

In general, the *ECNC* messages were the most emotionally charged of all the categories. I sorted all posts from this category into two subcategories to further clarify and define the concerns within the topic:

Defining/defending role (DR)

In the absence of standardized requirements for school libraries and librarians – let alone for teaching information literacy skills – library media specialists often found themselves on the defensive in their schools. Most of the *DR* postings addressed either questions of self-identity (who are we and what do we do?) or concerns about how to communicate this identity to teachers and administrators.

Certain hot button issues served as natural catalysts for *DR* conversations, such as fixed/flexible scheduling and collaboration with teachers. The fixed/flexible scheduling debate is a perennial topic on LM_NET. Some of the discussions during the period under study were practical requests for information, such as strategies for handling research projects and teaching information literacy skills in a fixed schedule setting. But most of the discourse was characterized by strong feelings and expressions of opinion on one side or the other of the debate. Inevitably, scheduling issues were tied to debates about the role of the library media center and the media specialist.

The discussions regarding collaboration were just as heated, if not more so. January's thread on this topic alone produced approximately 53 posts. Participants shared concerns and anxieties about why library media specialists collaborate, how to collaborate, how to connect collaboration to evidence of student achievement, and who might be standing in the way of collaboration. A May discussion of why individual teachers might not collaborate with library media specialists was emblematic of the entire *ECNC* syndrome. Aside from teachers not understanding how to collaborate (which points to school culture or to a deficit in teacher training), they may have felt that there was no mandate to collaborate, that their territory or classroom time was threatened, or simply did not recognize the term "collaboration" – which may be considered more library jargon than standard education jargon. At times these discussions slipped into conversations about standards, an instance of the *DR* and *S* categories overlapping. Participants discussed collaboration in the context of existing information literacy standards, identifying information literacy-type standards within the standards of other disciplines, and writing information literacy standards that other educators could understand. Participants also discussed instances of "competing" collaboration efforts, such as the literacy collaborative movement (Literacy Collaborative, n.d.), which apparently bypasses the school library in favor of classroom libraries.

Some of the *DR* discussions confronted even more fundamental issues, such as the actual value of the profession in today's world. An April response to the question "Are librarians obsolete?" elicited approximately 64 responses. These postings reflected the familiar *ECNC* anxieties caused by other educators not understanding the school librarian's role and the library profession's difficulty in communicating that role to others. Participants discussed why school librarians might be considered obsolete, citing such examples as district centralization of many functions (e.g., book selection, processing, and cataloging), automation of routine tasks, utilization of library space for non-library purposes (e.g., meetings, testing, presentations), and even "all information being online." Other posters countered these examples by citing the kinds of work librarians do that may be invisible to administrators and teachers but cannot be automated or routinized, such as teaching higher order thinking skills and managing a library operation. The summary message from latter group of posters was to deny that "librarians are obsolete," and to assert instead that "if we don't do something to help people understand who we really are and what we really do, then we'll *be made* obsolete." A more cynical expression of this issue was to claim that it matters more what others *think* you do than what you *actually* do.

The *DR* category also included discussion of staffing "pecking orders" in schools, with most participants agreeing that media specialists were never in the group that was considered most essential. A number of posters even cited examples of administrators and teachers who, almost as a point of pride, avoided needing to use the library. Some urged fellow media specialists to ensure their employment security by pursuing alternative training in an area such as educational technology. Others put a more positive spin on this advice. They characterized retraining as retooling, reinvigorating, and redefining one's job skill set in order to remain responsive to student learning needs. Others opined that librarians' jobs and school libraries would persist, but may be identified by new names. Many posters felt that teaching was the most definitive and important part of the school librarian's role, and that librarians who did not teach were the ones who would become obsolete. Yet others insisted that the individual professional's job responsibilities did not actually make much difference, claiming instead that the only factors that really mattered were the attitudes, experiences, and expectations of the administrators in charge. The thread looped back to standards and mandates, with some participants claiming that obsolescence was inevitable for any school program that was not mandated. Fixed scheduling was cited as a form of job security for elementary school librarians, as long as teacher preparation time remained a requirement. These posters felt that the fight had to take place at the standards-making level, not the building level.

A number of participants posted variations on the theme that librarians *as a group* would not become obsolete, but *individual* librarians would if they did not abandon dated practices, adapt well to change, and continue to learn. These sentiments prompted strong defense of some traditional library tasks, which respondents felt kept librarians in touch with student needs and interests, ensured that the library functioned well, and established helpful models for students. For example, if students did not find books in order on the shelves, they would not see a need to put them back in order. These opinions were countered with exhortations to prioritize and to find ways to delegate routine tasks (even to students), so that the core missions of reading advocacy and teaching information skills would always come first.

Standards (S)

The *S* subcategory was used for *ECNC* discussions that focused on state standards and the standards developed by professional organizations. Many of these queries were informational in nature (i.e., not expressed in terms of problems or complaints). Participants shared information about locating standards, interpreting standards, designing curriculum to meet standards, and the like. One prominent theme that emerged was frustration with a status quo in which sets of standards seem to compete, seldom sharing or incorporating features one from another. This concern came up a number of times in reference to the development of AASL's new Learning Standards, which will eventually replace *Information Power* (American Association of School Librarians and Association for Educational Communications and Technology, 1998). Participants expressed interest in seeing the new standards incorporated into state literacy frameworks and at least correlated with the standards of allied organizations, such as the International Society for Technology in Education (2000). Some participants discussed the desirability of uniform standards because they could be used to justify professional positions. This concern with institutionalizing (literally "standardizing") the role of the school librarian

overlapped with the *DR* themes discussed above. Participants also discussed whether or not Web 2.0 skills should be incorporated into learning standards, since they appeared to show promise for improving learning and reflected the thought processes of contemporary learners. A good deal of this discussion touched on *LA* issues, since many schools did not allow the use of various Web 2.0 tools.

A debate was sparked by an editorial Carol Simpson wrote (2007) decrying the low percentage of students who demonstrated minimal information literacy competency on the Educational Testing Service's new Information and Communication Technology (ICT) test. Participants expressed dismay that the designers of the test seemed to be unaware of existing information literacy standards and the role library professionals played in their implementation. Several posters shared concerns that the existing as well as the new standards were too general and therefore hard to communicate to other professional audiences. Another perspective within this thread argued that media specialists *do* have a subject area, with a well-defined curriculum, and that the profession should not lose sight of the need to teach its own content as well as teach in support of other content areas. Others countered that information literacy standards must be situated within classroom curriculum standards to be effective and meaningful. If those content standards succeed, then information literacy standards succeed. The conversation eventually cycled back to advocacy for the *Information Power* standards and for the standards that are under development. Participants were urged to write about information literacy standards for journals outside the library field and to present at the conferences of other education professionals.

Workarounds (WA)

Some *ECNC* conversations included various methods participants used to deal with potentially untenable situations. This phenomenon occurred primarily in response to fixed/flexible scheduling concerns and the methods participants employed to "make do" with a scheduling environment they could not otherwise change. A workaround might be articulated as "making lemonade out of lemons" when turning a situation toward the positive, rather than agitating unsuccessfully for the "ideal." The collaboration threads included suggestions for enticing teachers to collaborate by "making the teachers look good." Participants also advocated an "if you can't beat 'em, join 'em" approach. For example, during the discussion of the literacy collaborative movement, participants were urged to emphasize the reading instruction facets of the school librarian's job.

Limiting Access (LA)

Filtering software was perhaps the hottest topic within the *LA* category, as might be expected. There were many requests for general information about products and implementation practices. Participants sought recommendations and wanted to know about various products' patterns of overblocking, underblocking, and blocking of online catalog records or subscription database content. Posters asked questions about other schools' policies for filtering specific types of content and the procedures that were used for unblocking specific sites. For the most part, unblocking procedures were cumbersome, involving multiple people and transactions. Participants expressed concerns about filters blocking entire classes of web tools (e.g., wikis and blogs) as well as specific websites (e.g., Geocities and Wikipedia). In some settings, distinctions among social

networking sites and services were not very fine-grained, so that even services with clearly educational sponsorship and functions (e.g., Edublogs and professional society wikis) were blocked. Other participants reported tales of over-filtering that were outrageous by any standard. One such story involved LM_NET posts being blocked at a school because the disallowed word "cialis" was embedded in the word "specialist." Some media specialists came to LM_NET looking for evidence from other schools that might support the cause of a concern at home. The poster might ask if others could access specific websites or types of content at their schools. The responses might signify whether or not, for example, the poster's technology department was blocking certain kinds of political content. Many of the posts about filtering issues were written with humor and even sarcasm, along the lines of "I'd love to show this video to my students, but YouTube is blocked at school. Hmm." Or, "Blogs and wikis are not (yet) blocked at my school."

LM_NETers were frustrated with their role as filter-enforcers. At one point during the study period, they engaged in a lengthy discussion about the proxy servers students used to bypass filtering software at school, usually to access social networking sites like MySpace and Facebook. The "hit" on this topic consisted of case after case of participants describing how they found students able to connect to the forbidden social networking sites through the use of one proxy server after another. As a group, participants found it very difficult to keep up with the elusive and ever-changing world of filter-defying tools and seemed to feel helpless in the face of students' persistence and inevitable success. Interestingly, there were no instances of participants suggesting that perhaps this was a battle not to be fought, that software filtering might not be the appropriate solution for this particular problem. Instead, participants seemed to share the tacit assumption that MySpace and Facebook (and their ilk) had no place in the school environment, and that even though students were finding ways around the filters, media specialists just had to try harder to find out what students were up to and block faster.

In January, a filtering discussion was broadened to incorporate a larger issue, that of school librarians' frequent lack of control over the technology they were responsible for. For example, not only were librarians often not allowed to override filtering software, they frequently were not allowed to personally update or control the content on their own websites. Instead, they were required to submit requests for changes to others who were empowered to make the changes. An April thread highlighted a recent trend in which schools were outsourcing all website development. In those cases, librarians also had no control over the look and feel of their web presence – nor did any teacher, for that matter. A counter-argument was made that chaos might reign if all staff could change the school website, and that the answer was responsive technical support (which in some cases actually *was* the media specialist). Some participants shared their home-grown solutions to these restrictions. One media specialist convinced administrators to allow her to set up a book review blog by conducting a great deal of research on blogging and presenting a detailed plan. Another poster reported on an implementation of filtering software that allowed students to submit their own requests to unblock a site in real time. As the recipient of these requests, the librarian in this case found a new and valued way to communicate with students, respond to some needs she had not been aware of, take advantage of a few teachable moments, and help the technology department.

Some *LA* situations were the result of more fundamental deficits, such as insufficient funding for technology or the lack of available technology expertise and administrative support. The discussion list was peppered with queries regarding free web hosting sites. Some participants were desperate just for physical space for computers. Others were trying to work with recalcitrant or otherwise uncooperative technology staff. Many were stymied by bureaucratic minutiae and tangled administrative policy. One school librarian was poised to experiment with Web 2.0 learning tools, but local school policy dictated that all web services be locally hosted, even though the software infrastructure for blogs and wikis (PHP and MySQL) was not supported. Some posts revealed frustration with the school librarian's too-frequent role as computer lab monitor and school rule enforcer, which was similar to concerns reflected in *ECNC* topics.

Included in the *LA* category were posts that did not explicitly address web evaluation, but instead described the prohibition of certain classes of online tools. Most of the tools mentioned were social networking sites and Web 2.0 applications. There were also a number of postings about restrictions on hardware devices such as flash drives and mp3 players. The prohibition against use of these tools automatically prevented their incorporation in teaching online information evaluation, and was therefore considered an aspect of the *LA* theme. For similar reasons, I also included some of the postings from a lengthy discussion of the delivery mode for LM_NET messages – whether the service should remain a discussion list or go to blog format. A sizable proportion of participants responded that *all* blogs were blocked on their school servers. Therefore, the discussion-of-substance concerning the best way to follow and participate in LM_NET discussions was sidetracked by the *LA* issue, even though concerns about teaching web evaluation were not explicitly mentioned. Similarly, an ongoing discussion of the Julie Amero case (Cowan 2007), in which a substitute teacher was prosecuted for "allowing" students to view pornography online, was included in the analysis because it pointed to related *LA* issues of inadequate staff training and poor technology implementation. The problem of limited access is exacerbated by school staff who are unfamiliar with technology, are not themselves well-versed in online information evaluation, and who work with filtering and security systems that are not properly maintained.

A subset of *LA* posts were further defined by sorting them into the subcategories Self-limiting (*SL*) and Workarounds (*WA*).

Self-limiting (SL)

Self-limiting behavior was used to describe situations in which media specialists themselves were acting to limit student access to various types of online information and services, rather than limited access being externally imposed by school administrators, school policies, laws, or other outside forces. Self-limiting actions occurred for a variety of reasons, from concerns about safety to epistemological beliefs about what students should and should not be doing in a school environment. In other words, self-limiting actions could be conceived of in either a positive sense (e.g., limiting access in order to scaffold student learning by introducing resources incrementally) or in a negative sense (e.g., limiting access in a censorial way).

The positive expression within this subcategory was seen in posts that described librarian-directed (and sometimes teacher-directed) limitation of resources as a way to scaffold learning. Many of these posts discussed starting students with pre-selected sites or directories of vetted sites, such as the Librarians' Internet Index. Some respondents suggested then moving students into more open-ended and self-directed searching and evaluation tasks. Participants exchanged lists of recommended portals and directories. There was a discussion of "make your own search engine" tools like Google Co-op, in which the search engine searches only a set of websites pre-selected by a librarian or teacher. While this strategy was seen as being useful for teaching search techniques, some argued that the practice denied students the opportunity to learn to evaluate websites themselves.

This category also included limiting access for safety reasons. There were numerous requests for child-friendly image sites. Some posters described these sites with the student's point of view in mind ("My students feel safe on this site"). Occasionally the safety concerns were expressed in alarmist terms, possibly borne of ignorance, such as a warning not to allow students to use a popular social networking site for children because a parent had claimed it was being infiltrated by predators.

Frequently, *SL* posts reflected a perception of schools and school libraries as environments in which only educational information should be made available online. Many participants were quite clear in their personal belief that the Internet *at school* should only be used *for school work*. The tone in these posts was often judgmental, describing students who used the school computers in other ways with terms and phrases like "wasting" or "killing time," "having a social hour," and being "slackers," "players," "sitters," or "loungers." In one post, such miscreants were directed to use books and magazines instead (which, ironically, were also likely to be non-curricular in content). One brave poster described not really caring what the students were doing online as long as there wasn't a group crowded around the computer causing disruption in the library. This participant felt it was more effective to make sure those who really needed the computers for school work had first priority, including those in scheduled classes, rather than spending one's time trying to monitor unenforceable rules. Other participants were more willing to be enforcers (or perhaps did not see a way to avoid it). They had technical queries about how to thwart student use of proxy servers, how to retrieve deleted browser histories and, in general, how to make sure that students only accessed sanctioned content. Some of the postings seemed to belong in a "curmudgeon" category. An argument was made, citing laser disks as a point of evidence, that many Web 2.0 tools were the latest in a long line of technology enhancements that never lived up to their promise of reforming education. LM_NET participants were quick to offer examples that proved otherwise.

A number of participants felt that the open Web was simply no place for students to figuratively roam, even in the cause of school research. Some respondents to a *General Query* on teaching seventh grade Internet research skills expressed shock that teachers (let alone the librarian) would want their students to learn how to use search engines – particularly when the library had subscription databases to offer. The implication was that these teachers were exposing their unprotected students to an unvetted and potentially dangerous information world. One poster even described such a scenario as representative of a growing trend in which "teachers let kids dictate" where they want to

search. Others suggested requiring the use of pre-selected sites and several offered strategies that would encourage the use of the subscription databases.

Subscription databases themselves had a strange role to play in the *SL* subcategory. Finding them hard to promote with students, many LM_NET participants offered interesting lures which were, in some ways, employed at the expense of teaching web evaluation skills. Students might be required to fill out web evaluation forms for sources found using web search engines, but not for articles found using databases. Other strategies to encourage the use of databases included allowing free printing from databases (but not free printing from the open Web), making assertions to students that any source found on a database would not be questioned for its credibility, and requiring that database resources be exhausted before a supervised Google search could be conducted. One poster described being stuck with a filter that so often blocked the web content students wanted that they were forced to use the databases out of desperation. Though well-intended, such efforts to direct students to high-quality databases may have unfortunate side effects. First, students might easily infer that databases are sources of last resort, or sources that only teachers and librarians find valuable. Second, and ultimately more serious, the lack of scrutiny of database content implies that all information found in magazines, journals, newspapers, and other "traditional" sources is credible and of equal merit.

Workarounds

Like students, library media specialists have developed creative workaround solutions to cope with *LA* situations. One librarian drew on the resources of the LM_NET community when she had to present a lesson in under an hour and found that the author website she needed was blocked at her school. She was able to get the information from other LM_NET members who e-mailed and faxed it to her. To get around a filter that blocked printing from a newspaper website, a participant reported copying and pasting the text into a word processor – something students at the school were specifically prohibited from doing. A librarian who wanted to show a video from YouTube, which was blocked at her school, was given technical instructions for downloading and saving it locally. In some settings, Web 2.0 services hosted by education sites and organizations (e.g., Edublogs and Myteacherpages.com) "legitimized" the workaround process. During a May resurrection of the LM_NET-as-a-blog topic, several workarounds for reading blocked blogs were suggested – accessing them through a news aggregator such as Bloglines, asking others to send posts as e-mail attachments, reading the blog at home (hardly a "solution"), and purchasing a domain name that did not have the word "blog" in it. As mentioned earlier, some posters undermined filters by purposely misspelling or creatively punctuating words that would otherwise have been blocked, such as "b_log."

In some cases, the workaround was simply to ignore the rules when feasible. This tactic was described in a thread on the use of instant messaging applications, which can be very difficult to block by technical means. In those cases, staff continued to use instant messaging, but did so discreetly. One librarian, responding to a query about a prohibition on flash drives, reported allowing students to send themselves documents by e-mail (as a form of backing up), despite a policy disallowing student e-mail use at school. In a question regarding mp3 player policies, some respondents described turning a blind eye to their use in schools that prohibited them. For some, this was a principled form of careful rebellion. For others it was a way to maintain personal sanity in an environment

that increasingly required educators to monitor and correct all manner of student behavior.

In schools where the authority to update websites was limited to specific, non-library personnel, librarians resolved those situations by establishing web services in alternative locations – either with our without the cooperation or collaboration of technology personnel. In the best of those cases, this strategy relieved technology staff members from a work overload and was done with their blessing. IT staff were quite willing to link to the parallel site that someone else (the media specialist) worked to maintain. One poster went so far as to purchase her own domain name and pay the ISP out of her own pocket.

Conclusion

If there was an unexpected finding in this study, it was the relative lack of discussion on LM_NET about today's high-stakes testing environment. Yet this topic is certainly the focus of much concern in the discourse of educators, and even receives significant exposure in the mainstream media. In a column for *School Library Journal*, high school principal Chris Lehmann wrote: "While some argue that the digital age has made the librarian obsolete, I believe that librarians face a far more insidious threat – the growing reliance on high-stakes testing" (2007, p. 20). From Lehmann's perspective, the Internet is not what strikes a death knell for the profession, "but rather an assessment system that prioritizes multiple-choice answers that identify a single 'correct' response, rather than contemplation, research, thoughtfulness, multiple perspectives – all vital elements that a library can bring to a school" (p. 20). Library media specialists who post to LM_NET either do not regard the prevailing assessment system as one which poses a serious threat to their mission, or else do not feel they can take it on (possibly by themselves) in any meaningful way.

Although it was no surprise to find that LM_NET participants frequently discussed *LA* issues, the passive tone of some of those discussions resembled the tone of the *HST* conversations. When posters discussed matters over which they had little authority or control, such as filtering software, many seemed to exhibit a sense of resignation. Like high-stakes testing, filters were regarded as a fact of life and participants did not often question the status quo. Instead, most focused on trying to figure out how to live with it, even when radical change might not actually be called for. For example, while filters are required in schools that use E-rate funding, specific filter settings can generally be adjusted and refined, allowing teachers and librarians to access sites such as educational blogs and wikis. It was clear from a number of postings however, that in many schools existing unblocking procedures were so cumbersome that they violated the intent of the Children's Internet Protection Act, which specifies prompt unblocking of appropriate (and constitutionally protected) material.

The same tone of resignation (albeit peppered with frustration and even sarcasm) was evident in many of the postings from the *LA* self-limiting subcategory. Some in the field are starting to express concern about this phenomenon. Mary Ann Bell (2007) conducted two informal surveys of LM_NET participants and found that school districts were engaging in self-censorship by "filtering the filters." Districts do this by implementing overly broad interpretations of acceptable use policies, allowing students to

visit only pre-approved websites, and limiting Internet use to "instructional purposes." She describes the case of a school blocking all sites related to automobiles to discourage "frivolous use," and notes that: "Libraries don't deny students access to books about sports, pets, and hobbies, so why should we limit access to similar online resources?" (p.41). Bell points out that although many in the field are aware of this self-censorship, no one seems willing to talk about it. She charges librarians to actively reclaim their professional responsibility for managing information access (rather than ceding it to instructional technology staff) and to protect their students' rights to information.

In contrast to the tone of *HST* and *LA* categories, LM_NET participants exhibited a great deal of passion when discussing *ECNC* topics. Rather than resigned, the tone of those conversations might be angry, defensive, hurt, or emboldened. Many felt forgotten or misunderstood, despite good faith attempts to demonstrate their value and role in the educational mission of their schools. Yet, as Lehmann says in his essay on high-stakes testing, the role of the school library media specialist is more important than ever to "help students make sense of the blizzard of information at their fingertips" and "to remind us each and every day that our students can learn more – and do more – than a high-stakes test could ever measure" (2007, p. 20). Another vacuum that school library media specialists are well-suited to fill is that of the school leader in emerging information and communication technologies. Many LM_NETters bemoaned school administrators who lacked an understanding of Web 2.0 applications, both in terms of what those applications were as well as their potential for enhancing learning. One poster reported that when she mentioned the word "blog," she was sure her principal imagined something like MySpace. This is where the confident intercession of the library media specialist can spell the difference between a school response based on fear and a school response based on professional expertise. The angst that school library media specialists feel is genuine, but can be considerably reduced as individuals assert their role in managing the difficult issues brought about by access to digital media.

In general, schools (and their school libraries) are operating on out-of-date paradigms. Tension regarding non-print material has been around since the availability of alternative media types. In libraries, where literacy has always been a core mission, we have been schizophrenic about how we regard non-print media types. School libraries used to be all about books, periodicals, and the vertical file. Besides supporting curricular goals, collections were developed to encourage basic literacy and a life-long connection to reading. The purpose was to get students reading, hopefully edifying materials, but popular material would suffice if it meant students improved their skills and attitudes about reading.

Now the Internet has come (or is trying to come) to the school library. Where students used to browse the shelves, now they also want to surf the Web. In their personal lives, today's students use a suite of ICT tools that have changed the way they socialize and learn. Yet, use of these tools is generally discouraged in the school library, both in the name of safety and in the belief that school is not the place for "non-educational" activity. Bell (2007) attributes such self-censorship to fear and the need to have more student oversight. Yet, we now know that teenagers are more careful online than previously assumed (Lenhart and Madden, 2007; National School Board Association, 2007). As to the prohibition against non-educational uses of the Internet, how can one then justify the presence of recreational print material in the library?

Mark van't Hooft argues that limiting access to the Internet and its tools is more likely "to aggravate rather than resolve complex problems arising from the new conditions of the digital era" (2007). Others agree, and urge media specialists to take a proactive instructional approach: "Filters and self-censorship won't keep students safe from online smut. Teaching them safe and smart searching techniques will" (Bell, 2007, p. 42). We know that today's students have poor online searching and evaluation skills (Educational Testing Service, 2006). We also know that the ability to search well improves the ability to evaluate online information (Heine, 2006). So students who are only allowed to access pre-selected websites are being denied the opportunity to learn effective evaluation skills as well as search skills. Yet outside school, most experience unfettered as well as unguided access to the Internet.

In one of the many lively LM_NET discussions of Wikipedia, most revolving around whether or not to allow its use, several posters opined that the wrong question was being asked. Rather than asking if students should use Wikipedia as a source, the question should have been "How do we teach students to evaluate information, regardless of the source"? A similar sentiment emerged from the discussion on how to promote databases to students. Rather than allowing students to simply assume the credibility of all database sources, one poster noted that it was critical to remind students that "all information is filtered through our own or someone else's biases and filters. Everyone must use multiple resources in order to evaluate the authority and veracity of all information." This sentiment pinpoints the disconnect between the old paradigm and the new. At day's end, school library media specialists teach information evaluation, regardless of its format or origin. Though there have always been challenges to accomplishing that mission, it is time to give a closer look to the unique challenges that plague teaching the evaluation of online information.

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Appendix

List of topics not included in analysis

Books (recommendations, resources, collection development)
Censorship (books and magazines – distinct from website filtering)
Citation styles
Computer security in an administrative context
Computer monitoring software in a management context
Copyright and other legal topics
Discussion list announcements and reminders
Equipment and automation systems
General information literacy topics, unless they relate to teaching website evaluation (which can happen with searching instruction)
Information about free things, giveaways, and exchanges
Internet safety instruction of the "stranger danger" variety, unless it had bearing on teaching website evaluation concepts
Job announcements and career advice
Lesson plans not dealing with online information evaluation
Off-topic postings (including those labeled "OT" as well as those obviously off-topic)
Publisher resources
Reading programs (Accelerated Reader, etc.)
Requests for e-mail pen pals
Resources ("I need good resources for student research on X topic")
Process/administrative/procedural discussions (scheduling, maintenance, inventory, etc.)
Professional development
Pro-technology vs. anti-technology debates
Salary and related job issues
Staffing and budget levels
Teaching software packages to teachers and/or students (including some Internet applications, such as RSS or Second Life)
Technical technology questions (about software, hardware, establishing services, etc.)
Use of Web 2.0 tools (e.g., requesting advice for starting a blog on which students post book reviews), except where discussion directly relates to teaching website evaluation

Standards and Studies Later, Where Are We? Would Assessments Get Their Attention?

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Cabrillo College is the community college for Santa Cruz County in California. Since the Spring of 1988, students who take English 1A – the college's three unit transfer level English composition course – have also taken a one unit co-requisite course that teaches library and information research methods. The course is Library 10. We call it Information Research. Somewhere between 800 and 900 students take it every semester.

It's a workbook-based course taught primarily by adjunct librarians. Librarians visit the English 1A classes that are tied to their Library 10 sections early in the semester to explain how the course works. There is a firm mid-term due date, a firm final due date, and a performance-based final examination. Throughout the course students are encouraged to stop by, call, or email the Reference Desk if they have questions or problems and, in that way, all the librarians have ownership of the course. However, each student identifies and communicates with (e.g., via email) his or her specific librarian faculty member who grades their work. Some sections of English 1A are taught online, and students in those classes are paired with an online version of Library 10.

Let me tell you a true story about Santa Cruz County.

There are three school districts in the county – Pajaro Valley Unified School District in the south, where nearly 70% of the students are English language learners; Santa Cruz Unified School District in the center, with about 18% English language learners; and San Lorenzo Valley Unified School District in the north, with just 6% English language learners.[1]

Of the three school districts in the county, only one, Santa Cruz, has school librarians – we call them Library Media Teachers or LMTs in California.

From the very beginning of Library 10, librarians teaching the course felt that they could sort workbooks after grading them into two piles, almost without fail. In one pile would be workbooks from students who came from school districts that did not have LMTs, and in the second pile would be workbooks from students who came from Santa Cruz school district schools.

We all know how grim the situation is in California. The estimate is that only about 23 percent of California schools have a credentialed library media teacher part time or more.[2]

This was a study waiting to happen. Within our local community college district, one K-12 school district had retained librarians and library programs and the other two school districts had none. Did this circumstance make a discernable difference?

In the study, information for just over 500 students was collected about how they did in Library 10, which high school and school district they came from, and so forth.

The study showed that students from high schools with LMTs are more familiar with basic library use concepts, fundamental ideas about how information is organized and made accessible, and how to use online catalogs than are students from high schools without librarians. Their achievement levels are visibly better.

It is my sense that students in K-12 schools improve their library research skills through both instruction and practice at each grade level. You wouldn't teach English composition skills, for example, at one grade level and be done with it. To be most effective, instruction and practice should happen throughout one's schooling.

Drawing on my experiences as an instruction librarian for the last 37 years, it's my strong and considered judgment that there are no quick fixes if you come from a school didn't happen to employ credentialed librarians. That deficit cannot be overcome by attending a library tour during freshman orientation, or by sitting through a one shot presentation.

After I did this research and it was published – the article appeared in the May 2004 issue of *Journal of Academic Librarianship*[3] – what happened next?

I was asked by the library media teachers in the Santa Cruz school district to make a presentation at one of their school board meetings. Every Board member got a copy of the article and a copy of charts made to graphically illustrate the differences between achievement by school district.[4]

A strong emphasis in my presentation to the Board was this: school librarians are so important that if the Santa Cruz school district were to ever *contemplate* dropping its support for them, Cabrillo College would want to be part of that conversation. We at the college would be concerned.

I sent a copy of the article and the charts, and my business card, to superintendents in the two school districts in the county that do not have librarians. I never heard anything back.

I arranged a phone conversation between myself and one of the superintendents in the Pajaro Valley school district, where the schools are really struggling.
We had a nice talk. She said that they would like to have school librarians in the district, but there's no money.

I visited all the high schools in the two districts that do not have librarians. I talked with the very nice people who work in those libraries, and I gave a copy of the article and the sheet with the charts to them and to the principals.

I was part of a group of interested parents and school librarians and others who established a non-profit called Friends of Santa Cruz School Libraries – FOSL. We meet monthly. We try to highlight the importance of school librarians throughout the county; as an organization, we write letters and speak out at school board meetings.

One of our FOSL Board members is active statewide in the California School Boards Association. I've contacted that group offering to write an article for their periodical. No response yet.

I got interested in the California Standards Test. I went through the released test questions to identify those that seem most dependent on students having information literacy skills. Could one find out how students did in answering those questions by school district and whether their schools had librarians? I haven't yet discovered if that is possible.

I wrote a one page draft statement that outlined common goals and minimum resource requirements for students in K-16 schools in Santa Cruz county. We discussed it at our FOSL group meetings, it was discussed among librarians at Cabrillo, I have shown it to librarians at University of California, Santa Cruz. But, we don't know how to do the next step.

In sum, all those words and gestures later, where are we?

Looking back, I probably thought that once the research article was public and people knew about the study's findings, then the push for putting librarians back in the school districts that did not have them was going to be like spontaneous combustion. Building on all the research studies that link student success to the presence of school librarians, good collections, and active library programs,[5] I thought wow! *They are going to get it.* All we have to do is show them that it really is true. Right here. Locally. We surely wouldn't *on purpose* disadvantage students at some of the schools in our county!

I thought everyone would put school librarians on the top of their to-do lists.

It's pretty obvious that I, and the people I talk things over with, don't have a clue as to how things really work.

My sense is that in California, we've been down so long that people in general don't know what their schools are missing. Even locally this is the case. You would think the folks in the neighboring school districts that don't have LMTs would rise up: my kid's school experience should be as good as *theirs*. But it doesn't happen.

For quite a few years, now, I have maintained a Web page about information competency.[6] I try to stay current with trends and developments in information literacy at higher education levels across the country, but my main focus is on the 109 community colleges in California – which ones have an information literacy requirement, for example, and what does it entail? The Web page helps California community college librarians share experiences and learn from each other.

About once a semester, a library school student from somewhere will write me with an inquiry that goes something like this: "Hi. I've been using your Web site. Having done research about info lit programs across the nation, it seems to me that higher education institutions in California are more actively involved in information literacy efforts than is happening in other states. Is that your perception?"

I write back that I haven't researched that, but I am interested in their observations. I add that all four regional accreditation organizations for higher education in the U.S. include information literacy in their standards, so we know that, nationally, information literacy is recognized as an important set of skills in higher education.

But, the inquiries got me to thinking.

Proposition 13 was passed in 1978. It was in the 1980s, I suspect, that school libraries in California began their decline. It was in 1995 that the California State University librarians organized an information literacy interest group. It was in 1996 that the California community colleges began a push towards ensuring that community college students were information competent.

That these efforts began in 1995 and 1996 in California would fit the notion that college students were beginning to stream into higher education in the state without the requisite information skills – and it was noticeable. In larger and larger numbers, students were coming from K-12 districts without school librarians.

There are other variables, of course – the Internet happened, the Web happened, computers happened, etc.

When I have time, it would be great to find data or information that would provide a longitudinal picture for tracing the presence of professional librarians in California school libraries from about 1970 on. That context might provide a better understanding of why California is dead last across the country in the ratio of school librarians to students.[7]

It isn't that we haven't known what *should be* happening in our school libraries.

We've had standards for years – school library standards, and ACRL standards.

But talking about what we *should* be doing hasn't made that much of an impression. Obviously.

Which brings me to the next craze: assessment.

Instead of encouraging school boards to fund librarians and library programs by pointing to standards and studies, is it possible, in this current test-sensitive world of ours, that we might make a persuasive case to school boards if we were to show them that their students don't assess at adequate levels?

There are some good assessment instruments out there, now, and we could begin to find out.

TRAILS stands for Tool for Real-time Assessment of Information Literacy Skills.[8] It was developed at Kent State University and has been available for several years. It is possible to create an account and sample the assessment.

There are currently 3,050 accounts that have been set up in TRAILS from 50 states and 31 countries. More than 32,000 students took 1,130 TRAILS assessments during the 2006-2007 school year. (J. Gedeon, assessment coordinator, Kent State University, personal communication, 13 September 2007)

I have a burning curiosity as to how those 32,000 students did. I have written to people connected with the development of TRAILS, but they are unaware of publications or resources about the use of the assessment. There is no doubt something in the works.

It would be most interesting if TRAILS could be used to compare how students assess in different school districts, with and without credentialed school librarians.

Toolkit for Success[9] offers an assessment instrument that is aimed at at-risk high school and community college students. I have been unable to find out how it is being used, by whom, and what the experiences with it have been.

Project SAILS (Standardized Assessment of Information Literacy Skills), again developed at Kent State, is aimed at college-level students.[10] It is standards-based, using the ACRL Information Literacy Competency Standards for Higher Education. Reports are not by individual test-taker but for the institutional group taking the assessment. One aim of SAILS is to make it possible to track students at various educational stages, e.g., entering freshmen vs. graduating seniors.

When contacted, project managers at SAILS do not know of reports or publications that discuss the use of SAILS, although they assume that institutions that have administered SAILS have prepared internal documents about it. Institutions set up and administer the assessment directly, so Kent State is not an intermediary. (J. Gedeon, assessment coordinator, Kent State University, personal communication, 13 September 2007)

I would be so curious to know what the outcomes of SAILS assessments have been. Something is no doubt in the works. Over 80 institutions participated over a three year period in the development of the SAILS. Over 150 colleges and universities have registered with SAILS, so I would assume it has had a wide reach.[11]

I can't help but wonder if someone out there is using TRAILS or Toolkit for Success to assess high school students, and then matching those assessments to SAILS scores as student cohorts enter college. What if someone were doing this and then also comparing student performance by whether the school districts involved had credential school librarians or not?

To complete the picture of assessment instruments in higher education, one needs to mention Education Testing Service's iSKILLS.[12] The California State University system has been a strong driver for the development of the ETS instrument. iSkills tests information and communication technology using scenario-based tasks.

And then there is iLIT assessment which is currently in beta-testing.[13]
iLIT is tied to the ACRL Standards and includes use of real-time databases on the Web. I've been involved in the development of this assessment instrument.

I have often thought it would be very useful if librarians thought about information literacy within a K-16 framework. With the assessment angle so readily available to us, I think it would be fruitful to pursue activities such as the following:

> 1. Assuming that the assessment instruments available are valid and reliable, let's analyze the test questions and tasks. How are the test items aimed at high school students different from those aimed at college students? What are the different levels of understanding and task complexity? If we were to get a cognitive understanding of that, wouldn't that fuel fruitful discussions between college and high school librarians?
>
> 2. With TRAILS and SAILS in use, I presume, at institutions in many different states, wouldn't it make sense to investigate how students perform given whether their school or school district has credentialed school librarians?

These different assessment instruments available to us serve up approaches to collecting comparable data about real skills attainment.

In an educational environment consumed by testing, there may be little welcome for yet another one. On the flip side, it could be that school officials would see this kind of assessment as supporting their emphasis on learner outcomes and accountability.

And there's this: thirty-two thousand students taking TRAILS last year is not a small number.

High schools and college librarians need to interact. Incoming freshmen are just three months older than graduating high school students. High schools, with or without librarians, need to know that colleges – especially community colleges – care about preparation levels of their incoming students.

College librarians should show up *en masse* at their local school district board meetings and find ways to interject their solid concerns into the public debate. In the end, this is about where our schools are going and how students are being educated to function in today's increasingly information and technology rich world.

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The Hero's Journey: An Inquiry–Research Model

Thomas Holmes

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Since the publication of the first information literacy model by Stripling and Pitts in 1988, which was followed shortly by Eisenberg and Berkowitz's Big Six model (1990), teacher-librarians have been teaching the research process built on the paradigm of the scientific method. This dispassionate method requires the building of a question, the collection of data, the analysis of that data, the drawing of conclusions, and the presentation of the results.

Although I do not suggest that the scientific method is outdated in any way, I do suggest that teacher-librarians can adopt other models that satisfy the rigors of a legitimate research project and that they can also motivate students to get excited about learning. There is another paradigm already familiar to children and adolescents that can bring passion and motivation into the research process: the hero's journey.

The hero's journey is a narrative structure identified by Joseph Campbell as an archetypal map of the human spiritual quest. Drawn from the realm of myth and religion, the hero's journey was first presented in Campbell's book *The Hero With a Thousand Faces* (1956). The concept reached mass audiences through Bill Moyers's interviews with Joseph Campbell in the 1988 PBS series *The Power of Myth*. Since that time, the hero's journey has been adapted as a key to understanding narratives in books and movies and as a structure for writing narratives such as screenplays. The hero's journey structure was a major influence on George Lucas (1977) as he created *Star Wars*, and it has also been incorporated into a number of movies, novels, and computer games. People are hungry for this story form because it captures so much of what it means to be human.

Reg Harris, a secondary school teacher, and Susan Thompson, a teacher-librarian, have developed a curriculum guide to the hero's journey, based on years of working with students in their literature classes. Their book *The Hero's Journey: A Guide to Literature and Life* (2003) is recommended for anyone wishing to explore curriculum uses for the hero's journey. Reg Harris also maintains a web site, **www.yourheroicjourney.com**, that offers a wealth of resources along with information on the curriculum.

There are several merits to approaching research as a hero's journey. When taken seriously, as it should be, the research process is a journey of transformation in which the researcher leaves behind the comfortable world that he or she knows, gains new knowledge, and then returns—changed in some way by his or her learning. But for many students, the research process is not seen as a dynamic and exciting journey. In fact, most students look at research as an arbitrarily imposed assignment in which they have little—if any—say and which will yield them nothing more than frustration and tedious work.

Connecting students to the hero's journey before doing research engages them on a deep and personal level, enabling them to explore how their education is a part of their

larger life journey. Ultimately, they see how everything they do is connected to that process. When teachers and teacher-librarians become mentors and the research process becomes student centered, students become imaginatively engaged in learning and in life, even as they research a project for school. And in this way, teachers see students as world-class learners prepared to compete in a flat world.

The Goal of the Information Literacy Process

If our highest goal is to create independent lifelong learners who feel passionately connected to their education, then we need to think about how to present the information literacy process so that it supports that goal. We want our students to have a transformational experience with their learning. We want them to see that what they are doing in school is connected to their lives outside of school in a real and immediate way. We want them to think of learning as an enjoyable endeavor rather than as drudgery. We want them to look forward to doing research as an active process, not a passive one, and we want their learning to be relevant rather than arbitrary. Learning that is fun, dynamic, and meaningful counteracts the common student complaint of boredom. To get students to believe that learning is fun, dynamic, and meaningful, we should use a research design that engages their passion.

Make It Fun

Many students, when told that they will be going to the library to do a research project, feel a general dissipation of energy. For some, the prospect of researching online holds out some hope of salvaging the experience, but most students already know what to expect. They will be given an assignment about which they could not care less. The assignment will have absolutely no connection to their lives as they perceive it, and they will largely see it as yet another obstacle as they slog toward graduation and the slim hope of freedom it promises. Most students do not think of research as being fun; they would much rather play a game.

So, *make* research a game, a role-playing game in which students are no longer just students but detectives, explorers, scientists. Teachers can do this by making sure that every research project has a purpose that is not only clear to the student but also allows for building a creative connection to the subject. Encourage students to approach their research from an authentic standpoint, which means, for example, to research a history project as a historian and to approach scientific research as a scientist. When students do this as a game, research becomes fun. By infusing learning with a sense of play, the emotional connections that students make to their learning are increased.

Make It Dynamic

Research can be tremendously dynamic because there are mental fireworks that explode in our brains each time we make a new connection (the *aha!* moment). For instance, when we brainstorm, we metaphorically unleash a storm of ideas. Yet, many students do not feel the dynamism of research directly, and they consider research to be dull and tedious. Help them to experience the dynamic nature of research by getting them to move—physically, emotionally, and intellectually. There is already a dynamic quality

of going to the library; build on that. Get students to move in the library. Using the hero's journey model, students can recognize the path of research as they move through it intellectually. They can anticipate and recognize the challenges and temptations that they will encounter on their journeys, and they will be able to track their progress as they move toward their goals.

One way of doing this is to set up research stations where students move actively from one station to another, completing tasks with time limits. For younger students, the teacher-librarian can design a physical path that students can follow as they conduct research. Sequential research stations can lead students to encyclopedias for background information, to the online catalog to locate resources, to citation worksheets for tracking their sources, and so on.

Make It Meaningful

Never take for granted that students know why they are doing a particular assignment. They are doing it because they are told to do it—not much meaning in that. And, yet, every assignment in a carefully designed curriculum has an important and meaningful purpose that must to be evident to all students. What happens when students do not understand the larger meaning of school? their role in society? their purpose in life? How much can an individual class project really matter? Students who are determined to attend competitive universities or have demanding careers are more likely to take their school assignments seriously because they see personal rewards. How can educators help all students to see their lives as being meaningful, regardless of their future goals? By helping students to define their personal goals.

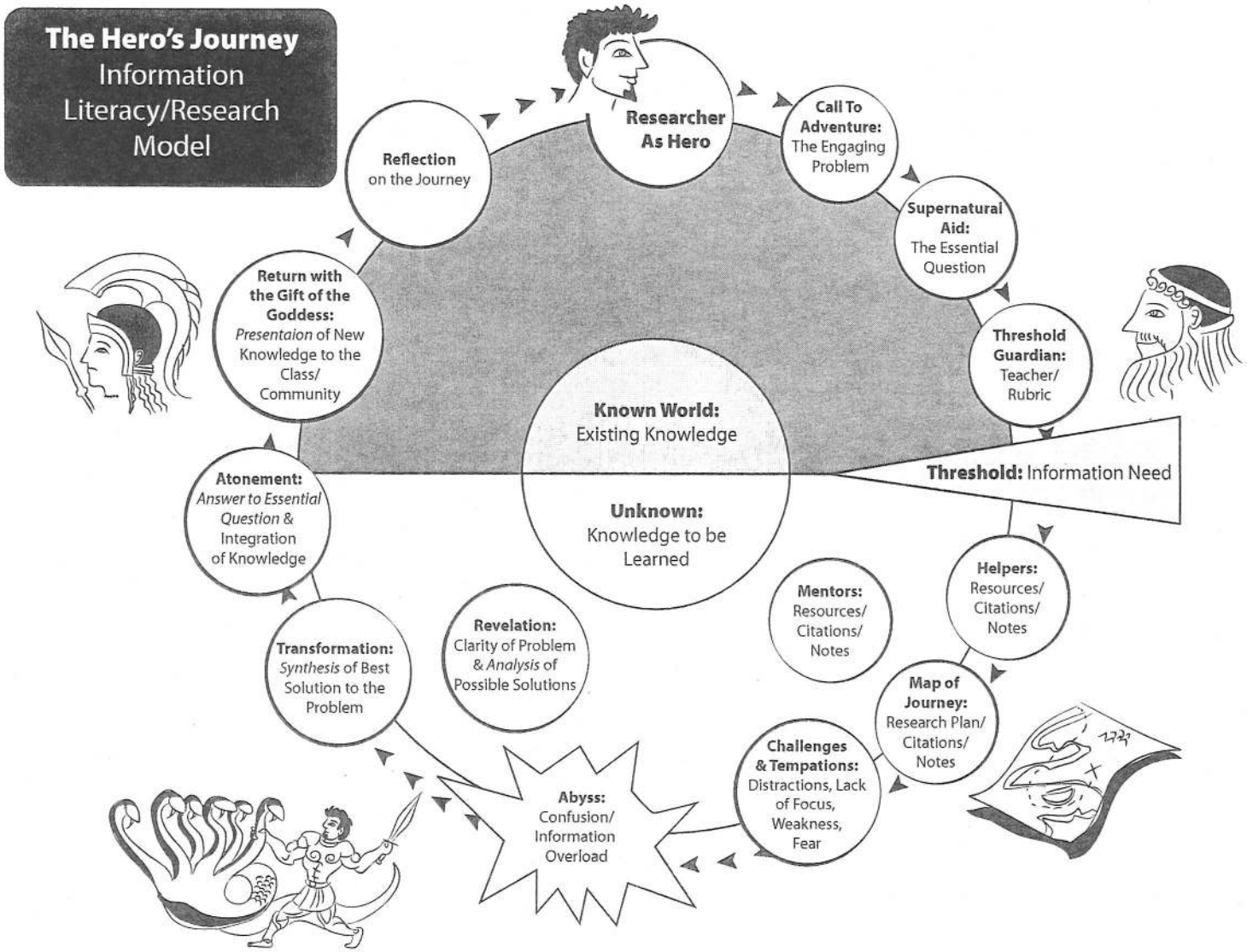
The hero's journey presents a way for students to begin to see their lives as heroic journeys, each a quest for meaning and purpose. By engaging students in the hero's journey, teachers have an opportunity to explore with them what matters most—their lives and their futures—and to help them define their goals. During that exploration, we can powerfully connect the information literacy process as a lifelong empowerment tool that students can use as they go beyond the classroom and the school library.

Games Are Fun, Dynamic, and Meaningful

The hero's journey presents a great model for turning information literacy into the serious game that it is for many in our society, without sacrificing the research skills that we want students to learn. Information literacy is used by researchers to develop cures for diseases, by entrepreneurs to design new products and technologies, and by scientists to work on problems such as global warming. When seen as a hero's journey, a research assignment gives students a new way to think of learning, and it becomes a fascinating challenge.

The Hero's Journey as an Information Literacy Game

To explore the hero's journey as an information literacy game, the stages and elements of the hero's journey must be outlined, and how each of those stages connects to the information literacy process must be identified. The transformation of the hero's journey into a model is pictured in Figure 1 and contains the following stag


The Hero's Journey
Information Literacy/Research Model
Researcher As Hero
Call To Adventure: The Engaging Problem
Supernatural Aid: The Essential Question
Threshold Guardian: Teacher/ Rubric
Threshold: Information Need
Helpers: Resources/ Citations/ Notes
Map of Journey: Research Plan/ Citations/ Notes
Challenges & Tempations: Distractions, Lack of Focus, Weakness, Fear
Abyss: Confusion/ Information Overload
Mentors: Resources/ Citations/ Notes
Revelation: Clarity of Problem & Analysis of Possible Solutions
Transformation: Synthesis of Best Solution to the Problem
Atonement: Answer to Essential Question & Integration of Knowledge
Return with the Gift of the Goddess: Presentaion of New Knowledge to the Class/ Community
Reflection on the Journey
Known World: Existing Knowledge
Unknown: Knowledge to be Learned

The call to adventure. This is something that shakes up the ordinary world of the hero, and it may be perceived as a challenge or need. In the information literacy process, this follows the assigned topic and takes the form of the *engaging problem*, which the student formulates and infuses with his or her curiosity and imagination. It is important for the student to have a creative role in formulating the engaging problem because doing so increases the student's motivation and sense of empowerment. The engaging problem should combine the goals of the assignment and the individual interests of the student.

Supernatural aid. The hero often carries a magical sword or some other object that gives him or her strength on the journey. For the research process, this talisman is the *essential question (EQ)*, a carefully focused guiding question that keeps the researcher on track as he or she moves through the treacherous unknown world of research. It is important that time be taken to create an EQ that is responsive to the assignment and that is a question that can be answered in a sophisticated way, using available resources. Time should be taken in fashioning a good EQ because this is the basis for determining relevant from irrelevant information during research.

The threshold. This is the point where the hero crosses from the known world into the unknown. In research, this threshold is the recognized *information need*, or the knowledge that the researcher lacks to solve a problem. When the student crosses the first threshold, he or she leaves behind the comfortable world and embarks on a quest for knowledge in a new and mysterious world. Making the student aware that this is a predictable part of the journey will help him or her feel more confident. Before crossing the threshold, the hero may have to overcome a *threshold guardian*, who tests his or her worthiness for the journey ahead. The teacher, the teacher-librarian, and the rubric act as threshold guardian. They ensure that the student has a clearly defined EQ, demonstrates an understanding of the rubric, and has prepared a sound research plan that includes an outline of background information, identification of needed information, possible resources, and a realistic set of target deadlines. The rubric and a research plan constitute an initial *map of the journey*. This map reinforces the importance of regularly checking both the rubric and the research plan throughout the project. As each student engages in research, he or she adds to the map through notes and citations, documenting the journey so that others may follow.

Challenges and temptations. Along the way, the hero faces challenges and temptations that impede the journey or cause the hero to abandon the quest. In research, these challenges and temptations may include laziness, procrastination, lack of focus, weakness, fear, distractions, bad information, boredom, the desire to take shortcuts, and a variety of other obstacles. But the hero need not face these challenges alone: *Mentors* (the teacher and the teacher-librarian) provide wise guidance along the way. *Helpers* (valuable resources, good information, tech tools, people resources, and libraries) and the map of the journey (research plan, rubric, citations, and notes) keep the heroic researcher on the true path.

The abyss. This is the greatest challenge that faces the hero and leads directly to his or her transformation. Joseph Campbell (1956) calls this "the belly of the whale," in

reference to the biblical Jonah. In research, the abyss is the point of maximal confusion when the student faces information overload, a tangle of competing and conflicting perspectives that seem to circle back on themselves. This is the point of gravest danger, for the temptation to give up is at its height here. The hero will feel alone and must recognize that he or she needs to slay the dragon that threatens to devour him or her.

Revelation. From this depth, the hero dies and is reborn. The hero moves from a state of dependence to one of independence; ignorance dies and there is a revelation in which the hero sees a new truth and is transformed. For the researcher, this revelation comes when the problem seems to clarify, when possible solutions start to manifest, when analysis takes place, and when the research project begins to move toward completion. At this moment, light seems to penetrate the darkness of the abyss, creating an intellectual epiphany.

The transformation. This is the stage in which the hero becomes a changed being, more powerful, more directed. For the researcher, this leads to the synthesis of the best solution to the problem, often in a creative way.

Atonement. After being transformed, the hero reaches atonement, or "at-one-ment," with his or her new being, new knowledge. The student is transformed through hard work, courage, and confidence to embody the qualities of scholarship. In this stage, the answer to the EQ represents the integration of knowledge and the gift that will be shared with others.

Returning with the gift of the goddess. The process of returning with the gift of the goddess is the reemergence of the hero into the community of the hero's former world. He or she is now forever changed by the knowledge gained. In bestowing that knowledge to the community, he or she can help to transform the world. For the researcher, this is the presentation of one's new knowledge. In a class setting, each student can share new knowledge with the group and then combine that knowledge to answer a *so what?* question or to build a larger perspective on the research topic. This process replicates what actually happens in real-world applications, such as medical research, technological innovation, and policy analysis, where individual researchers combine their knowledge to create new treatments, products, and social policies. The whole becomes greater than the sum of the parts, and each researcher learns that knowledge combined is more powerful than isolated ideas. The hero then *reflects* on the journey just completed, assesses the process and product that the hero and the group have created, and perhaps feels the *call to a new adventure*, a new engaging problem.

Collaborative Presentation of the Hero's Journey

The hero's journey information literacy model can be a powerful focus for transforming a research project. One example of how this might be approached is presented in the following collaborative unit, designed by a teacher-librarian and an English teacher teaching the book *Siddhartha* (Hesse, 1951) to high school seniors.

Together, the teacher and the teacher-librarian select appropriate content standards and information literacy standards. They then build a rubric together that helps students to understand how they will be assessed on knowledge and the research process. Next, they introduce the hero's journey to the students, not by introducing each phase of the model, but by allowing students to discover the hero's journey model by watching the film *Little Buddha* (Bertolucci, 1994). Groups of students watch the film and chart the action or make a model of it; then they relate their models to films they have seen before, such as *Star Wars* (Lucas, 1977).

The teacher and teacher-librarian distribute copies of the hero's journey model (Figure 1) as one expert's interpretation of myth and as the structure of many games. Students compare their models with that of Campbell (1956) and are asked to use the best steps of both creations in examining the path of Siddhartha (Hesse, 1951) and as a quest to discover the nature of a selected world religion. Students help the teacher and teacher-librarian to develop essential questions that will guide their paths through their journeys—for example,

What is metaphysical reality?
Is there another reality beyond the physical?
What is the nature of God?
What is the nature of humanity?
What is our purpose?
What is the problem facing humanity and what is its cause (disease)?
What answer does the religion provide to that problem (prescription)?
What is the path of our spiritual journey?

Groups of students select different world religions for their group research papers and record the answers to the aforementioned questions on a huge matrix on the wall. This matrix allows a *so what?* activity at the end of the research as students compare and contrast the ideas across religions. Finally, students and teachers reflect on their hero's journey through their research, looking for patterns, discussing difficulties and troubles encountered on the journey, and compiling suggestions for all learners as they encounter new challenges.

Conclusion

Utilizing the dispassionate information literacy models based on the scientific method, though providing a structure, often fails to inject an element of passion or caring about the research task at hand. As students discover the structure of the hero's journey and the fact that they are already familiar with the excitement of a quest, they begin to envision how to transform a usually boring assignment into the transforming discovery of new knowledge. The hero's journey model relies on four elements to be successful:

1. the students' discovery of quest elements before being given the printed model;
2. the pursuit of as much knowledge about their topics as they can ascertain to become experts;

3. the record of their journeys for the purpose of documenting their process learning so that they can analyze themselves as efficient and effective learners; and

4. the feeling of transformation as learners—that spark that convinces that learning has intrinsic awards if everyone cares enough to actively pursue his or her own journey.

Guiding students through the research process by using a variety of models holds the promise of helping each student to take control of his or her learning. That is the ultimate discovery: Each student assumes command of his or her learning process rather than simply do the assignment and get stamped on the forehead with a certificate of approval.

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Information Literacy Instruction Model for School Librarians in Russia

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The information age has offered challenges to all institutions in contemporary society. New technologies have made great changes in communications, economics, people's lives, and education. Nowadays no one contests the importance of such a phenomena as information literacy, and everyone agrees that individuals must possess a set of knowledge, skills, abilities and attitudes that allow him or her to find, evaluate, organize and use information effectively to become successful in all kinds of activities and relationships.

Despite a growing body of research dedicated both to theoretical and applied dimensions of this important subject, student's information skills, in reality, are somewhat poor[1]. The analysis of the Program's for International Students Assessment (PISA-2000)[2] shows that Russian students have difficulties when they must compare and evaluate different information sources. Our survey,[3] in which 1060 high school students of the Pskov region took part, revealed that they do not know how to:

- Use the Internet
- Use library tools and technology effectively
- Can't scrutinize resources critically
- Do not often understand what it means to use information analytically.

For them, the main source of information (the only information tool and the favorite search engine) is a Librarian!

Why is this so? We could point out student's low motivation as a main reason. Yes, motivation is tremendously important. But in our opinion the primary cause of low students' information literacy in Russia is that school librarians function ineffectively. Theoretically, the school library is a key link in students mastering information skills. The research findings of Keith Curry Lance[4] have been invaluable to us in noting the connection between school libraries and achievement.

There are more than 60,000 school libraries in Russia, the majority of which are stuffed with qualified professionals. About 70% of school librarians have special pedagogical or library education[5].

Even with the existence of school libraries, an analytical paper prepared in the Library and Media Centers Department of Russian Federation Ministry of Education[6] in 2002, exposed ineffective work of school libraries.

We could group all the causes of this ineffectiveness into two categories: objective (for example, lack of funding, problems with curriculum, librarians' inadequate education) and subjective (principals' underestimation of the school library's role in the curriculum, or lack of librarian's enthusiasm).

On the other hand, our survey (2007) shows that:

- 100% of principals note that a librarian must teach library lessons
- Agree that a modern library lesson has to teach information literacy and not just library skills
- 57% of them are ready to support integrating library lessons into curriculum without any conditions
- 43% will support a librarian who has a plan for an adequate instructional program.

There is definite progress in the situation now. Some school librarians have begun to understand the necessity of mastering information skills instead of library ones. They create and introduce their own programs of information literacy lessons. But still a typical library lesson is bibliographic instruction where traditional methods of teaching are in use.

The main points are:

- The lack of librarian's knowledge that leads to inadequate use of technology in their teaching.
- The lack of information literacy teaching models designed for students to use.
- A shortage of guides and reference materials for librarians (more than 70% of Pskov Region school librarians point it as a main difficulty in their library lessons' organization).

Analysis of the literature as a whole revealed that current approaches in pedagogy have some general positions for instructional processes such as:

- Children's needs and individuality should be in the center of training processes.
- The central element in learning is a student's own experience received through independent activity.
- It is necessary to use a wide variety of information resources during their research work.
- It is necessary to build critical thinking components in their research activities.
- We need to cultivate new relationships between students and teachers.
- We need to build collaboration between teachers and the librarian.

These principles urge us to integrate personal and action components into the learning activities of students and to construct a new model of information literacy instruction in the school library.

The personal component of this model means that the student is in the center of learning, and the teacher/librarian has to keep in mind the student's motives, interests, purposes, individuality, and age. The action component means that students develop their information-analytical skills in a process of independent work with information resources.

So the focal point of the model is a student's independent work for personal knowledge construction, for development of information outlook, and for mastering information-analytical skills under direction and with a help of the librarian. The model recommends active learning methods and creative and imaginative tasks insertion.

Because of the problems with integrating library lessons into the curriculum, we suggest a modular system, where every module includes the teaching and learning skills of information searching, location, evaluation and organization. The librarian is free to use those modules in accordance with the need and opportunities within the school. For example, a librarian might teach seventh grade students five modules spread throughout the school year.

The model consists of three levels: elementary, middle and high school.

The main goal of the first level (for students in elementary school) is to master initial library skills, including information resources, searching and selection, and to help the children develop their abilities to analyze books/texts. This effort includes two modules:

1. Information: its sources and systematization.
2. Work with printed resources as a part of information activity.

The second level (for middle school students) has its main objective mastering strategies of the information-analytical activities and includes five modules. The content of every module includes learning to search, to evaluate, to analyze, and to report information.

The third level (for students of high school) includes one module: "Doing information research in the library."

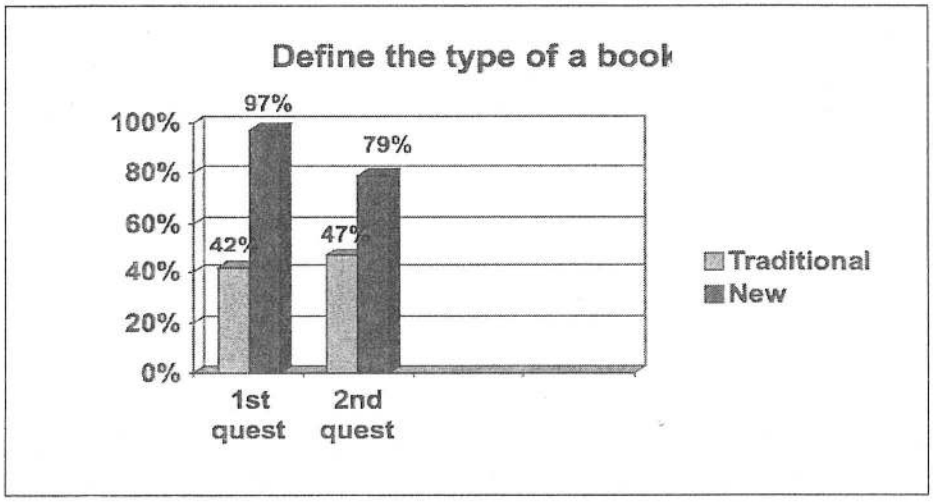
We tried this model in a number of Pskov Region's schools and it seems to be working. As an example, let's have a look at some facts concerning the elementary school experience.

Traditional methods of teaching such as storytelling, illustrations, watching video, and excursions had a place during the lessons. But the major activities of the instruction included games, competitions, work on creating their own books, using encyclopedias, and actually writing a collective encyclopedia. An important part of the instruction was building questions and mind mapping (using cluster schemes) as a prelude to collective encyclopedia construction.

It turned out the new model was successful. Answering the question "What did you discover during lessons?" 52% of kids answered that they gained many interesting ideas about animals; 66% noted that they found out different styles of literature and gained knowledge of how to use vocabulary and encyclopedias.

Assessments revealed a higher effectiveness of the new lessons in comparison with traditional ones.

The following chart shows the results of an assignment where kids were supposed to determine to what type of book (encyclopedia, fiction, science, popular or textbook) given fragment examples.



As for motivation, the survey shows that the lessons were received positively by the kids and librarians. Answering the question "Did you like library lessons?"

- 98.7% of the students of 2-d and 3-d grades gave positive answers.
- 36% of them added "very, very much."
- 90% of 4th grade students gave quite positive answers also.

The main factor, which contributed to positive emotions, was kids' doing independent and creative projects. Their answers to the question, "What was the most interesting thing in your learning?" included

- group work – 71,4%
- creation of the book/encyclopedia – 74%
- invention of a tale (5\th gr) – 76%.

Only 24% of the children thought that the teacher's explanations were an interesting part of the lesson.

Thus, if librarians are ready to become a part of a teaching team of a school, they will really contribute to student's achievement if they use a constructivist approach to teaching.

In conclusion, we'd like to add some words about collaboration. We've made a little survey and it turned out that 71% of teachers of informatics and 100% teachers of elementary schools are ready to collaborate with school librarians. So the kids' information future is in librarians' hands.

Footnotes

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- Doing researches on library services in education (research interests: learning in information-rich environments, school library programs, information literacy, instructional design, information management in learning and teaching).

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She was at the heart of planning and arrangement of a regional conference "Information literacy in educational libraries: problems and perspectives" in November 2006.

She is also responsible for school librarians' professional development. Her activities as an Advisor on school libraries' issues are:

- Organization of Pskov Region school librarians' instructions and refresher courses.
- Promotion of current trends in library and information science for school librarians.
- Design of instructional programs for librarians and its introduction in Pskov Region's schools.
- Promotion of programs to encourage children's free reading in school libraries.

She teaches school librarians some classes, such as:

- "Information literacy instruction in the school library".
- "Information technology and the school library".
- "Organization and management of school libraries".
- "Programs of children's reading motivation".

She is the member of:

- Russian School Library Association.
- Russian Reading Association.
- National Forum on Information Literacy.
- Pskov Library Association.

Currently, she is a Fulbright scholar at the San Jose State University and doing a research "Teaching with Technology: Instructional Design for Effective Teaching and Learning in Your School Library" with Dr. David V. Loertscher

School Librarians, Technology and Instruction to Achieve Standards: Annual Yearly Progress (AYP) Results in Kansas 2005-06 Reading and Mathematics Assessments

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Introduction

In Kansas, our goal is to contribute to the "trinity" of meaningful, useful, and obtainable statistics begun in Colorado at the Library Research Service (LRS) about the importance of school libraries in the nation's educational offerings. We in Kansas are "seizing the moment" to show that school libraries have a direct link to student achievement. We are looking not only at reading, but also mathematics, science, social studies, and writing. A particular focus will be on the alignment of content, library and technology standards.

School library research literature indicates that it is time to change the course of school library impact studies. Recent school library impact studies point to some potential "interventions" that should be studied. In addition to asking some slightly difference questions, our study is focused on one such intervention, that of learning how achievement and learning improve when librarians collaborate with other educators. This data will come not only from available data collected from every school and reported to the National Center for Education Statistics, but also from case studies of schools where student learning exists in a range from high to low achievement of standards.

This five-year study has received approval and support from the Kansas School Library Coalition: Kansas State Department of Education, Emporia State University, Kansas Association of School Librarians, Kansas Association for Educational Communications and Technology, and State of Kansas Library.

http://slim.emporia.edu/kschool/research/index.html

Theoretical Background and Review of Literature

During the past two decades, the relevance of school libraries has been empirically demonstrated in an era when learning has been equated with academic achievement. State departments of education in collaboration with university experts develop academic standards and standards-based tests. Academic achievement is based on high-stakes tests. Scores on these tests are used as a measure of students' and their teachers' academic success. This era has been fraught with concerns that teachers are "teaching to the test." There are concerns that disengaged students are falling behind their Asian peers in academic learning (Steinberg, 1996). The school library has become a potential target for "school improvement" outlined and required in No Child Left Behind Act of 2001 (PL 107-110).

During the past two decades, research has demonstrated that school libraries are a powerful force in today's schools. The first Colorado Study (Lance, Welborn, and Hamilton-Pennell,1993)indicted that school library expenditures were a key predictor of academic achievement. Findings indicated that the amount and level of library staffing, collection size, and the amount of time the school librarian spends playing an instructional role as key library predictors.

The first Colorado study of school libraries was of historic and political importance. According to an interview with Keith Curry Lance of the Library Research Service at Colorado State Library and the University of Denver report by Danny Callison (School Library Media Research website), "Gaver's (1963)vision of a large-scale statistical modeling study was realized by the first Colorado study's usage of schools rather than students as units of analysis and its successful documentation of the persistence of library predictors when controlling for other influential school and community differences (e.g., teacher-pupil ratio, per pupil spending, poverty, adult educational attainment, racial and ethnic diversity)."

In the Alaska study (Lance, Pennell, Petersen, & Sitter, 2000)findings pointed to school librarians as the "information empowered" because they played three critical roles in the learning community, that of teachers, information specialists, and administrators. Statistically significant findings indicated that test scores tend to be higher where there is a librarian; a full-time librarian rather than a part-time one; and a part-time librarian rather than no librarian at all. Higher levels of librarian staffing lead to longer library media center hours of operation; higher levels of library media staff activity; higher student usage, and consequently higher test scores. Among other significant findings was that the more often students received library/information literacy instruction in which library media staff are involved, the higher the test scores.

Oregon's study (Lance, Rodney, Pennell, 2001) demonstrated that reading scores rise with the development of school library media programs. The relationship between the school library media program development and test scores was not explained away by other school or community conditions at elementary and middle school levels (such as school district expenditure per student; teacher/student ratio; average years of experience of classroom teachers; teacher average salaries; community differences including adult education attainment, children in poverty, and racial/ethnic demographics.

The Texas (Smith, 2001) version of the Colorado study demonstrated higher Texas Assessment of Academic Skills (TAAS) performance at all educational levels in schools with librarians than in schools without librarians. On the average, 89.3 percent of students in schools with librarians, compared with 78.4 percent in schools without librarians, met minimum TAAS expectations in reading.

In Iowa (Rodney, Lance, & Pennell, 2002), Iowa reading test scores also rise with the development of school library media programs. The relationship between library media programs and test scores was not explained away by other school or community conditions at the elementary school level or by other school conditions at the middle school level.

Minnesota (Baxter, Smalley, 2003), schools with above average student scores on the grades 3, 5, and 8 reading tests, 66.8 percent were schools where the media specialist worked full-time. Twice as many schools with above average scores had full-time library media specialists. Students reading achievement in elementary and secondary schools was said to be related to increases in school library media spending.

According to Callison's report (School Library Media Research website), "By 2005, the Colorado study model had been replicated and elaborated upon to a greater or lesser extent in Colorado and more than a dozen other states by five different researchers or research teams. Collectively, they studied the impact of school libraries in approximately 8,700 schools with enrollments totaling more than 2.6 million students. These studies elaborate upon the original Colorado study model by identifying specific activities of school library staff that constituted playing an "instructional" role, and considering the potential impact of student performance of library-related technology-specifically networked computers and licensed databases, especially those licensed statewide."

Have these studies made a difference? Lance (School Library Media Service website) reports that a 2005 survey conducted by the Library Research Service where these studies originated (completed by 501 individuals from thirty-six states) indicates that the dissemination of fourteen state studies has been significant in the following ways: 1) Responses to this survey indicate that using this research to advocate for school library programs has affected the relationships of school librarians with both principals and teachers. 2) Respondents reported that becoming familiar with the findings of this research affected their own professional practice. 3) School library programs have been affected in substantial ways by the sharing of this research. We believe this research provides excellent indications of why it is so important to collect meaningful, useful, and obtainable statistics and to share them with Kansas educators and the public.

Almost half of respondents in the 2005 survey (School Library Media Service website) reported that, as a result of sharing the findings, their students now have access to more electronic information (48 percent) and larger collections (45 percent). Two out of five respondents report that classes and other groups now visit their school libraries more frequently (40 percent) and on more flexible schedules (39 percent). More than a third of respondents (37 percent) report increased library visits by individuals (SLMR website). The present study makes use of findings from these studies, and incorporates them into a framework to extend and further explore the relevance of school libraries and student

achievement. It is our hope that through our efforts, sharing of findings will continue to improve relations, resources, student and educator access to information, and student learning and academic achievement.

Timeframe for the Study

We began the Kansas study during the 2005-06 school year because many factors came together at one point in time. These factors include:

- a new five-year assessment window (based on criterion reference testing) in reading, mathematics, writing, social studies (history/government), and science;
    - Kansas Individual Data on Students (KIDS) database for managing student records;
    - revised library-media standards with the addition of technology standards;

- locally administered 8th grade technology assessment; and,

- revised Kansas Quality Performance Accreditation system to meet No Child Left Behind (NCLB) requirements.

This model is an illustration of the merger of content, school library media, and technology assessed standards coming together to form data sources.

Our first data analysis (2005-06 school year data) was in January, 2007. We plan to end this study with 2009-10 data.

Definitions

Adequate Yearly Progress (AYP) - Is a requirement of the No Child Left Behind Act of 2001 (PL 107-110). It is a process for judging whether public schools and districts are on track for achieving 100% proficiency by 2013-14. A school or district achieves AYP by: Every student group must meet or exceed the annual targets in reading and mathematics; participation rate in state assessments must be 95% or more; attendance rate must be 90% or increase from previous year, and graduation rate must be 75% or increase from previous year. (KSDE, 2006-07 Fact Sheet http://www.ksde.org/LinkClick.aspx?fileticket=UTGa2N0m%2fAo%3d&tabid=403).

Standard of Excellence (SOE) - SOE is given for math and reading at the grade and building levels. In buildings with only one tested grade, only a building award is given. To receive the SOE award at the grade or building level that building must make AYP exclusive of the sub-groups. To receive the SOE award at the grade or building level that building must have a QPA status of "accredited." (KSDE, School Improve and **Accreditation** http://www.ksde.org/portals/0/Assessments/Assessment_SOE_2007ReqFrm.pdf).

Fully Licensed School Librarian – In Kansas, a person is eligible for a conditional library media license if she/he has a professional teaching license or a current 5-year certificate, completed the core courses, has an advanced degree, and has passed the PRAXIS school library media content test with a minimum score of 630. (A conditional license is required for participation in the school library media post-graduate internship classes.) To move from a conditional license to a professional license, she/he must successfully complete a supervised internship (on the job), which may be done by enrolling in 2-3 hours a semester during the first year (2 semesters) under the conditional license as a full-time employee. This is the performance assessment for advanced degree programs. (KSDE, Regulations, http://www.ksde.org).

Research Questions

On the basis of what was already known about how students benefit from effective school libraries, our study seeks to extend these findings by analyzing quantitative and qualitative data from schools where students are instructed based on aligned state content, library-media and technology standards for student learning. Our goal is to answer these questions: 1)Do student performances on state assessments improve as a result of instruction based upon State Library Media and Technology Standards that are aligned with state assessed content areas? 2) Is there a positive relationship between student performances on state assessments and students' access to a fully qualified library-media specialist?

Using first year data, we will identify high – low performing schools. To attempt to learn more about how educators can be motivated to help develop and support libraries that help their students – and them – succeed, we will ask school librarians: How are you involved in information literacy instruction including engagement in collaborative lesson planning, development, and delivery? Of particular interest is learning about librarians' role in integration of information and technology literacy into school curriculum.

Methods

We are studying all grade levels, and all Kansas school buildings. During phase one of three, Kansas Licensed Personnel reports were used to determine school buildings with fully-licensed school librarians. Quality Performance Accreditation (QPA) reports of scores by schools were reviewed. Statistical data was used to identify high (met Standard of Excellence) buildings and buildings on school improvement. Licensed Personnel Records and reading and math achievement reports were compared and organized into results charts. Phase two, surveys were sent to 301 school librarians in school's that achieved the Standard of Excellence and employed a fully licensed school librarian. Returned surveys totaled 101 with 4 without complete information and therefore not included. Survey results were analyzed using SPSS software. Phase three, an expert panel of district library leaders was asked to identify schools to participate in case studies(5). Interview questions were completed by participating librarians and reviewed by researchers before visits to schools. Using similar question topics, interviews ranging in length from 50-90 minutes where conducted in schools with educators and/or librarians in the school library. An analytic-inductive process was used to determine themes and issues in interview data.

Findings

Kansas Statistical Analysis

First year data (Table 1.) reveals that there are 926 fully licensed school libraries in Kansas. Of the 1,413 school buildings in Kansas, 1,197 (85 percent) have fully licensed school librarians. (Some school librarians serve two school buildings.) Of 341 school building that earned the Kansas Standard of Excellence, which required Annual Yearly Progress (AYP) in both math and reading, 301 (88 percent) buildings have licensed school library media specialists, and 40 (12 percent) have no licensed school library media specialist. Of the 75 school buildings in Kansas that failed to achieve Annual Yearly Progress (AYP in both Reading and Mathematics), 58 (77 percent) have licensed school library media specialist and 17 (23 percent) have no licensed school library media specialist.

Surveys

To further explore the statistical finding that there exist 301 school building with high achievement in math and reading and that employ fully licensed school librarians, we administered a survey. This survey questioned librarians about their involvement on the basis of Kansas Standards for School Librarians. Of particular interest was the librarian's role in integration of information and technology literacy into school curriculum.

Survey data returned(n=97)from top performing schools (Table 3.) show that 51 percent of teacher librarians were involved, and 36 percent were somewhat involved in collaborative lesson planning that includes instruction of Kansas library, technology and content area performance standards. Only 9 percent reported no involvement. This statement is also supported by 79 percent of school librarians who are teaching library skills to classes in the library that connected to something the teacher is teaching in the classroom. Rather troubling is the finding that despite this collaborative work to integrate information and technology literacy into school curriculum, 28 percent of school librarians are not using a curriculum map for lesson planning delivery and to track student achievement of standards through formative and summative assessment of standards. The 35 percent of school librarians who are somewhat using curriculum mapping is a promising indication that this practice is emerging.

Case Studies

To further explore the statistical finding that there exists a combination of high achieving schools in math and reading with and without school librarians and low achieving schools in math and reading with and without school librarians, we conducted case studies. We visited five school libraries in a large metropolitan school district, which has a combination of all four data patterns (Table 2). The schools selected were: Buckner Performing Arts; Hyde International Studies/Communication Elementary Magnet; Allison Traditional Middle Magnet; Hamilton Middle School; and Pleasant Valley Middle.

We feel it is particularly important to first acknowledge this district's comprehensive instructional and technical support for school libraries. We feel that this district has been extremely responsive to library-related factors determined by empirical studies to have positive impact on student achievement. For example, they have on-going

professional development for teachers and staff; secure grant funding to improve and maintain collections; operate a high-tech materials ordering and processing center; offer online access to information for use by students and educators; maintain an instructional technology website for the district; publish curriculum guides; and support university-based program for teacher-librarian licensure.

Bucker Performing Arts School. This school met the Standard of Excellence in both math and reading. Although they reported to KSDE that they did not have a school library media specialist, in reality, they employed a licensed substitute (.40) and a part-time student cooperative worker (.60) who was preparing to become a school library media specialist. When asked about adequate staffing, the licensed substitute responded "I believe having one teacher-librarian operating two elementary school libraries is not adequate staffing. I believe children are not being given the opportunities they deserve to maximize their student learning."

Hyde International Studies/Communication Elementary Magnet. This school's purpose is to emphasize international content and communication skills. The librarian reported that she does not teach in the content classes but rather has a "focus in my lessons on the specific standards that need further instruction, based on my communications with the classroom teacher. I instruct with enrichment to aide students' knowledge area of specific topics." About technology she said, "We have integrated technology into every part of our curriculum, both within the classroom and during library classes. Our students are actively involved in learning about the programs and resources that encourage their learning."

Allison Traditional Middle Magnet. This school's purpose is to emphasize the basic curriculum and more. The school librarian spoke about the many project-based assignments that students undertake as part of the magnet "rigor." When asked about the role of technology in student learning, she said, "We use technology on a daily basis in the library. Students use computers for finding a book or to research topics in the online databases made available through Kan-Ed. I use a Smartboard to teach researching and library skills to classes."

Hyde International Studies/Communication Elementary Magnet and Allison Traditional Middle Magnet met the Standard of Excellence for both math and reading and employed fully licensed school librarians. Parents and students self-select to enroll in these magnet schools. We learned from visiting these magnet school libraries that each school has a rigorous focused curriculum.

Hamilton Middle School. This school is on school improvement (3 years) for both math and reading and did not have a licensed school librarian. Our interview revealed that the school had employed a teacher who is working on her school library certification (school resource teacher). At this location, 93% of the student body is on free and reduced school lunches. There was 100% turn over in student enrollment during the 2005-06 school year. The librarian said, "I think we have yet to 'hook' some reluctant readers. Many of them feel hindered to checkout only what they can read for AR points. We also have so much mobility that I may start helping them find what they want to read, only for them to move to another school." She said, "The school is like a revolving door. Many kids do not know where they will sleep tonight. Kids are members of gangs.

Many students are living with grandparents, staying in hotels, and some sleeping in cars." "Kids just need to survive and saving face is most important over learning. Some want to learn. But they think if they show that they want to learn, they are being weak."

Pleasant Valley Middle. This school is on school improvement for math and reading and employs a fully licensed school librarian. This school has a high ESOL population and is a low income school. The school librarian said, "ESOL students do not have vocabulary and prior knowledge needed. We are speaking English to them and they don't have books they can read. Much of the time we only see students for about six weeks and then they go back to Mexico. While here, students are scared, hungry, and sleepy." The librarian concluded that there are many special resources for students at the school, but the needs are extremely great.

Conclusions

Preliminary findings support the statement that student performance on state assessments improve as a result of instruction based on state library media and technology standards that are aligned with state assessed content areas. We found statistically significant librarian involvement in: 1) collaborative lesson planning that includes instruction of Kansas library and technology and content area performance standards. In addition to math and reading, school librarians are involved in units of study in the areas of language arts, science, and social studies. 2) teaching of library skills connected to something the teacher is teaching in the classroom. 3) teaching of math and reading in media lesson instruction in the library. Content instruction was informed by the content teacher who was considered by the librarian to be the content expert.

Preliminary findings support the statement that fully licensed school librarians contribute to student learning and achievement. We observed this to exist in the areas of math and reading. However, we found evidence of major societal barriers to learning in low achieving schools that cannot be solely overcome by a fully licensed school librarian. Barriers included mobility, poverty, and language issues that are compounded by a superimposed timeline for improvement that does not take into account the students' needs. This is consistent with every Colorado-style study in which the strongest available predictor of test scores has been socio-economic conditions. We agree that because the economic variable is so strong, and because it confounds the effects of so many other variables of interest, new questions and new methodology for determining librarians' contributions to student learning and achievement are needed.

Next steps

Data analysis during the second year, 2006-07 will investigate school libraries in schools with mid-range achievement scores. We have schools with test scores that are neither high nor low. We want to explore the middle range in terms of library staffing, services, collaborative instruction, resources, and other factors. We will conduct additional case studies with other large, metropolitan districts, and mid-size and small districts. Findings from high-, middle-,and low-range schools will be compared.

Statistic data collection will continue and mirror the collection and analysis procedure of the first year. This is likely to create a longitudinal analysis and a

significant picture of the presence of a fully-licensed school librarian and school achievement in multiple content areas.

We will consider another approach that will identify a group of schools that have never had a fully licensed school librarian. One school or group of schools could possibly introduce a new fully licensed librarian and another group would continue without fully licensed librarian. A year later, we could then compare the test scores. This would make a stronger case for cause-and-effect.

We will revise our survey of high achieving schools to include questions that emerge from first year data and to more clearly learn what it will likely take to motivate educators to help develop and support libraries who help their students and them succeed.

We will contact school administrators to learn more about why they do not employ fully licensed school librarians.

We will collect artifacts that can be disseminated across the state. For example, we have already discovered models for collection development for English Language Learners; expertise in using Technology Rich Classrooms; and instructing teachers and students how to use data bases.

The University of Kansas Center for Educational Testing and Evaluation (CETE) and the e-Learning Design Lab (eDL) have worked with math educators from across the state of Kansas in the development of the Blending Assessment with Instruction Program (BAIP) in mathematics. The goal of BAIP is to provide assistance to teachers in aligning their mathematic instruction with the standards and assessed indicators in grades 3, 4, 5, 6, 7, 8, 9, and 10 with the ultimate goal of enhancing the achievement of students in mathematics. BAIP includes over 270 lessons for teachers and 410 online independent study tutorials for students. BAIP is being developed for science, reading, and social studies and will include school library media and technology standards. This has powerful implications for our goal of integration of information and technology literacy into school curriculum.

We have created a sample tool to assist schools in determining their own approach to teaching and assessing information and technology literacy by the 8th grade. We expect to use findings from this study to further develop this and other instructional and assessment tools.

Table 1.

2005 – 2006 Report Based On Kansas State Department of Education Data

*463,480 students in Kansas			
*1,413 school buildings in Kansas			
*1,197 school buildings in Kansas with fully licensed school library media specialist			
*59 school buildings in Kansas reported no school library media specialist			
*157 non-reporting school buildings (do not have a school library; data not reported accurately; or waiver not required)			
*341 school buildings in Kansas earned Standard of Excellence (Annual Yearly Progress in both Reading and Mathematics) ••301 have licensed school library media specialist ••40 have no licensed school library media specialist			
*75 school buildings in Kansas failed to achieve Annual Yearly Progress (AYP) in both Reading and Mathematics. ••58 have licensed school library media specialists, and ••17 have no licensed school library media specialist.			

* estimates based on KSDE Accountability reports http://www.ksde.org/

Table 2.

Year One Case Studies (April 2007) of High Achievement With and Without School Library Media Specialists and Low Achievement With and Without School Library Media Specialist

Large Metropolitan Area – Wichita Public Schools, USD 259 http://www.usd259.com/default.htm
Met Standard of Excellence in Mathematics and Reading - No School Library Media Specialist • *Buckner Performing Arts, Wichita (made AYP 06-07)
Met Standard of Excellence in Mathematics and Reading - With School Library Media Specialist • *Hyde International Studies/Communication Elem Magnet, Wichita • Bostic Traditional Magnet Elementary Magnet, Wichita (made AYP 06-07) • *Allison Traditional Middle Magnet, Wichita (made AYP 06-07)
Low Annual Yearly Progress – On school improvement for Mathematics and Reading AYP – No School Library Media Specialist • *Hamilton Middle School, Wichita • Marshall Middle School, Wichita • Mead School, Wichita
Low AYP – On school improvement for Math and Reading AYP With School Library Media Specialist • Caldwell Elementary, Wichita (made AYP 06-07) • Curtis Elementary, Wichita • Jardin Middle, Wichita • *Pleasant Valley Middle, Wichita

All public information from Kansas Department of Education http://www.ksde.org

*** Site Visits**

Table 3.

Survey of Integration of Information and Technology Literacy into School Curriculum by Fully Licensed School Librarians (n=97)

	Yes	Somewhat	No	N/A
Librarian taught library skills independent of what was going on in the classroom.	51	19	20	7
Librarian taught library skill to classes connected to something the teacher was doing in the classroom.	76	14	2	5
Teacher brought groups to the library to do research and was pretty much independent of librarian.	25	37	28	7
Librarian collaborated with the teacher in planning, teaching, and assessing a unit of instruction based in the library.	61	24	7	5
Librarian is involved in collaborative lessons that includes instruction of Kansas library and technology, and content area performance standards.	49	35	9	4
Librarian uses a curriculum map to track student achievement of standards through formative and summative assessments.	27	37	29	4
Librarian targets reading and math achievement in media lesson instruction.	41	34	18	4
Librarian has a role with teachers in using KSDE formative assessments.	33	32	28	4

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How Students, Principals, and Teachers Benefit from Strong School Libraries: The Indiana Study

Keith Curry Lance

The Indiana study—How Students, Principals, and Teachers Benefit from Strong School Libraries—explored qualitative issues impacting test scores, most concerning the perceptions of library media specialists (LMSs), principals, and teachers. In Fall 2006, an LMS-nominated and self-selected sample of 293 library media specialists (LMSs), 99 principals, and 422 teachers responded to surveys. The findings of these surveys expand our understanding of the nuances of the relationships between the three above-mentioned educator types and how those relationships benefit not only educators, but also students.

Sources of Learning about Libraries/LMSs for Principals and Teachers

Principals and teachers learned about libraries and LMSs from a variety of sources.

- Predictably, on-the-job experience in their positions was the most frequently reported source (91.3% and 93.9%, respectively).
- Principals were also likely to rely on informal communication with their LMS (76.8%), their own experience as teachers (69.7%), and personal experience (51.5%--e.g., their own or their children's experience as students).
- Teachers also tended to rely on informal communication (79.2%) and personal experience (73.1%) far more often than other sources.

Value of Libraries/LMSs to Principals

Almost all responding principals reported considering it essential or desirable that

- the LMS and teachers design and deliver instruction collaboratively (99%),
- the LMS be appointed to key school committees (96%), and
- the LMS provides in-service opportunities to faculty (97%).

Nine out of ten principals also reported considering both flexible scheduling of library access (94%) and regular meetings between the principal and the LMS (87%) as either essential or desirable. Almost two-thirds of principals (63%) considered it essential or desirable to address the instructional role of the LMS when interviewing prospective teachers at their schools.

LMS-Teacher Involvement

Three out of four responding teachers (73%) reported that their LMSs offer them instructional design resources at least weekly or monthly.

Approximately half reported four activities happening at least weekly or monthly:

- classes visiting the library on a fixed or flexible schedule (52% each),
- teachers themselves taking the initiative to ask LMSs for resources, and
- teachers accompanying their classes to the library (52% each).

Four out of five responding LMSs reported the occurrence of four activities on at least a weekly or monthly basis:

- classes visit the library on a flexible schedule (83%),
- the LMS offers instructional resources to teachers (81%),
- teachers accompany their classes to the library (78%), and
- teachers ask the LMS for instructional design resources (78%).

Three out of five reported such frequent occurrence of two activities: classes visiting the library on a fixed schedule (61%) and teachers asking for help in learning new information-seeking skills (57%). About half of LMSs reported that, on a weekly or monthly basis, they initiate collaboration on instruction with teachers (52%) and they provide in-service learning opportunities to teachers (48%).

Teacher and Principal Perceptions of LMS Roles

Among both teachers and principals, the most popular roles of LMSs were

- reading motivator,
- instructional support staff,
- teacher, and
- instructional resources manager.

More than two-thirds of respondents in both groups identified their LMS with these roles. Other roles associated with their LMS by most teachers and principals included: in-service provider and school leader.

Assessments of Teaching to Information Literacy Standards

Nine out of 10 principals assessed their schools' teaching of information literacy in particular as excellent or good. When collaborating with each other, LMSs and teachers agreed with them in similar proportions. Still, more than four out of five LMSs and teachers self-assessed their solo-teaching of information literacy as excellent or good. Similar, though somewhat more modest, results were found for independent learning and social responsibility standards.

Impact of LMS, Principal, and Teacher Perceptions on ISTEP+ Results

Across grade levels, better-performing schools tended to be those whose principals placed a higher value on:

- LMSs providing in-service opportunities to classroom teachers (proportional increase in test results of 29.5% from schools whose principals placed a lower value on LMS as in-service provider to schools whose principals placed a higher value on that role),
- regular meetings between themselves and their LMSs (16.9%),
- having their LMSs serve on key school committees (10.2%), and
- collaboration between LMSs and teachers in the design and delivery of instruction (7.8%).

At the elementary level, schools averaged better test results where there were:

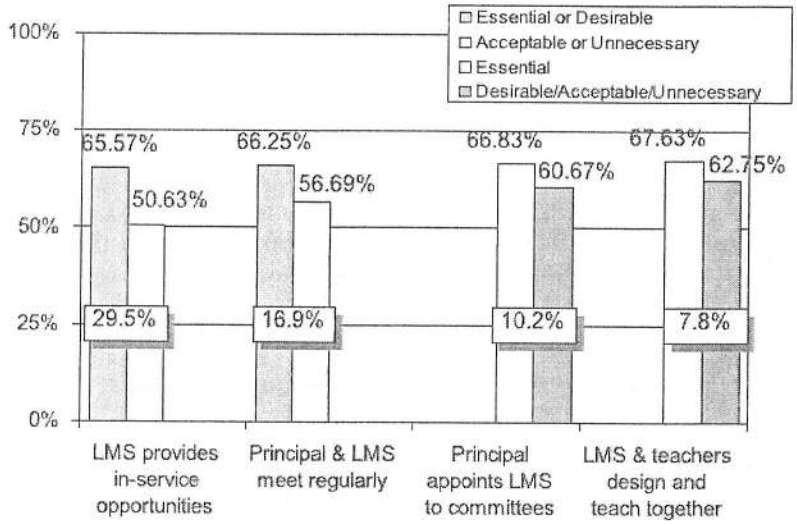
- LMSs who believed that their principals and teachers see them as school leaders, curriculum designers, fellow administrators (in the case of principals), and fellow teachers (in the case of teachers);
- teachers who reported collaborating with LMSs more frequently at their own initiative, and who believed that they teach to information literacy standards better when they engage in such collaboration; and

- both LMSs and teachers were more familiar with the document that correlates information literacy and academic standards.

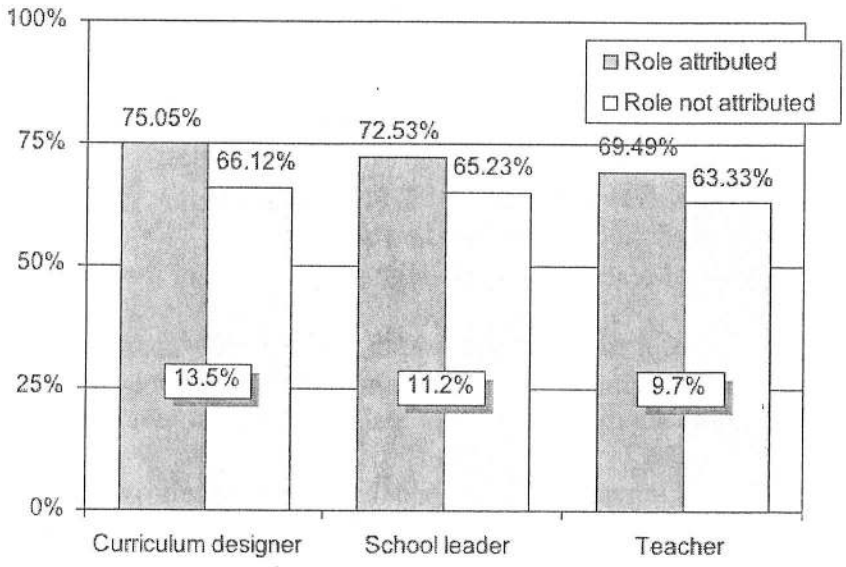
Both elementary and middle schools tended to perform better on tests where LMSs took the initiative, on at least a weekly or monthly basis, to provide their teachers with resources needed to design instruction.

Like elementary schools, high schools tended to have better test results where teachers reported that they initiate collaboration with LMSs on the design and delivery of instruction at least weekly or monthly.

ISTEP+ Results (3-Grade Average) by Value of LMS Activity to Principal



Third-Grade ISTEP+ Results by LMS Role Attributed to Elementary Teachers by LMS



Sizing Up America's School Libraries

The First Annual Report on the AASL Longitudinal Survey of School Library Media Centers

Keith Curry Lance
Consultant
RSL Research Group

Outline

- The Plan
  - Reasons for project
  - Designing questionnaire
  - Determining whom to survey
- The Response
  - Promoting survey
  - Assessing response
- The Results
  - Overall
  - By school level
  - By enrollment range
- Results in Reno
  - School type (charter, special)
  - Region, setting, poverty
  - Selected states
  - Independent schools
- What's Next
  - Report/access plans
  - How to gain more input
  - How to increase response
  - Trend analysis
  - Further reporting plans

The Plan

- Reasons for project
  - Long-term dissatisfaction with lack of data from NCES
  - "Relative deprivation" (models of ACRL & PLA)
  - AASL Research & Statistics Committee interest
  - AASL Strategic Plan
  - Feasibility & affordability of online (vs. paper) survey

The Plan

- Designing questionnaire
  - "20 questions" limit
  - Precedents of state surveys (especially "Colorado" study states)
  - Input from AASL Board, Research & Statistics Committee, Independent Schools Section

The Plan

- Determining whom to survey
  - Regular public schools
  - Independent schools
  - Wish for representative national sample

The Response

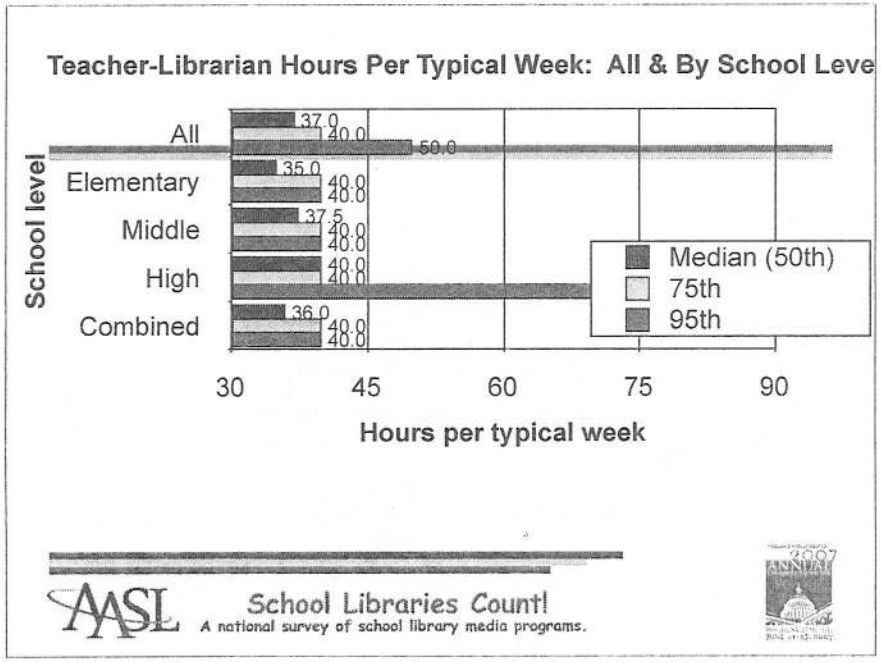
- Promoting survey
  - AASL events at ALA Midwinter & Annual
  - AASL staff, e-mail lists
  - AASL Independent Schools Section
  - AASL Chapters & Affiliates, state e-mail lists
  - Interested parties
  - Contractor mailings to stratified random sample of public schools nationwide

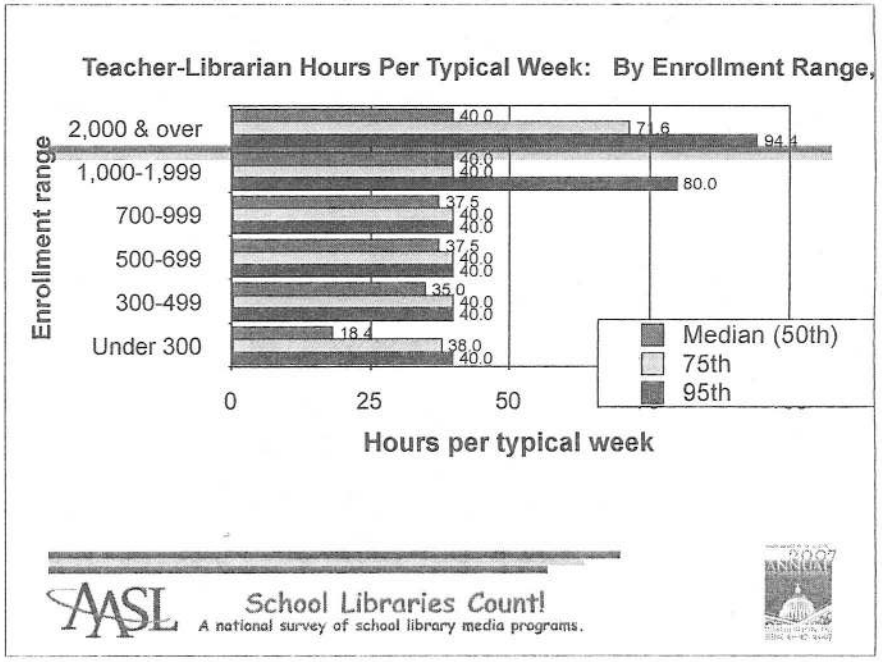
The Response

- Assessing response
  - Over 5,000 responses initiated
  - Over 4,500 responses completed
  - Almost 4,000 regular public schools
  - Over 200 independent schools
  - Preponderance of responses generated by AASL membership (directly or indirectly)

Public School Results

- Library staff (TLs, total)
- Library staff activity (prep, teaching, budget)
- Library hours (total, flex)
- Library collection (copyright, format)
- Library/networked computers
- Library usage per typical week (individual & group visits)
- Annual library expenditures


Teacher-Librarian Hours Per Typical Week: All & By School Leve
School level
All
Elementary
Middle
High
Combined
37.0
40.0
50.0
35.0
40.0
40.0
37.5
40.0
40.0
40.0
40.0
36.0
40.0
40.0
Median (50th)
75th
95th
30
45
60
75
90
Hours per typical week
AASL
School Libraries Count!
A national survey of school library media programs.


Teacher-Librarian Hours Per Typical Week: By Enrollment Range,
Enrollment range
2,000 & over
1,000-1,999
700-999
500-699
300-499
Under 300
40.0
71.6
94.4
40.0
40.0
80.0
37.5
40.0
40.0
37.5
40.0
40.0
35.0
40.0
40.0
18.4
38.0
40.0
Median (50th)
75th
95th
0
25
50
Hours per typical week
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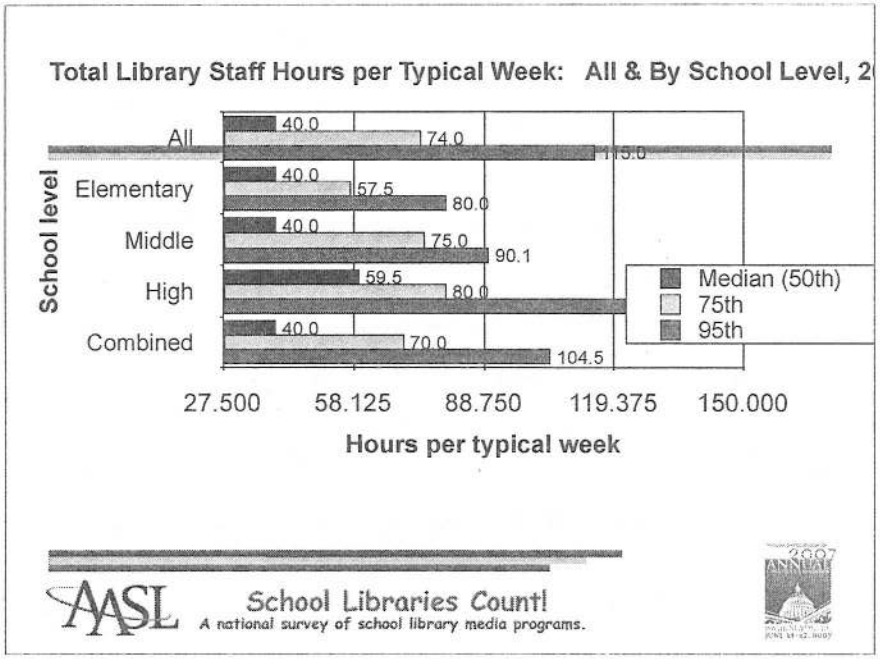
Total Library Staff Hours per Typical Week: All & By School Level, 2
School level
All
Elementary
Middle
High
Combined
40.0
74.0
115.0
40.0
57.5
80.0
40.0
75.0
90.1
59.5
80.0
40.0
70.0
104.5
Median (50th)
75th
95th
27.500
58.125
88.750
119.375
150.000
Hours per typical week
AASL
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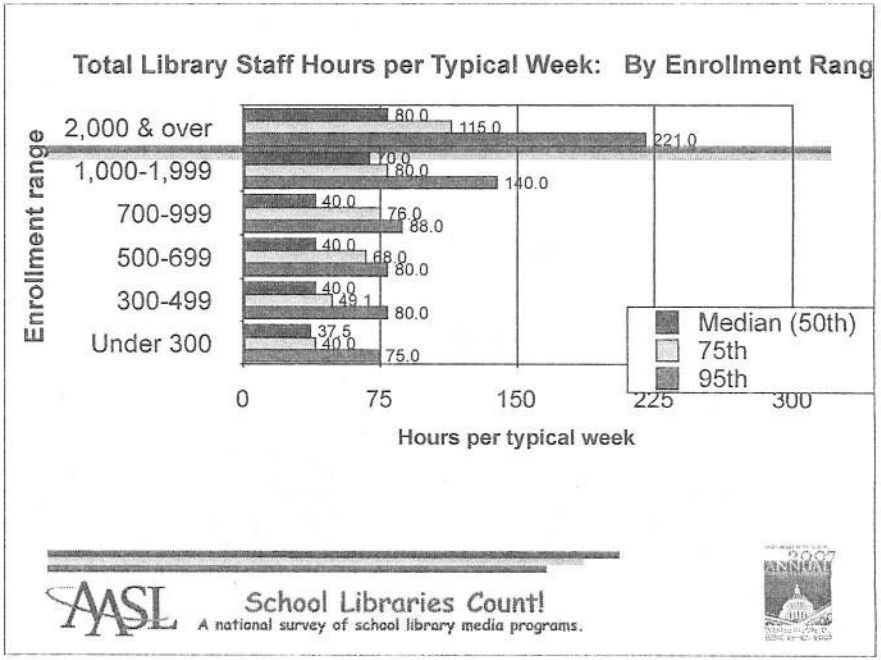
Total Library Staff Hours per Typical Week: By Enrollment Rang
Enrollment range
2,000 & over
1,000-1,999
700-999
500-699
300-499
Under 300
80.0
115.0
221.0
70.0
80.0
140.0
40.0
76.0
88.0
40.0
68.0
80.0
40.0
49.1
80.0
37.5
40.0
75.0
Median (50th)
75th
95th
0
75
150
225
300
Hours per typical week
AASL
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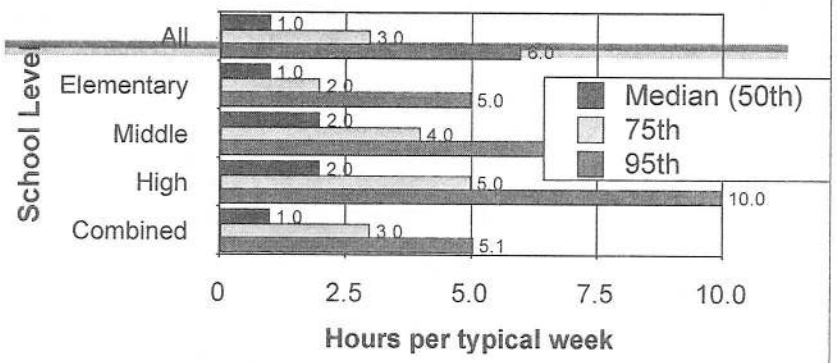
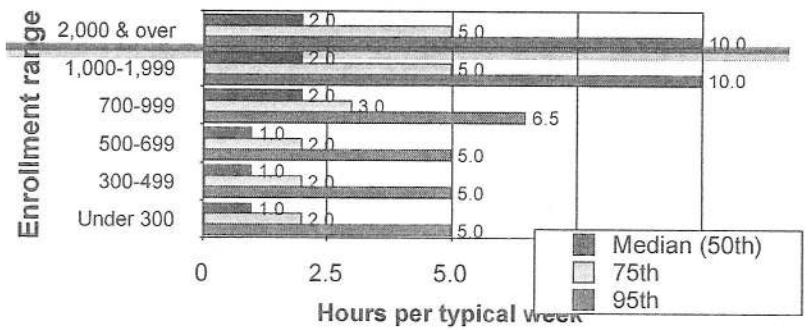
A national survey of school library media programs.

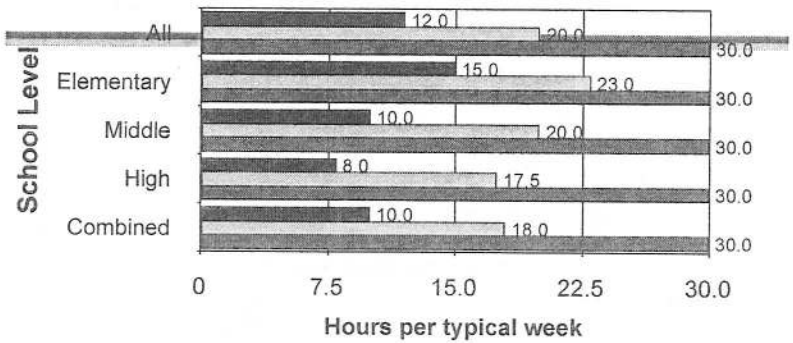
Weekly LM Staff Hours Planning With Teachers: All & By School



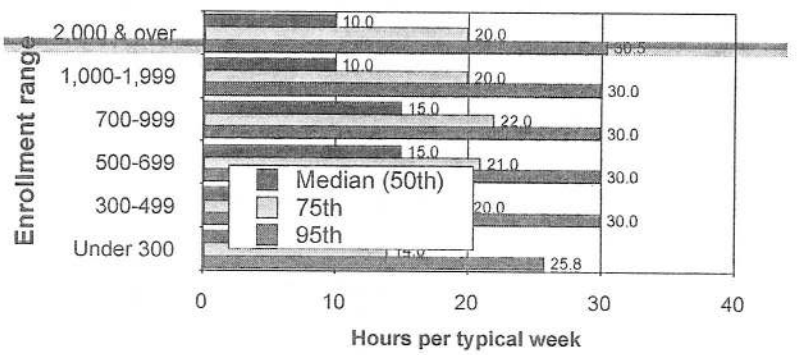
Weekly LM Staff Hours Planning With Teachers: By Enrollment Ra



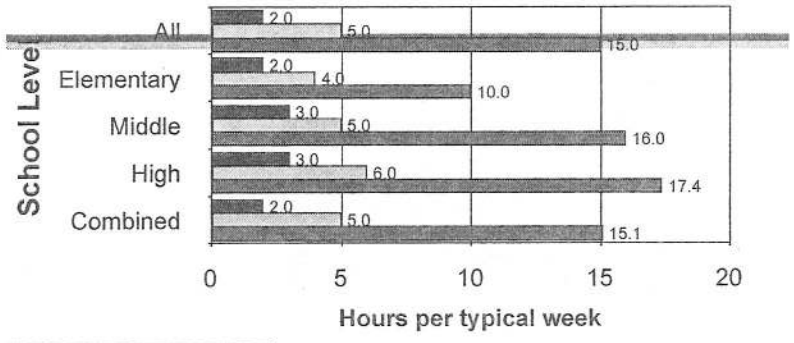
Weekly LM Staff Hours Delivering Instruction: All & By School Le



Weekly LM Staff Hours Delivering Instruction: By Enrollment Ran

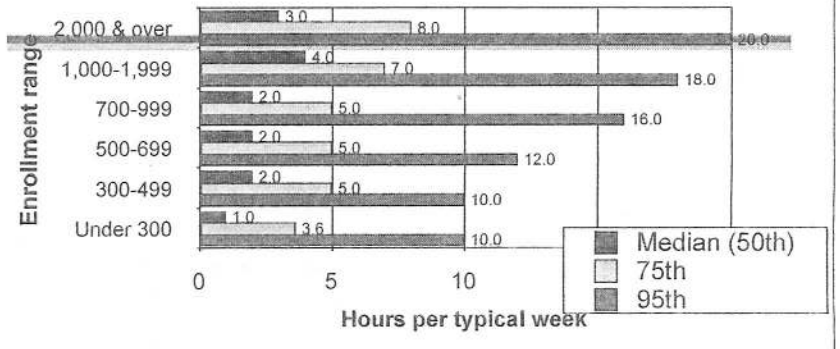


Weekly LM Staff Hours Overseeing Budget: All & By School L



School Libraries Count!
A national survey of school library media programs.

Weekly LM Staff Hours Overseeing Budget: By Enrollment Range



School Libraries Count!
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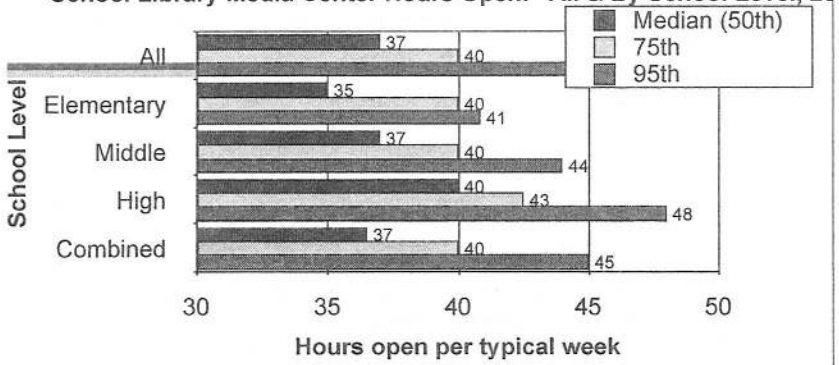
School Library Media Center Hours Open: All & By School Level, 20



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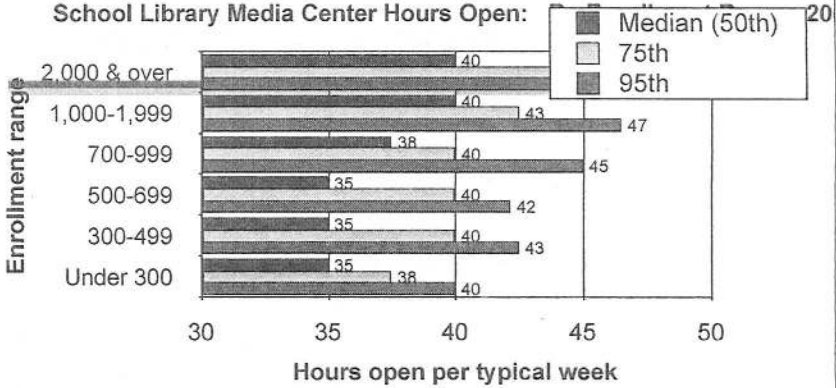
School Library Media Center Hours Open:



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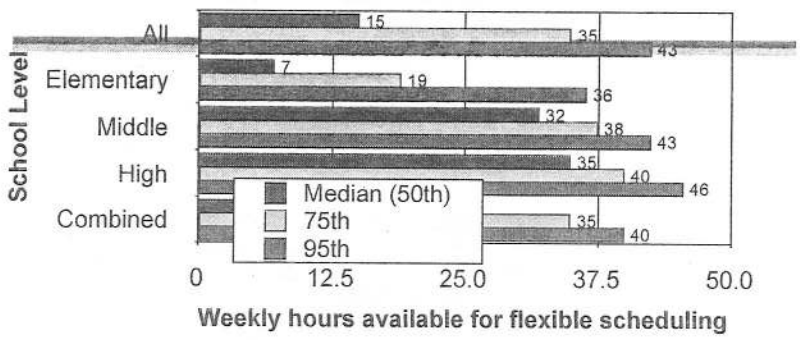
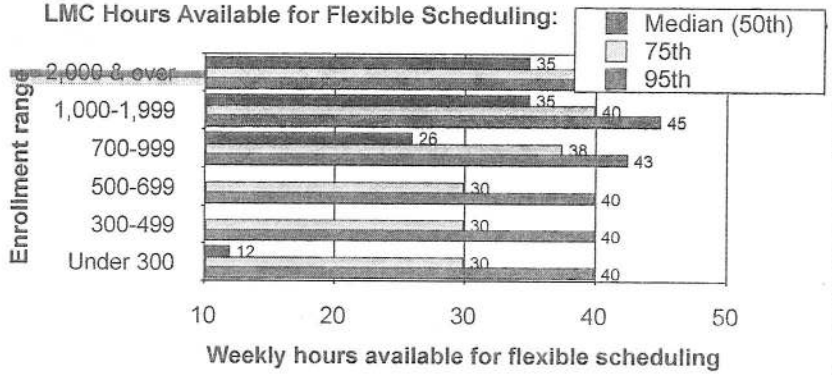
LMC Hours Available for Flexible Scheduling: All & By School Level,



AASL School Libraries Count!
A national survey of school library media programs.

LMC Hours Available for Flexible Scheduling:



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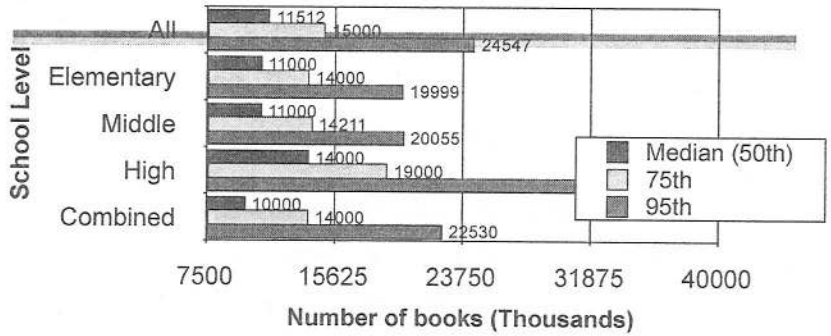
Library Book Collection (Books in Thousands): All & By School Leve



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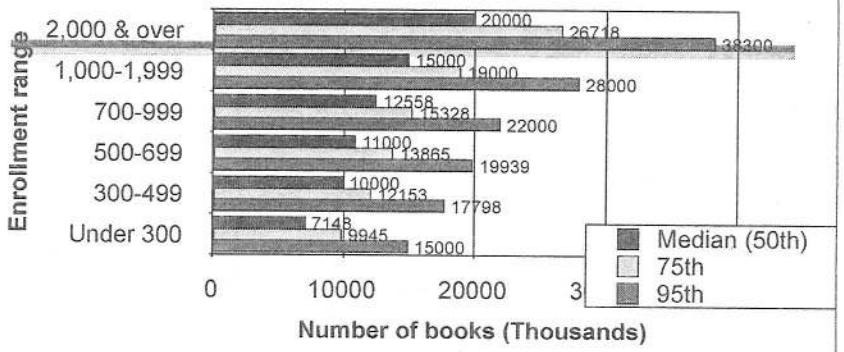
Library Book Collections (Books in Thousands): By Enrollment Ran



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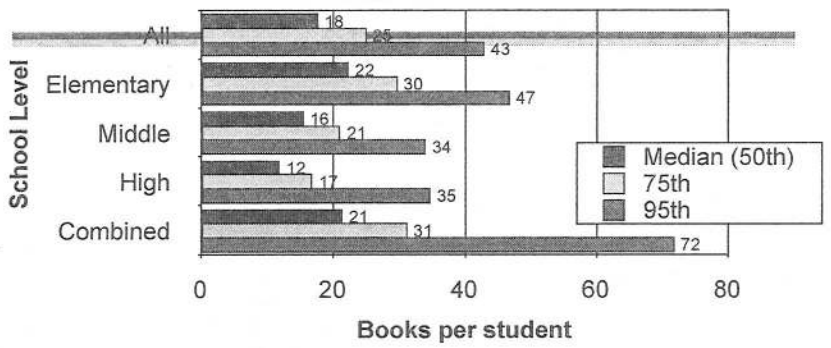
Books per Student: All & By School Level, 2007



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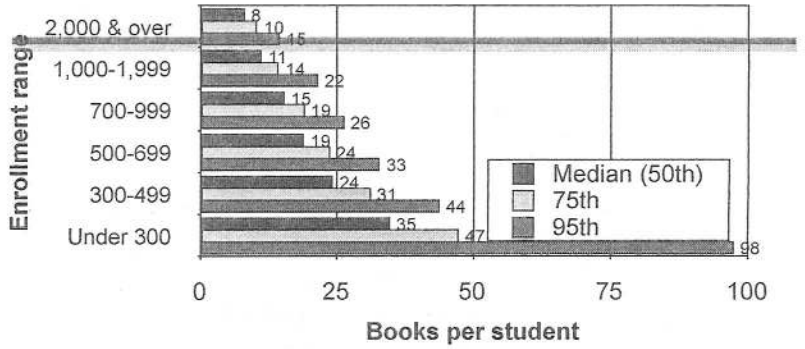
Books per Student: By Enrollment Range, 2007



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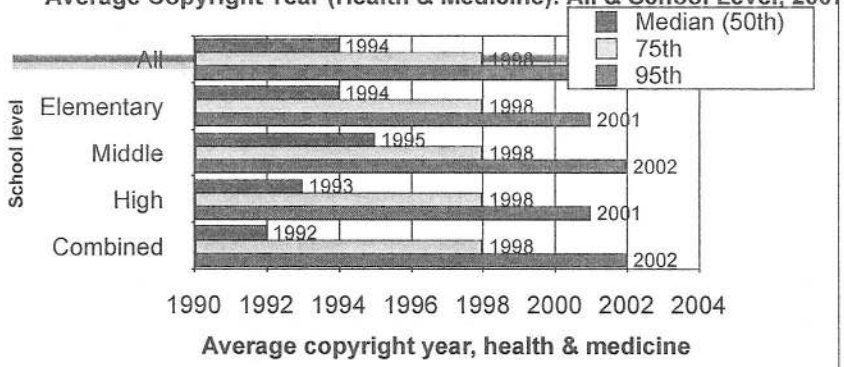
Average Copyright Year (Health & Medicine): All & School Level, 2007



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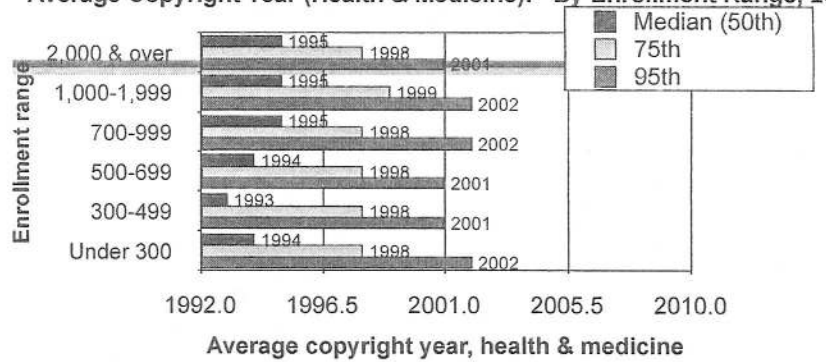
Average Copyright Year (Health & Medicine): By Enrollment Range, 20



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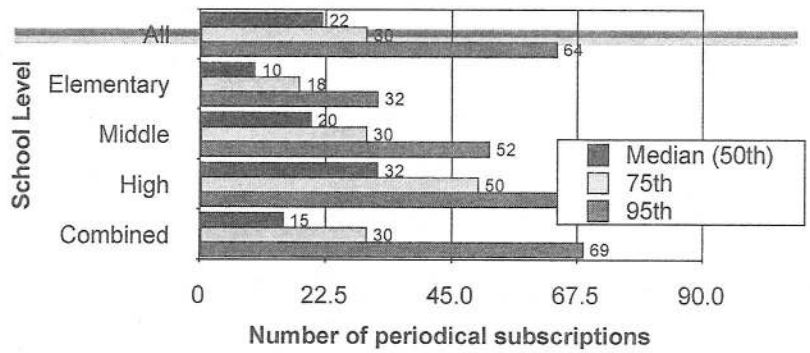
Periodical Subscriptions: All & By School Level, 2007



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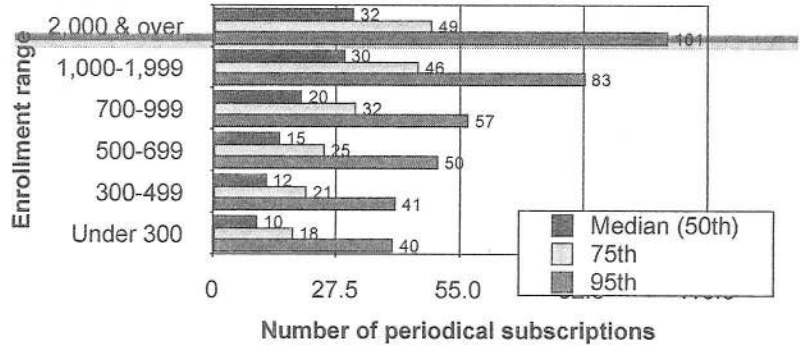

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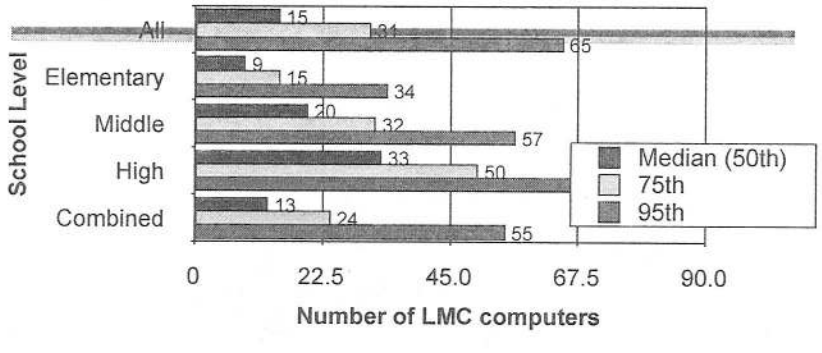
LMC Computers: All & By School Level, 2007



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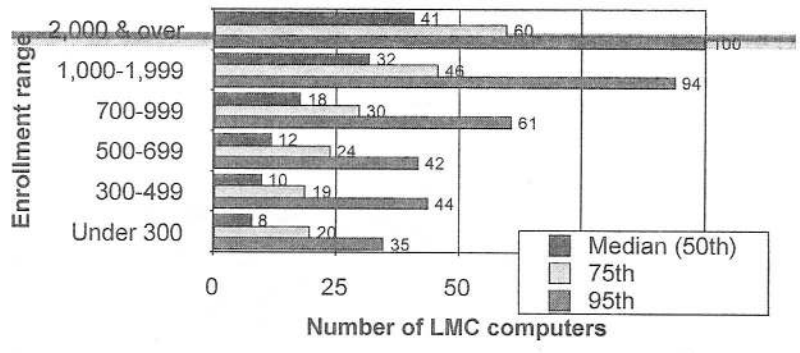
LMC Computers: By Enrollment Range, 2007



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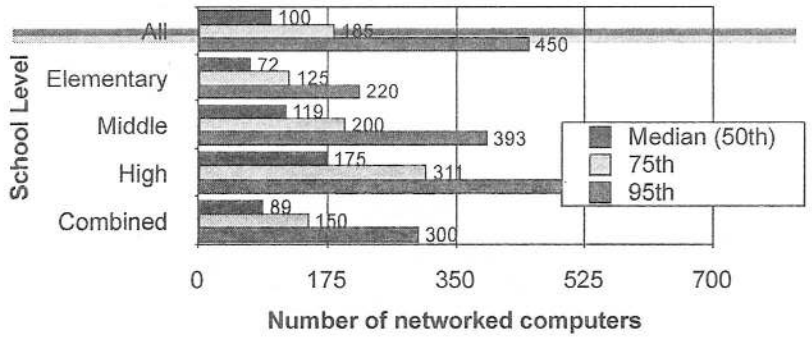
Networked Computers: All & By School Level, 2007



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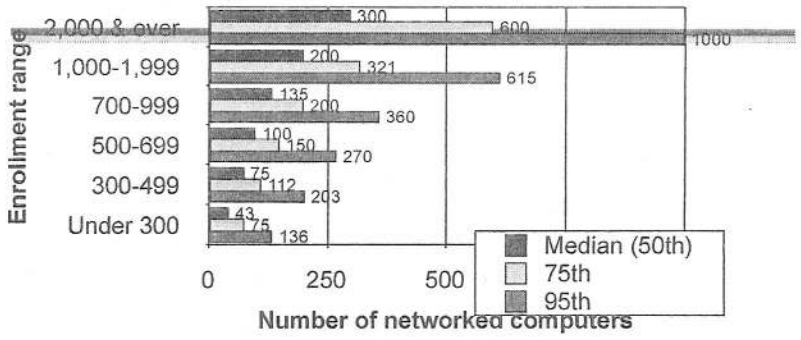

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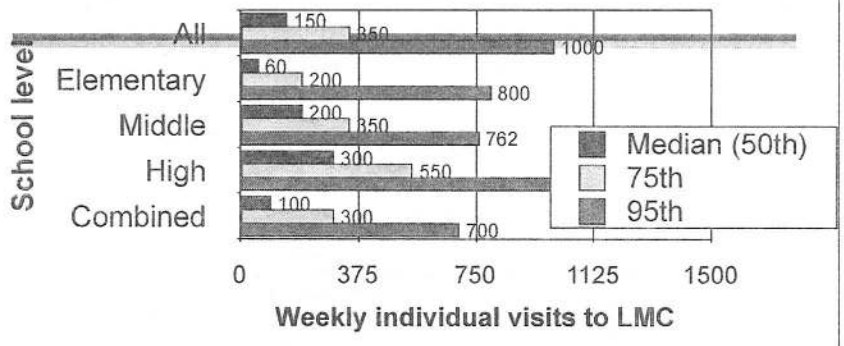
Individual LMC Visits: All & By School Level, 2007



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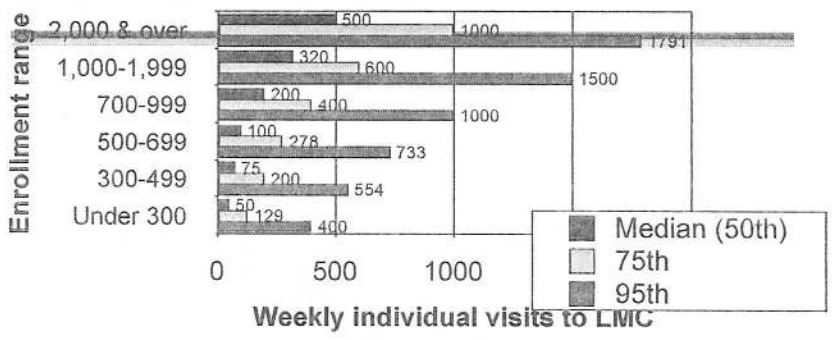

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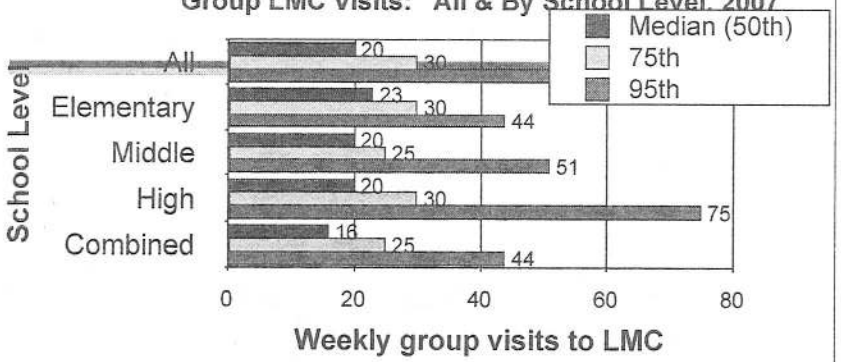
Group LMC Visits: All & By School Level, 2007



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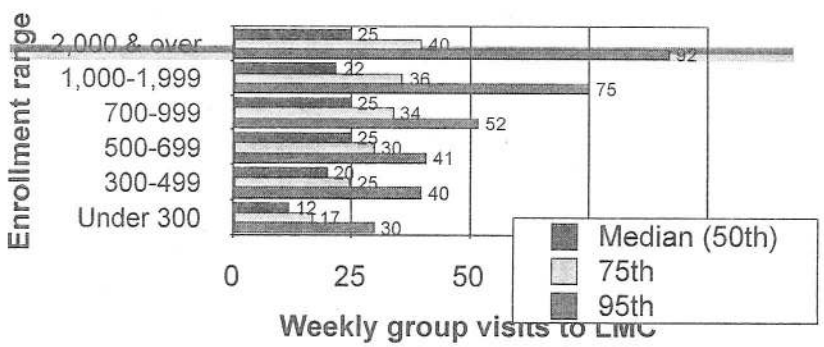
Group LMC Visits: By Enrollment Range, 2007



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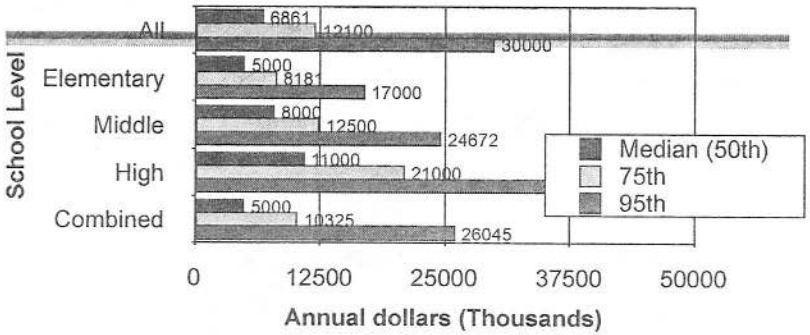
Total LMC Expenditures: All & By School Level, 2007



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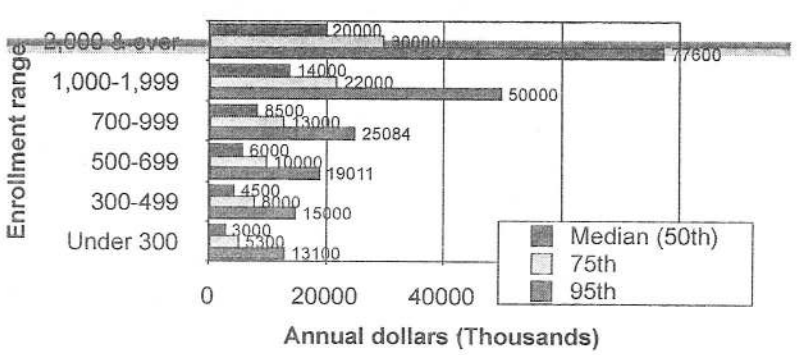
Total LMC Expenditures: By Enrollment Range, 2007



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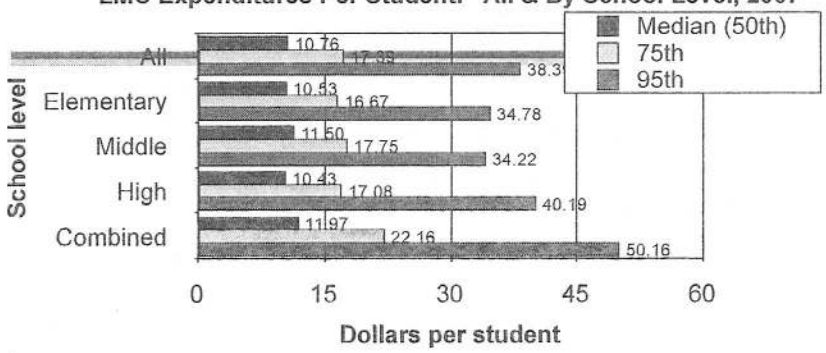

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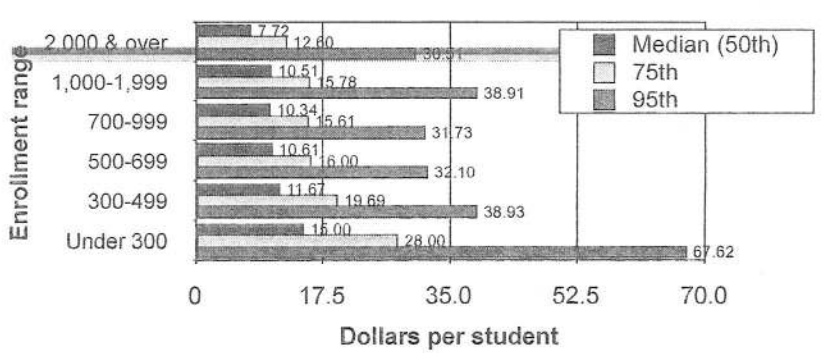

School Libraries Count!
A national survey of school library media programs.

Results in Reno

- School type
  - Regular public schools
  - Charter schools
  - Special education schools
  - Vocational-technical schools
  - Other special schools (alternative, magnet, online)

School Libraries Count!
A national survey of school library media programs.

Results in Reno

- Region (Northeast, South, Midwest, West)
- Setting (metropolitan status)
- Poverty Status (National School Lunch Program eligibility)

School Libraries Count!
A national survey of school library media programs.

Results in Reno

- Independent schools
  - AASL's Independent Schools Section (ISS)
  - Types:
    - Religious (parochial, diocesan, Jewish)
    - Religious independent
    - Independent
    - Others types: Alternative (Montessori, Waldorf, International); Military

Results in Reno

State	Number	State	Number
CA	473	ID	165
MD	345	OR	155
PA	334	OH	138
FL	249	IL	130
NC	231	WI	127
TX	212	NY	109
TN	193	NJ	104
VA	174	SC	102

2/3 of states provided 3/4 of responses

What's Next

- Online tool to be developed
  - Available on subscription basis
  - RFP in progress
- "Print" report
  - Similar in size & appearance to **School Libraries Work** and **The State of America's Libraries**
- Free products & tools on AASL website
- Expect update at AASL Reno

What's Next

- How to gain more input
  - Annual programs at ALA Annual
  - Regular programs at AASL National
  - Programs by AASL Chapters & Affiliates
  - Presentations to AASL Board & selected committees
  - Requests of other key players

What's Next

- How to increase response
  - Reconsideration of who universe is
  - Appeals for increased state-level support
  - Efforts targeted to specific under-represented groups (e.g., charter schools, independent schools)

What's Next

- Trend analysis
  - Possibilities for examining year-to-year change from year two forward
  - Eventually, long-term trends

Contact Information

- Beverley Becker, AASL Deputy Director: bbecker@ala.org
- Marcia Mardis, Chair, AASL Research & Statistics Committee: mmardis@wayne.edu
- Keith Curry Lance, RSL Research Group (contractor): keithlance@comcast.net

What of the Future for School Library Media Programs?

Dr Ross J Todd
Associate Professor
Director, MLIS Program
Director of Research, Center for International Scholarship in School Libraries (CISSL)
School of Communication, Information & Library Studies (SCILS)
Rutgers, The State University of New Jersey

We have been in the school library business now for half a century. It's time to re-think everything. Here are just a few questions I will pose to Treasure Mountain attendees. There are more coming.

Research and the School Librarian

Why do we bother doing research? If we had a professional praxis test on school library research, would school librarians pass the test?

Social Networking

Some recent research suggests that kids are engaging in highly collaborative and creative activities in online spaces, yet schools, and school libraries, do the rhetoric about the potential for social networking to play a positive role in students' lives and tend to recognize educational opportunities, but evidence would suggest that a small number of schools use social networking for professional purposes for example: collaborative projects; wikis for ideas sharing and collaborative development of documentation. And most schools seem to have stringent rules against nearly all forms of social networking during the school day: block inappropriate sites; limit or block access to social networking sites, chat, IM, bulletin boards, blogs etc. How should school libraries be re-engineered / re-designed in response to the collaborative, shared, social learning environments that appears to be the real world outside school?

Lenhart, A. 2007. Social Networking Websites and Teens: An Overview. Pew / Internet Report Available at http://www.pewinternet.org/pdfs/PIP_SNS_Data_Memo_Jan_2007.pdf

National School Boards Association Creating & Connecting//Research and Guidelines on Online Social – and educational – networking. 2007

Information Literacy

It might be said that school libraries contribute to the plagiarism problem. Do they? Some evidence suggests that school librarians teach mostly about finding and accessing and evaluating information, rather than teaching then to do something with the found

information. Without the provision of intellectual scaffolds to enable students to create new

knowledge, are school libraries simply contributing to the information glut problem, rather than solving it?

Learning and the Library and the Library Facility

How do we reconstruct the school library as a knowledge commons, where emphasis is really on the development of deep knowledge? How do we construct a library and an intellectual space that engages kids in the collaborative and networked virtual information spaces, as well as the networked and collaborative physical place?

Collaboration

School librarian – classroom teacher collaboration is more a myth and reality. How do we get over it?

Impact of School Libraries

What are the added values / benefits / impacts of a school library? While there is considerable research examining the relationship between school library and student achievement, what else does a school library do for kids? How do school libraries contribute to workplace readiness, living and working in a globalized and net work world? How do they contribute to the personal, social and cultural development of people?

Reading

While school librarians have advocated that one dimension of their role centers on development of reading for personal interests and pleasure, and developed programs around reading of literary texts, what is the role of the school library in the development of reading for comprehension (focus on informational non-fiction texts)? How can a school librarian impact on reading for comprehension to meet curriculum goals? What instructional and service interventions work? How can improvement in reading comprehension be measured?

Times Are a'Changing

Joyce Valenza

"You'd better start swimming or you'll sink like a stone, For the times they are a changin'" Bob Dylan

When my blog reached its first birthday in August 2005, I got to thinking about how dramatically the library and the classroom have changed for so many of us in the last couple of years.

Then I got to thinking about how incredibly dramatic the change has been since I first graduated library school in 1976 , and when I had to do that masters degree over again for my educational credential in 1988. While I learned programming the first time around and personal computer applications the second time around, the current rate of change has altered the landscape so dramatically I would not today be able to survive with those ancient library school skills.

Clearly, the changes occurring between 1976 and 1988, when the PC and automation were becoming ubiquitous in libraries, had nothing on the changes we were to see in the last five, no the last 2 years!

Retooling was essential for me. It is essential for the survival of the profession.

We cannot expect to assume a leadership role in information technology and instruction, we cannot claim any credibility with students, faculty, or administrators if we do not recognize and thoughtfully exploit the information and communication paradigm shifts of the past two years.

I attempted to chart the changes I've observed to help plan for the future. I invite you all to help me refine this chart.

How life has changed since I left library school

How should practice respond and change?

Things that have changed	When I left library school preservice (1976/1988?)	2006/ 2007 School Year	Implications for Future? Learners, Educators, Schools? Library Profession?
Most used reference sources	Encyclopedias and almanacs, Readers' Guide, CD-ROM Databases, books, magazines, newspapers	Wikipedia, Google, Ask.com, MapQuest, subscription databases, ebooks	Need to introduce a fuller information toolkit. Need to promote lesser known or used tools—subscription databases, alternate search tools, ebooks. Potential for an **information underclass**! Need to help students determine where to start. Need for high quality federated searching to cut through the noise? May need to promote the value of books for some projects. Top 25 2.0 Search Tools (Online Education Database) Streaming Media Need for pathfinders! As wikis? Can we push online reference widgets to learners?
How we most often communicate	Letters, phone calls, email through Pine and other text-based systems	Cell phones, texting, email, IM, Skype (VOIP), social networking (MySpace, Friendster, FaceBook, Elgg), telecommunications, blogs, wikis, Nings. Web goes two ways Pew Studies—students are online, students are bloggers, students are content creators! See my Networks:	Librarians need to communicate with users using emerging tools. Blended service and instruction. Two-way communications. Opportunities for interaction with parents. Geographic barriers removed. Learner-centered/learner empowered environment.
Service	Reference service at the desk, in-person reference interview, Mudge *Guide to Reference Books*	Students expect immediate interaction and 24/7 information service. Students expect independence in information access—on home PCs at any hour of day. Some libraries and states offer IM and email reference	Users expect information and services to be immediate. Promote/create real-time online service. Need for blended service in the form of Web sites, blogs, pathfinders customized to meet students' information and developmental needs. New pathfinders in the form of wikis and blogs inspire feedback. Need for extended just-in-time, just-for-me guidance/intervention. Libraries should aim to be a window on students' home desktops. Provide, or link to 24/7 sources.

			Virtual library as customized information landscape Can libraries *widgetize* services?
Options for student projects, learning	Student projects: term papers, Hypercard, dioramas, essays, speeches, debates, etc.	Term papers, essays, speeches, debates, etc. PowerPoint, websites, learning objects, podcasts, video editing, Internet2, wikis, blogs, digital storytelling, WebQuests, I2 and teleconferencing bring authors, experts, performances in and connect teachers and learners with remote partners. Learning can be face-to-face, online synchronous, asynchronous. Growth of distance learning options. Video sharing Students are film producers—YouTube, Google Video. In schools—severe PowerPoint overdose.	Librarians must partner with classroom teachers to create projects relevant to 21st century learning using emerging tools for communication. What is the best communication tool for the project? How can we use these new tools for teaching, practicing, and reflecting on information fluency? Blogs and wikis help students track the research process? **Rethinking PowerPoint** Presentation Zen PowerPoint Extreme Makeover Cliff Atkinson: Beyond Bullets Tom Peters on Presentation Excellence Gettysburg Address PowerPoint VoiceThread GoogleDocs
What we know about how learners learn	Move away from fact memorization, right answers, textbook reliance, and reporting to constructivism. Move away from "frontal" teaching, group projects, inquiry, essential questions	Influence of brain research / cognitive science. Learning is: multidisciplinary, social, multi-intelligence (Gardner), potential for gaming/simulations, brain needs to "pattern", every brain different, learning styles vary, importance of building on prior knowledge, application of knowledge, real world, growth of relevant service learning, learner-centered, community-centered, problem-based	How do we use what we know about learning to partner with teachers to create effective learning activities? What role will collaboratively created e-books, new media, a.i., Second Life, similations, and gaming play? How will we design learning environments that work, that engage? Coming of Age (Terry Freedman)
Finding out about books and other new materials?	Bestseller lists, recommendation lists from organizations, book review journals,	Amazon & other online booksellers, push technology suggestions, mega-bookstores, book trailers, book review blogs	Need new strategies to promote and solicit suggestions for materials. Interactive forms? Encourage student/teacher book blogging? Student-produced book trailers?
Understandings about intellectual property	Copyright laws, fair use	Copyright laws, Multimedia Fair Use Guidelines, Tassini decision Creative Common Licence, Open Source, copyright-friendly portals for sharing content	Need to teach new world of information ethics. Copyright options are expanding for creators. How do we behave responsibly? How to we ensure students know their options and can find copyright friendly materials when they create and share media? Is Fair Use shifting? Copyright Friendly Images and Sound Learn How to Use Copyright and Stay Legal in the K-12 Classroom (CyberPlayGround) Music Law

			Creative Commons' Podcasting Legal Guide Lessig's Free Culture Flash Presentation UNESCO's Handbook on Copyright and Related Issues for Libraries Bloggers Beware Student Bloggers FAQ EFF Legal Guide for Bloggers Intellectual Property and Free Speech in the Online World White Stripes Creative Commons Video Boucher and Doolittle Introduce the FAIR USE Act of 2007**
Students and intellectual property / academic integrity	MLA (and other) books and handouts, teachers and librarians check for plagiarism by searching through print sources	Tools like turnitin, bibliographic format available on the Web, citation generators, Google as an originality check.	Need for instruction and guidelines in respecting intellectual property in a cut-and-paste, mash-up world. Need to define appropriate levels of collaboration. Copyright Friendly Images and Sound MSA 21st Century Information Fluency Project NoodleTools, Son of Citation Machine, BibMe
Evaluation	Resources limited. Evaluation simplified by formal, vetted publishing process. Print sources—books, magazines, journals, newspapers—well-know to teachers and librarians. Relatively easy assessment of credibility, authority, relevance, scope.	Resources vast—choices among formats explode. Multiple voices available. Anyone can author content. New challenges in assessing credibility and authority. Read/Write Web 2.0 facilitates immediate power of the citizen as author. No more black and white evaluation rules!	Need to teach about how to evaluate for particular information task. Notions of authority are shifting. Need to annotate to explain some information choices. How do we learn to evaluate blogs, wikis, shared video, podcasts, etc? MSA 21st Century Information Fluency Project Evaluating Blogs
Understandings about cataloging	Sears and LC Subject headings	Sears and LC, and access to computer cataloging services. Taxonomies vs. folksonomies Move from tree hierarchy to pile of leaves (Weinberger: Taxonomy and Tags, Everything is Miscellaneous) Meta--tagging, tags, folksonomies. Emerging strategies for tagging non-print media—images, film, music. Richness of hyperlinks	Need to rethink ineffective cataloging schemes to recognize power of keywords and tags that make sense to users. Cookery—India no longer plays!
How we get news	3 major news channels, newspapers, weekly news magazines	24-hour news, 100s of channels on television, websites, blogs, push news, access to global news sources for multiple perspectives, news portals gather content in varying formats	Need for pathfinders to lead learners to news sources they will need for particular projects. Need to help students set up information spaces, with feeds, to push news to themselves.
Standards	Information Power released	IP2 released in 1998	How do we use new tools to deliver both

	in 1988—new focus on information literacy	ETS releases ICT Literacy Assessments, Partnership for 21st Century Skills, ISTE's NETS for Students, Teachers, Administrators, release of state and national content area standards	content and process standards? Draft Framework for ISTE NETS•S Refresh ISTE NETS Refresh 21st Century Readiness AASL Draft of 21st Century Standards
Intellectual freedom	Books have been challenged and sometimes banned from collections	Challenges of all sorts. DOPA threatens access to Web 2.0 tools, filters required for e-rate funding	Protecting student access to information more necessary and more complicated in a political environment motivated by fear. Is Google blocked? YouTube? Blogs?
What our collection looked/looks like	Books, magazines, filmstrips, cassette tapes, 16 mm movies, software on disk	Books, ebooks, streaming audio, streaming video, blogs, Webcasts, podcasts, wikibooks, open source, software & Web-based apps	Need to create signage, guides, pathfinders for new additions to "collection." How will we lead students and teachers to them most effectively? Will our resources be largely wasted?
What our space looks like	Traditional shelves—books, magazines, videocassettes, reference workstations	Much of reference is moving online, video and audio streaming, still need for fiction and nonfiction	Increasing need for group, creative production space—iMovie, podcasting, blogging. Library as group planning/collaborating space. Library as performance, presentation space. Library as event-central, telecommunications, remote author/expert visit space. Library continues as study/reading/gathering/cultural space.
What we loan	Books, videocassettes, audiocassettes, magazines	Traditional items & ebooks, digital audio, laptops, memory sticks, digital cameras, etc.	Budgets and policies need to recognize students' new needs for learning materials.
Need for retooling / How we retool	Every five years or so Professional journals, conferences	Frequent! Professional journals, conferences, virtual conferences, Webcasts, professional blogs, collaborating through professional wikis and nings.	Learning happens between annual conferences. Blogs publish professional news, new strategies before it can travel through traditional publishing process. (Essential strategies for keeping up!) Attend conferences without traveling—viewing keynotes online. Use tools like Hitchhikr, visit sources like EdTechTalk Models of student and teacher work at the Edublog Awards
Typical assessment	High stakes testing	High stakes testing + growing recognition of need for alternate, authentic project-based assessment	Need to move schools beyond knowledge needed to pass one or two high stakes tests. Students need to solve problems, make decisions, and communicate effectively with traditional and emerging tools.

Manifesto

Joyce Valenza

Here's a meme I put together last summer for my blog. The background: I had just returned from our state summer leadership conference. This year, the theme was paradigm shift with the goal of creating a new strategic plan.

What resonated with me were the comments of one younger librarian, fresh out of library school.

I'll try to paraphrase her essential question.

> *We're all doing different stuff. The other school librarians I know are not doing what I am doing. Some don't even know about the state databases. Some maintain websites and blogs; others do not. Some have seriously retooled; others have not. In the 21st century, what does a school librarian do?*

So I enlisted my blog readers to help me create an aggregated response. I got no comments.

So, Treasure Mountain participants, I ask you in turn:

What should we be doing right now? What should we be planning for? What does a 21st Century librarian look like?

I'll get you started by presenting the list I presented at ISTE and in my blog last summer. Let's work together to build a manifesto. What would you add or change?

You know you are a 21st century school librarian if you . . .

Reading

- Consider new ways to promote reading. You are exploring downloadable audio books, or Playaways. You (and your students) are creating digital booktalks or book trailers.

Teaching and Learning

- Understand that learning can (and should) be playful.
- Understand that learning should be authentic.

- Understand that learning can be multi-modal, media-rich, customized to the needs of individual learners.

- Think Web 2.0. You know the potential new technologies offer for interaction–learners as both information consumers and producers.

- Are concerned about what you can do that Google or Wikipedia cannot. What customized services and instruction will you offer that will not be outsourced to Bangalore?

- Are concerned that, when it matters, your students move beyond information *satisficing*. They make solid information decisions.

- Share new understandings of searching, and evaluation, and analysis and synthesis, and digital citizenship, and communication.

Digital School Library and the Information Landscape

- Make sure your learners and teachers can (physically & intellectually) access developmentally and curricularly(?) appropriate databases, portals, and websites, blogs, videos, and other media.

- Think of your web presence as a knowledge management for your school. This is collection too, and it includes student-produced learning objects, handouts, policies, and collaborative wiki pathfinders to support learning and research in all learning arenas.

- Organize the Web for learners. You have the skills to create a blog or website or wiki to pull together resources to meet the information needs of your learning community. That presence reflects your personal voice. It includes your advice as well as your links. You make learning an engaging and colorful hybrid experience. You intervene in the research process online while respecting young people's need for independence.

- Are helping learners put together their own information spaces using blog widgets, and iGoogle gadgets, and browsers like PageFlakes. You seek ways to help students learn to use push information technologies.

- Consider new interactive and engaging communication tools for student projects--digital storytelling, wikis, podcasts, streaming video as possibilities beyond the mortal powers of PowerPoint
(And you are rethinking what PowerPoint should/could be!)

- Are thinking interactive service: materials suggestion forms, book review blogs, surveys, online calendars, etc.

- Expanded your notion of searching. You work with learners to set up RSS feeds and tag clouds for research. Your own feeds are rich with learning content, evidence of your networking.

New Technology Tools

- Are beginning to consider iPods as learning tools. You know that when you interrupt a student she might be in the middle of a chapter, recording a podcast, transferring data, taking audio notes.

- Know this is only the beginning of social networking. Students will get to their MySpace accounts through proxy servers despite any efforts to block them. You plan educationally meaningful ways to incorporate student excitement (and your own) for social networking.

- Grapple with issues of equity. You provide open source alternatives to students and teachers who need them. You lend flash sticks and laptops and cameras and . . . You ensure your students can easily get to the stuff they most need by using kid-friendly terms and creating pathfinders. You ensure that all students have access to audio and ebooks and databases.

- Use new tools for collaboration. Your students create together, They synthesize information, enhance their writing through peer review and negotiate content in blogs and wikis and using tools like GoogleDocs, Flickr, Jumpcut, Voicethread

- Consider ways to bring experts, scholars, authors into your classroom using telecommunication tools like Skype and Internet2.

Access , Equity, Advocacy

- Include and collaborate with the learner. You let them in. You fill your physical and virtual space with student work, student contributions—their video productions, their original music, their art.

- Are concerned about a new digital divide: those who can effectively find quality information in all media formats, and those who cannot.

- Consider just-in-time, just-for-me learning as your responsibility and are proud that you own the real estate of one desktop window on your students' home computers 24/7.

- Consider your role as info-technology scout. You look to make "learning sense" of the authentic new information and communication tools used in business and academics. You figure out how to use them thoughtfully and you help classroom teachers use them with their classes.

- Know that one-to-one classrooms will change your teaching logistics. You realize you will often have to partner and teach in classroom teachers' classrooms. You will teach virtually. You will be available across the school via email and chat.

- Don't stop at "no." You fight for the rights of students to have and use the tools they need. This is an equity issue. This is an intellectual freedom issue.

Collection Development

- Think outside the box about the concept of "collection." That collection might include: ebooks, audiobooks, open source software, streaming media, flash sticks, digital video cameras, and much more! You lend this stuff.

Facilities

- Know your physical space is about way more than books. Your space is a *libratory*. You welcome media production—podcasting, video editing. You welcome telecommunications events and group gathering for planning and research and social networking.

Copyright

- Model respect for intellectual property in a world of shift and change. You encourage and guide documentation for media in all formats and recognize and lead students and teachers to the growing number of copyright-friendly or copy left portals. You understand Creative Commons licensing and you are spreading this gospel.

Professional Development and Professionalism

- Read both edtech journals and edtech blogs, not just the print literature of our own profession. You learn by visiting the webcast archives of conferences you cannot attend. You visit David's Hitchhikr to discover new events. You visit sites like edtechtalk.

- Seek professional development that will help you grow even if you cannot get professional development for that growth. You can't "clock" these hours.

Into the Future (and the best of the past)

- Unpack the good stuff you carried from your 20th century trunk. Rigor, and inquiry, and high expectations, and information and media fluency matter no matter what the medium. So do excitement, engagement, and enthusiasm.

- Consider and revise your own 20/20 vision

Children, Teens, and the Construction of Information Spaces[1]

David V. Loertscher
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San Jose State University

The school district's poll was over. It asked what students' favorite source of information was for schoolwork and for personal use from that digital world known as the Internet. The votes were tallied. To no one's surprise, Google won hands down. Over the past several years, the best of library media teachers (LMTs) have made inroads into the popularity of Google by constructing excellent digital school libraries, some using the format of web pages and others using a variety of tools such as blogs or wikis.

LMTs have made a valiant attempt to attract young users on the basis that *quality* information online is a paramount issue. Yet, our students continue to trust Google even in the face of the overwhelming amount of documents retrieved for them by this ubiquitous search engine.

Let us take the student's point of view, which is probably very similar to our own. When we all sit down at the computer to do our work, we expect the organizations and services behind that screen will provide us with what we want and need instantaneously. Few care where the information comes from as long as it is what we need when we need it.

Suppose we turn the tables and accept the notion that the student should be in command of their own information spaces on the computing devices they have access to. And that our role as LMTs is to help students build the kind of information space that will benefit their needs rather than say to them, "You need to use the information space as we have designed it for you." Such a switch in perspective challenges us to have a whole new view of the digital world.

The following model assumes that each individual student, teacher, and even ourselves as information professionals would construct a "home page" or access interface to the world of information: a secure place, a safe place, a work space, a personal digital assistant that could be accessed 24/7/365 from any location in the world.

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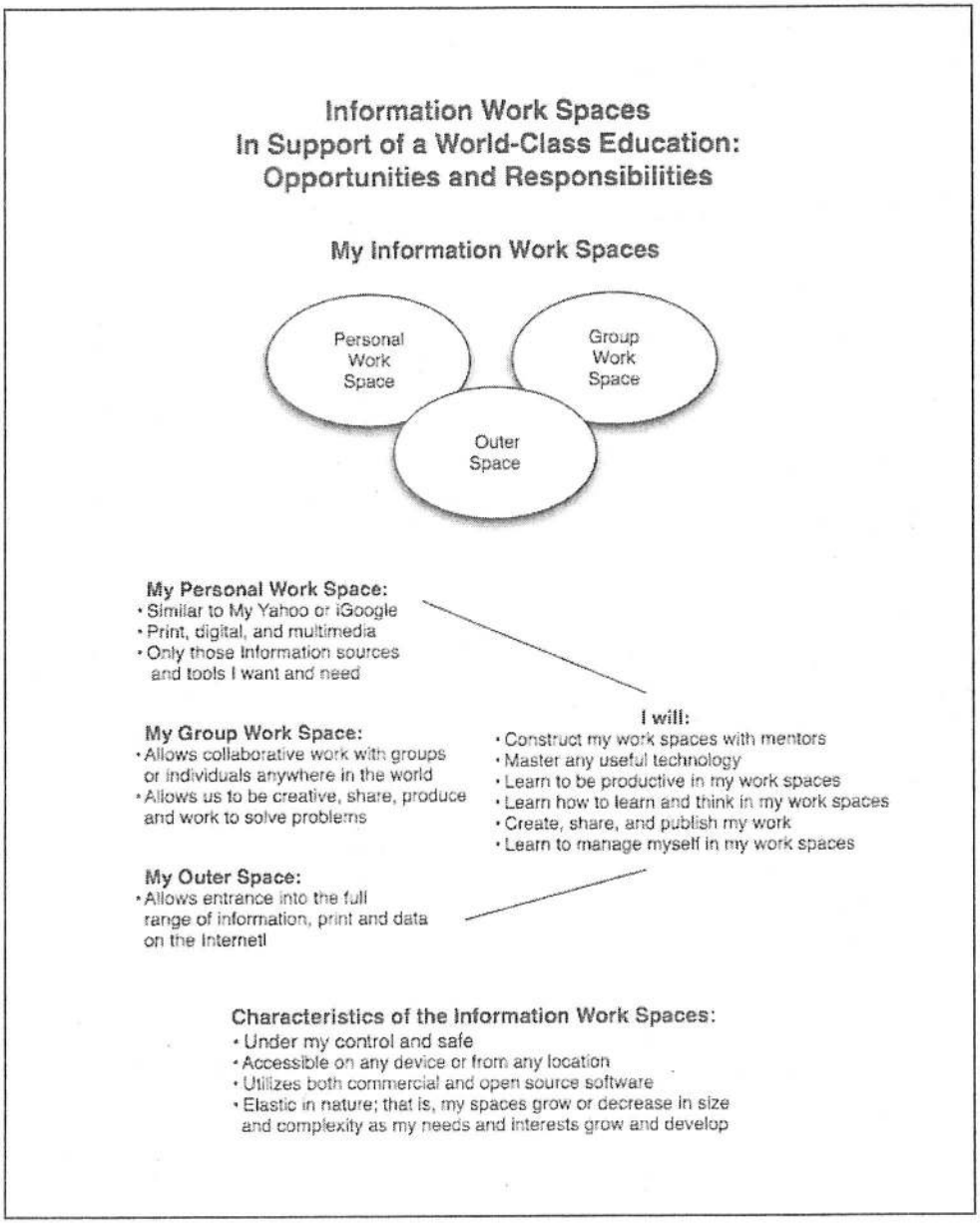
[1] This article is chapter one in: Williams, Robin T. and David V. Loertscher. *In Command: Children and Teens Build Their Own Information Spaces and Manage Themselves Within Those Spaces.* Hi Willow Research & Publishing, 2007. Available from www.lmcsource.com. This chapter will also appear in the December issue of *Teacher Librarian*, 2007.



The model demonstrates the creation of three parts of "my" information space: personal work space, group work space, and outer space (the full world of the Internet). Each of these spaces has a function to allow users access, but designing such an engine requires that users learn to manage that space and that they learn to manage themselves responsibly in that space.

Why should students be encouraged to construct their own information space? The fact is, they already do, but probably not very well. It is reasonably safe to assume that most have a cluttered mess on their opening screen, and they seem to muck through with a few bookmarks and by searching for the source, folder, or document around the screen. Yes, operating systems encourage organization of the desktop, but it would be interesting to hold a discussion with kids and teens to see what the status of their home pages are.

Perhaps we should look at our own desktops, as information professionals, for a clue about how we organize our own information spaces. Perhaps the chorus of voices would unanimously state: "Well, it's quite messy, but I seem to manage." I would say this is not good enough.

Let's start with the basics as we consider the reasons, the whys, the wherefores, and the implementation of this turn-around idea.

Why should kids and teens build their own information spaces?

There are plenty of good reasons why kids and teens should have lots of control under adult guidance:

- The world of the Internet is getting larger, more complex, and overwhelmed with information. Kids, teens, and adults increasingly need skills to manage that space because it can overwhelm any of us at any time. Since it is not going away, we either manage it or are overwhelmed by it.
- It is the nature of digital space as it is currently constructed to vie for our attention, the major currency of this generation. Psychologically, all of us need to manage rather than be managed.
- To survive in a flat world, kids and teens need to realize the advantages of learning and knowing the major tools of productivity, both as individuals and collaboratively in groups. We usually think of productivity in terms of output of goods and services, but the same concept applies in digital space. Those who are well connected are proficient and productive. For example, a teacher's assignment, along with help from the LMT, come instantly to our desktop, is available 24/7, and connects us to the tools we need in order to accomplish that assignment. Those not in the loop, suffer.
- In constructivist theory, if kids and teens build their own space rather than have others build it for them, they will acquire management skills, both of the space itself, and more importantly, management of themselves within that space. We teach kids how to manage themselves as they cross the street even though streets are a very dangerous place. The same care needs to be taken in the digital world. Adults need to assist kids in developing management skills because the adults cannot be there every moment.
- In the world of differentiation, varying abilities, differing learning styles, and individual skill levels (novice to expert), kids can construct basic spaces to manage their work and then construct more complex systems as they develop the management skills to handle those spaces and themselves. For example, from the digital school library students can pull onto their own pages a subset of tools and information sources rather than have everything – much of it irrelevant to them at any given time.

What are the essential elements of a personally-constructed information space?

The model illustrates three elements of information spaces: the personal space, the group or collaborative space, and outer space (the whole world of the Internet). Each requires some elaboration.

Personal Information Space: Here we construct the tools, the information sources, our school or work assignments, our calendars to keep us on track, and the personal safeguards needed to function well. Some parts of this space are pull technology—information or tools I purposefully "pull" onto my page from elsewhere and can use when I need them. Other features are "push" technology—information and tools that automatically appear on a desktop for attention. Assignments pushed to me from my teachers and LMTs are a good example of something I want to be informed about as soon as they are available. My personal space is my productivity space where I do much of my work, have the information conveniently at hand, and have constructed safeguards so I am not bothered by outside influences I don't care to encounter.

Group or Collaborative Information Space: The advent of Web 2.0 technologies allows for collaborative communication, collaborative construction, and collaborative presentation spaces. As a student, I may be in a number of groups from different classes—some of these are classes at my school, outside the school, outside the school district, or anywhere in the world. Examples of collaborative spaces develop, it seems, almost every day. The most well known ones are YouTube, MySpace, and Wikipedia. Both are admired and feared at the same time. We think of Skype to talk with small groups around the world for free. There are Nings that are closed communities where everyone has their own personal blog that can be read and commented on by all those in the Ning. Nings also have a discussion forum to work on planning or discussing issues. We think of wikis as places to do collaborative information gathering, writing, updating projects, joint planning, and a host of other group work. We think of Google Docs and Spreadsheets as perfect places for group writing and planning. The nice thing is that many of these tools are free. Others such as Elluminate or Blackboard require a considerable investment. In such group spaces, we go in and out of the groups we belong to as projects are completed or our personal interests and skills evolve.

Outer Space: The third world on our desktop is the ability to interact with and pull from the totality of the Internet, whether open or invisible. This is where the most crucial management skills are needed to protect ourselves, our privacy, and our work while taking advantage of the global information system. Can we, for example, subscribe to a major newsfeed without opening ourselves to a barrage of advertising? Can I connect to groups, information sources, libraries, organizations, activist groups, and global movements, as well as begin to build my own entrepreneurial forays into the global marketplace? Outer space is full of opportunity as well as dangers. How do I manage both?

What do you mean by students managing their information space and managing themselves in that space?

Computer operating systems have become much better at assisting users to manage their systems and the information on them. But in the Web 2.0 world, many new tools have emerged to handle large sets of information. For example, del.icio.us helps us manage favorite websites and RSS feeds make us aware of changes in our favorite websites. iGoogle turns the computer welcome screen into one's own centralized organizational system of the three different information spaces. Imagine both an information system building workshop and a tune-up shop where young people constantly learn new techniques for updating their own skills and pushing out their own frontiers as they juggle the millions of entities trying to get their attention, take their money, or even abuse them or steal their identity. Since there is not a foolproof safety net and there will not likely ever be one, students need to learn safety rules for managing their own behavior in digital space. We already have some concerns in this area, but users need to discover some important guidelines:

- Decide whom to trust in digital space.
- Have a work ethic and know how to be productive.
- Work ethically in collaborative spaces, contributing rather than destroying.
- Learn to discern harmful elements and know how to control them so they don't control the user.
- Discern when I am caught in addictive online behavior and know how to break it.

At present, schools often try to control bad behavior or lock down systems that threaten kids and teens. Wouldn't it be better to equip students with self-defense strategies? A famous person once said: "Teach them correct principles and let them govern themselves." Such an optimistic goal may not work for some kids, but it will work for many, many others, and it will become a lifelong skill.

What about content on these self-designed systems?

In the marketplace today, textbook companies are trying the capture the market of both printed and digital textbooks. Other companies have content-rich topical information systems they sell for a fee. Libraries subscribe to online databases for student research. In a student-run system, we need to have elastic content systems that kids flow in and out of as their needs change. If I am exploring a topic, for example, I may want to enter a content system at an apprentice level, and I would then want to push my expertise toward the expert level. In other systems, I might need specialized knowledge for one project that requires me to use a database for only a half hour. Content providers try to maximize both usefulness and profits. If they saw more flexible user-controlled systems emerging, they would design their systems to be useful across different platforms.

Would we abandon the construction of the digital school library or the public library information system? No. We would continue to build these systems but instead think of them in terms of a grocery store where our students can come and select apples, oranges or cereal to drag to their own home pages to nourish their information use. We will soon find them pawing through our wares and picking what they want and need, but not picking the spoiled apple or the yucky broccoli. Yes, that broccoli software might be

"good for them," but they have probably already found something that works better and faster for their individual needs.

One of the best uses of Web 2.0 tools is to have students construct their own content as they learn together, do projects, read, write, and solve problems. Best of all, their content and writing can be shared with the world through blogs, YouTube, wikis, and Flickr albums. There seems to be no end to the self-publishing opportunities using technologies that engage and motivate. Learning has never been so exciting.

Who would teach kids and teens to create and constantly improve their information spaces?

Certainly the LMT, the district technology coordinator, and the building-level technology personnel need to collaborate to plan and develop systems and the needed channels to get students started and to provide the needed support. Instead of locking out all Web 2.0 applications, technology leaders need to find ways to include them. Much can be outsourced safely. For example, in a Ning, each member of a collaborative community must be invited, and no one from the outside can see any content. Thus, students and teachers can blog, add comments, show videos, discuss issues, and other things without interference. Once the channel is opened up, the software and storage of information on the Ning is free, maintained off-site, and available from any connected computer throughout the world. The owner of the Ning receives all comments posted to the Ning and can review and monitor what everyone is doing if mischievous behavior begins to develop.

At the beginning of the school year, a construction session can be sponsored by the technology staff, LMT, and interested teachers. Certified students can assist individuals and their friends to build, monitor, extend, and manage their information spaces. It is a community opportunity to share, help, and encourage. It already happens in the social networking world of kids and teens. We just need to extend the influence in another direction.

So What?

For years we have built computer information systems on the idea that "if you build it, they will come." Well, they came, but instead of staying, they did a work around because of their needs in social networking. Instead, we propose that: "If THEY build it, they will LEARN." Learn what? Children and teens will not only learn how to construct a learning space, but in doing so, will surround themselves with tools that help them learn. The fishing pole of the technology world, as opposed to giving them a fish, requires students to begin to take command of their information spaces and their own learning within that space. It is a gift of a lifetime.

Some might panic with this proposal against the centralized, one-fits-all system, assuming that outsourced systems won't work for kids. The fact is they already do work. We are already at odds with the current generation who sees school as irrelevant and boring. Technology is one place to build a bridge that crosses the chasm between students' seeming boredom and the exciting world of learning.

The Collaborative School

By David V. Loertscher
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San Jose State University

There was a riot in the virtual classroom. "Get off your ivory tower," my graduate students were saying to me rather bluntly, "You are asking us to lead a charge for literacy into the kingdom of the classroom. Sorry, we're not invited." They went on describing how desperate classroom teachers are; how much pressure there is to perform; how much stress teachers feel; and how teachers really just want to be left alone to cover what will be on the test. Specialists keep out.

It seems that everyone has been trying to "fix" the classroom. If only those teachers would buckle down and "teach," scores would rise and all would be well. Consider the loud voices from every camp:

- Governments are setting the standards, dictating the assessments and setting the bar, then backing it all up with threats.
- Researchers are pressed to find the "right ways" to teach and learn.
- Professional consultants, through their literature, point to various solutions: understanding by design, professional learning communities, differentiation, inquiry, and direct teaching, among others.

The various prescriptions for what ails the classroom teacher and the pressure to learn one technique, then another, and another makes teaching a very unattractive profession these days. Coupled with the changing nature of the students with diverse cultures, languages, and backgrounds, teachers are facing overwhelming expectations.

On another front, researchers are learning more and more about how the brain works and how it learns and responds to various stimuli. Thus, there is a plethora of books directed toward the classroom teacher about brain-ways of teaching. If we add the body of literature on learning styles to the mix, the teaching process has grown more and more complex over the past few decades. But we still rely on a single teacher in front of a classroom of 20-40 learners from diverse backgrounds.

Is there something wrong with this pressure on a single individual? As the world has become a complex information and technology environment, many other professions such as medicine, science, business, manufacturing, and even agribusiness recognize that no one mind can "do it all." Many favor the team approach to accomplish work and make progress. We now think of medical teams, research groups, think tanks, business partnerships, and other group solutions when a single mind cannot know it all or get it all done. Yet, we still think of the single teacher in front of a single classroom. It is a deep-seated tradition. With the dawn of a flat world, it seems time to concentrate on providing every child with a world-class education and build the educational structure around this

newly competitive individual. Perhaps it is time to think seriously about the team in education.

What does it take to educate the "whole child" as ASCD envisions?[1] Is there some merit in building an organization around the learner rather than requiring the learner to adjust to the organization we furnish that is founded on long-standing tradition?

Looking at the research connected to organization and leadership in schools, Tim Waters and Greg Cameron at McRel have developed The Balanced Leadership Framework™ that provides a number of strategies for designing a "purposeful community" or a collaborative bent on excellence.[2] Two of their characteristics are particularly attractive:

- The use of all available assets
- Collective efficacy

The vision here is to combine the tangible assets such as computers, the library, textbooks, and teaching supplies with the intangible assets such as leadership, strategy, innovation, and adaptability in a determined collaborative push toward excellence.

The Outsourced Model. Over the last century, the school organization has built appendages to the classroom, each with a special but discrete function designed to supplement the classroom. We refer to various specialists who pull learners out of the classroom for specialized instruction. These professionals include librarians, technology specialists, literacy coaches (and other specialized coaches), counselors, nurses, and the fine arts teachers. There are organizational reasons to "outsource" the teaching of certain skills in order to build in planning periods for teachers or to fill out the number of periods in a school day. Teachers often complain about the number of "pull outs" that cut their teaching time, but the attraction of fewer students has often silenced criticism. Recently, with the pressure to teach basic skills, the amount of time devoted to the teaching of reading, math, and now science has increased, but at the expense of corollary disciplines such as fine arts, social studies, and other electives.

The Role of Specialists. Over the years, specialists of many stripes have developed what they consider essential elements of a world-class learner. Examples include:

- Librarians who advocate information literacy, the love of reading, and the wise use of technology.
- Technology leaders who seek the wise use of a wide variety of technologies required for participation in a 21st century environment.
- Literacy coaches who wish every learner to be a skilled and fluent reader
- Counselors who want learners to look toward the future as part of current behavior and career planning.

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[1] The Whole Child: An Initiative of ASCD. Find at ascd.org.

[2] Waters, Tim and Greg Cameron. *The Balanced Leadership Framework*™ Denver, CO: McRel, 2007. 64p. See the description of the entire purposeful community on pp. 45-53.

- Nurses and many PE teachers who are concerned with wellness rather than just prowess on the athletic field or the treating of a current physical problem.
- Art, music, and drama specialists who want learners to experience the best of culture.

As one examines the literature of these specialists, one finds the idea of collaboration a common element. Most specialists have been taught in their fields that one of their roles is to collaborate with classroom teachers and to integrate their specialized agendas with the agenda of the classroom teacher. Yet, these specialists have a common complaint: they can't seem to get into the kingdom.

Lacking resources for a full cohort of specialists, principals often move positions around. Because a literacy coach is hired, a librarian is fired. Because two salaries are not available, a technology leader, librarian, or fine arts specialist serves more than one school in an attempt to maintain the outsourcing of popular programs with parents. But in spreading the specialists so thin, most of their impact is lost.

The Mud Puddles of Specialists. The various specialists in a school building have varying challenges that overwhelm them and gobble up every available minute, or so it seems. There is always a computer to be fixed, books to be shelved, another child in physical distress, or a misbehaving student to be dealt with. During a typical day, so many "emergencies" develop that specialists, over-tired from run, run, run often admit that they contributed little to the excellence of the school. In times of financial stress, when specialists are discontinued, the specialist's role is pushed back to the classroom teacher who now must teach art, reading skills, information literacy, or careers. It doesn't happen.

Consider a Collaborative Model. If the McRel survey of research on leaderships is as strong as it appears toward a collaborative model, purposeful community[3] or the professional learning community model of the Dufour's,[4] then a structured "tweak" of the entire school community that collaboratively builds around the needs of the learner is not only possible but desirable.

Collaboration is not a new concept in schools. Everyone seems to talk about it as a success factor, but in practice, the specialists of the school are not envisioned as essential players. Occasionally in the professional literature, a mention will be made of a specialist doing this or contributing that. Most often they are just ignored. In my own interviews of the authors of many professional books, the authors write directly to the classroom teacher and "presume," but don't mention, the existence of the specialist. Magically, there is supposed to be a reliable computer network in place; of course there are 10,000 books down the hall in the library that can provide multiple reading levels when the

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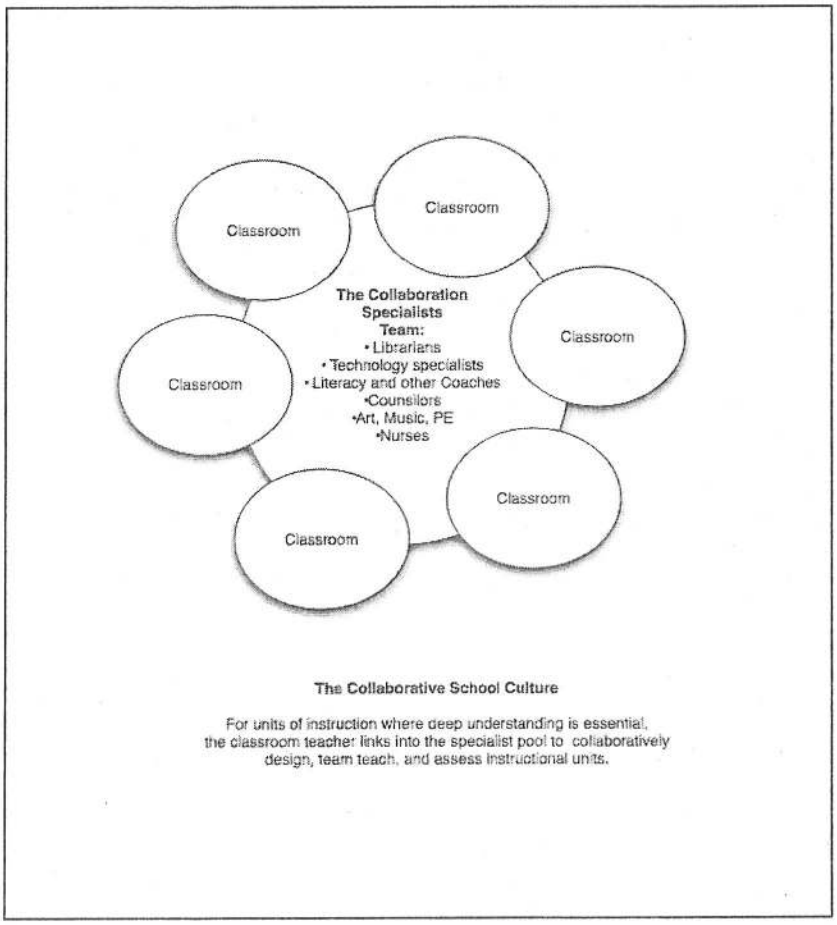
[3] Check the McRel.org website for the Balanced Leadership Profile.

[4] DuFour, Richard, Rebert Eaker, and Rebecca DuFour. *On Common Ground: The Power of Professional Learning Communities*. National Educational Services, 2005. Also check our the numerous books by the DuFours published by Solution Tree.

textbook doesn't work; or, theoretically there is a coach beside the teacher as they struggle to build tough reading skills; but these are only theoretical ideas that somehow don't really happen.

Consider an organizational structure where true collaboration among the entire faculty of the school can and does happen:



The Collaborative School Culture

For units of instruction where deep understanding is essential, the classroom teacher links into the specialist pool to collaboratively design, team teach, and assess instructional units.

In this true collaborative culture, teachers don't just reach out to a friend at the same grade level or department for support, they naturally expect and reach for the expertise of the specialist team of the school. As teachers, their classroom merges with the library, the computer lab, and the art and music room to embrace whatever resources are available and to team-teach alongside various specialists. In other words, teachers and specialists combine their talents to reach every learner.

In such a school, administrators structure the organization around planning and collaboration, not just among grade level teams or departments, but in such a way that it is natural for one or more specialists to be integrated into the planning, teaching, and assessment of learning experiences. The idea that two or more heads are better than one becomes a reality, not a buzzword.

In the collaborative school, the idea of integration is natural. Together the teacher and the librarian help learners understand the major elements of the Civil War as they learn research skills to answer essential questions. In such an experience, the content information is boosted by learning or research skills. Thus, I as a student know how to learn and I learn more in less time because I have the tools to learn and the adults to mentor me through the process. If the Civil War unit includes visual timelines of factors such as battles, political developments, the role of slaves over the time of war, the economic factors over time, along with the music and art of the period, then we as students may have to go to the computer lab to learn to make timeline videos that we will upload to YouTube; we may have to know how to research in the databases of the Library of Congress; we may need to appreciate the spirituals of the slaves; or we may need to include other aspects of the period as we build a deep understanding of that period and how it affects the way we still live and work today. As a learner, I recognize that I have multiple adults mentoring and coaching me through a learning experience and I am accountable to them all.

In such a school, professional development happens when specialists and teachers team up. The teacher learns how to help build a wiki. The technologist discovers new ideas and resources for teaching how the North won the Battle of Gettysburg. The nurse helps teachers and students understand that to be wounded was almost as bad as getting killed outright (a good reason that we all wash our hands frequently every day). In other words, the specialists and teachers build on each other's expertise as they combine their agendas. The whole is greater than the sum of its parts.

Specialists teach their knowledge to classroom teachers; classroom teachers teach their learning strategies to the specialists. Students share their expertise with the adults, the adults with the learners. We become a teaching team and a learning community.

Are we saying that every classroom teacher would have a cadre of specialists swarming over every learner? Actually, there are schools with a sizeable number of specialists already functioning.[5] We are back to the question about asking what a world-class education costs and then building an organization around that idea. One only need to ask teachers who have full support to discover why they value their jobs in such schools. And, the taxpayers in those schools realize that their sacrifice is part of a long-standing tradition that the current generation boosts the next one to heights they themselves were unable to attain.

In almost every school, there are specialists performing their roles independent of the classroom. Perhaps it is time to make those specialists a team among themselves and an integrated team with the classroom teacher.

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[5] For example, at Hunderton Central High School in Flemington NJ, there are six persons on the library staff and another dozen on the technology staff so that there are enough consultants to service the needs of both teachers and students.

How It Works

The specialists of the school should be organized into a team that is anxious to collaborate in the classroom to improve learning experiences. This presumes that each member of the specialist team is already a good teacher in their own right and understands instructional design as it is practiced in the school. Each specialist is selected for their position based on their competence not only in library, technology, art, counseling, or other areas, but for their ability to collaborate and team-teach. As a team, they might even have offices close to one another in a library that has been transformed into a learning/consultancy center. They would form a professional learning community as they learn the art of collaboration.

Working from a curriculum map, both teachers and specialists begin to understand what will be taught across the school year and how both the objectives of the classroom and the agendas of the specialists will be integrated to plan what topics will be covered and which ones will be developed more in-depth. The specialists will probably choose the more in-depth units in which to combine their agendas with those of the classroom.

Before a unit begins, the classroom teacher or group of teachers would meet with one or more specialists to plan the unit, including the standards to be achieved, the joint assessment, and the team-taught learning activities. Each phase of the learning activity is the concern of the whole team, so as administrators are observing and encouraging, it becomes obvious that the team is pushing and achieving together. Each successful unit becomes a showcase of the possible. Less successful interactions are revised and reinvented. It is a series of one, then another, and another successful and documented experience. Accounts of such collaborative units can be seen at http://davidvl.or under the heading of action research. Here, teachers and librarians examine collaborative teaching and its effect on learning.

As the popularity of collaboration grows, the number of specialists and time they have to collaborate becomes an issue. In this case, the specialist team adopts the following model:

- We plan together.
- We team-teach the activities.
- We jointly assess the results.
- We specialists release the unit back to the classroom teacher.

As an example, a teacher is faced with teaching the colonial period and a textbook that most students cannot understand. Books, articles, and multimedia on various reading levels are gathered with help from the librarian and the teacher and librarian conduct "literature circles" where groups or pairs of students try to understand life in the northern, middle, and southern colonies. Wanting the learners to understand the diversity of life in the colonies, the technology specialist teaches both the adults and the students how to enter facts into a collaboratively-built Google spreadsheet. The entire group then analyzes the columns and rows to compare and contrast what is going on in the various sections of the new world.

At the end of the unit, the teacher is happy because the English language learners actually understand the basic elements of the colonial period. The librarian is pleased because of the opportunity to push wide reading across all reading levels. The technology leader is happy that both adults and students have learned a new technology, but more importantly, have used that technology for a group compare and contrast to see a bigger picture of colonial life. As the team surveys the assessments, they take pride in the percentage of the learners who not only met the objectives, but exceeded them. When the same unit comes around the next year, the team opts to let the teacher do the colonial period alone because she has both the materials and the knowledge of the technology in her repertoire. Instead, they decide to partner on the development of the Revolutionary War unit. The group has used the team-release model and is able to develop more and better learning experiences over time.

Another strategy of the specialist team is to work with groups of teachers teaching the same topic across grade levels, with a department, or even with two departments (an integration of social studies and literature as an example). The goal of the specialist team becomes a bragging list of memorable learning experiences across the disciplines and across the grade levels of the school. These units are showcased to the community as examples of exemplary teaching and learning. The team has worked hard to insure that every learner not only meets, but also exceeds basic standards. Perhaps, this is the wole point: teams don't just strive to meet standards for every learner; they push on beyond toward excellence.

The collaborative school requires a shift in perspective, not just of the classroom teacher, but by the specialists themselves who may be quite accustomed to working in isolation. A few expectations might be in order for all the team players:

Expectations of Specialists in the Collaborative School

- Build your skill as an excellent teacher in addition to the skills you possess as a specialist. You are a "teaching" specialist just as interested in the content learning of the learning experience as you are in teaching about your specialty.
- Build the skills of team-teaching rather than "turn" teaching.
- Be a creative, caring, and hardworking team partner.
- Learn how to reach learners with special problems until you have confidence that the team is meeting the needs of every learner in the classroom.
- Learn how to integrate your own agenda as a specialist into the agenda of the classroom teacher.
- Teach the teacher your expertise and learn from the teacher all you can about their specialty so you can pull on each other's strengths and develop ones in common.
- Figure out how to spend half the time you have in a school teaming and the other half doing your specialty role managing the computer labor or library media center, etc.).

Expectations of Classroom Teachers

- Build your expectations of collaboration with the idea that two or more heads are better than one.
- Cultivate the idea that drawing on another's strengths is not a sign of weakness.
- Ask the specialist to join you in collaborative partnership that desires to push egos aside and focus on increased learning opportunities for students.
- Teach specialists about your expertise and learn their expertise so that all the adults become knowledgeable coaches of learners.
- Realize that while planning time may be increased, teaming with specialists is more likely to produce memorable learning experiences than solo performances.

Expectations of Administrators

- Hire specialists who are excellent teachers in addition to being good at their specialty.
- Begin with the expectation that each specialist will spend half their time in the building collaborating on the planning, teaching, and assessment of learning activities with either single classroom teachers or groups of teachers.
- Work with the specialists to streamline their outsourced organizational responsibilities so that the time to collaborate is available.
- Create an organizational structure where both classroom teachers and specialists have the time to meet, plan, and evaluate their collaborative activities.
- Encourage higher learning opportunities by being willing to step outside long-lived school protocols and outdated methodologies.

Conclusion. As we all learn how to function and prosper in a global community, we think in terms of constantly reinventing the way we work, learn, and communicate. Old industrial models give way to new methods of productivity where the lives of everyone are enhanced. Such 21st century aspirations require educators both to ask for more resources, and to use also the resources they have in better and better ways.

For too long, the specialists in a school have been ignored and under-appreciated because they were outsource agents that were like butter on the bread: nice to have but not essential. In the collaborative school, the specialists form a team alongside the teaching staff with mutual expectations, responsibilities, and the motivation to serve every learner. It is a resource in every school that has long been ignored. It is a resource that can lift learning opportunities to new heights. It seems like an idea worth trying.

Give Me A Reason to Go to the Library

in the Dallas News, Saturday, September 29, 2007

Andrea Drusch
Student, Lake Dallas High School
Dallas, Texas

We read at Starbucks; we can love reading at school, too

A library is a place where you have to be quiet. All the time. You can't have things like gum or water or anything made of metal on your person in order to enter.

While the setting is clearly not inviting to anyone under 60, chances are it's the largest room in your child's school. If this is going to continue, libraries need to make changes to stay relevant to the needs of 21st-century students.

Schools provide computer labs for daily use in classrooms with open doors, but the book collection in the library is guarded like Fort Knox. Credentials for entry include, but are not limited to: photo identification, library card and a signed, dated, timed note from your homeroom teacher. Retina scans and criminal background checks can't be far behind.

The overall atmosphere inside is akin to being told "make yourself at home" in a stranger's exquisitely decorated living room. Mistrustful librarians peer from behind the checkout stand, clearing their throat uncomfortably as they watch books being removed from their homes.

While some students still hang on to fuzzy childhood memories of story time at the community library, most high school students avoid it at all costs. As long as there are so many hoops to jump through for admission, why not install a turnstile to keep track of the number of students entering on their own free will? (This does not include class research projects, where students disappear into crevices to do homework, while thinking, "My Internet at home is faster, anyway.")

The numbers would be shockingly small, especially if you eliminate students only using the World Books. These expensive collections are a gold mine to students when teachers insist upon including offline research sources. These teachers are apparently preparing us for a time when rolling blackouts plague North Texas, rendering all computers useless.

But what about the non-reference books? Most English teachers will tell you, "Kids just don't read like they used to." I disagree. Recently my high school treated students who passed all classes with a trip to Stonebriar Centre. Upon arrival, a large group flocked straight to Barnes & Noble, where they stayed until the bus ride home. On the bus, they exchanged books and discussed favorite authors. If high school kids are willing to dish out $17 on books at the mall, then why isn't a room the size of a basketball gym full of books free of charge appealing to them?

Well, the walls aren't exactly lined with Oprah's Book Club selections. Instead, libraries try to appeal to 17-year-olds with the same old Crucibles and Scarlet Letters they have been trying to shove down our throats for years.

Meanwhile, Barnes & Noble and Starbucks have students lined up out the doors, and it ain't just for the coffee. At Starbucks, students can pile a table sky high with books and conduct study groups, or just decompress and chat. Barnes & Noble chooses the books it provides to its customers through something called the New York Times best-seller list, not through what 10th-grade English teachers think is appropriate.

Make school libraries more like these places. Open them before and after school, and allow students to bring in coffee and breakfast, as long as they keep away from computers and book shelves. Even students who aren't hitting the books at that particular time should be able to enjoy an atmosphere of couches and tables in the company of their friends. Computers for research and for personal interest should be available to everyone and occupy the majority of the space. New releases of books should be purchased by popular demand and displayed where they will be seen to attract students.

Faced with becoming relics, libraries can change. A 21st century library could truly lead schools into the future.

Andrea Drusch of Corinth is a senior at Lake Dallas High School and a Student Voices volunteer columnist. To respond to this column, e-mail voices@dallasnews.com.

P.S. When Andrea found out that her article would be published in the Tres. Mt. proceedings, she responded:

I believe Michael already emailed you back with approval to reprint the article. I'm flattered at the request and hope it's message gets across. The responses I have gotten from it are shocking. Most are either from students saying that they totally agree, their school library is like a sterile hospital room that they are afraid to even enter, or librarians who are outraged. The vast majority of librarians' responses consist of complaints about irresponsible students, messes, stolen books, vandalism, ect. They are also all completely obsessed with keeping the library clean, making food a non option. (My school has a perfectly capable janatorial staff, but that's beside the point.) I would like to ask that librarians please keep in mind when reading the atricle, that it is refering to school libraries which, consequently, are located inside of schools. Librarians tend to make enemies of kids in general, because of a few individual offenders, and therefore discourage all kids from even entering. Perhaps a good librarian is better people person than they are book person. I don't know the answer. But I do know that my school librarian was hurt by the article because she thought she had done a million things to make our library more inviting to students. There is just a disconnect somewhere between the ideals of librarians and students. Thanks for your support for the cause,
Andrea Drusch