

Knowledge Building in the Learning Commons:

**Moving from Research to Practice
to Close the Achievement Gap**

Papers of the Treasure Mountain Research Retreat #17

Oct. 26-27, 2011

Osseo, Minnesota

**Edited by
David V. Loertscher
Blanche Woolls**



Learning Commons Press



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2011

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Introduction to the Collected Papers

What is the Treasure Mountain Research Retreat?

The Treasure Mountain Research Retreat is a gathering of the researchers and practitioners of the field of school library media programs. David V. Loertscher, its founder, invited two other scholars of the field, Drs. Blanche Woolls and Philip Turner, to help organize the first Treasure Mountain Research Retreat in 1989 in Loertscher's home town of Park City, Utah just prior to the meeting of the American Association of School Librarians in Salt Lake City, Utah that year. The first retreat met at the Treasure Mountain Inn in Park City, a convention hotel facing Treasure Mountain – a 12,000 foot peak out of which a small group of miners dug a 400 foot hole to extract some \$2 million worth of silver in the late 1800s, starting a mini-mining boom 30 miles east of Salt Lake City. Hence, the name Treasure Mountain.

The Treasure Mountain Research Retreat has met seventeen times since its beginning in 1989. It has no officers, no organization – only a mailing list kept by whomever organizes it. Anyone can be on the mailing list of Treasure Mountain by contacting its founder. As its founder, David Loertscher either extends invitations to or accepts volunteers to convene the next conference. A list of all the retreats is appended to this introduction. Treasure Mountain generally meets in conjunction with gatherings of the American Association of School Librarians (AASL) and thus has some ties to that organization, particularly its Research Committee, but has no official link.

The Retreat is self-supporting but has been the recipient of two grants from Mandrain, Inc. and has received organizational support from the institutions of Retreat organizers such as Libraries Unlimited and the School of Library and Information Science at Indiana University.

The proceedings of Treasure Mountain Research Retreats have been published by Hi Willow Research & Publishing or summarized in *School Library Media Annual*, a publication of Libraries Unlimited. This edition is published by Learning Commons Press.

The dream of Treasure Mountain is to provide a platform for the researchers of the field of school library media programs to share their research agendas, gather ideas for further research, and to interact with the practitioners of the field for whom the research is being aimed. It provides a unique opportunity for researchers to spread their wings, to announce and document progress, to test ideas. For practitioners, it provides an opportunity to think with researchers, to bring realism into research ideas, to question the direction of

research, and to sense a direction for practice in their own school libraries. It continues to attract attendance based on fellowship and a stimulating interchange of ideas.

The current collection of papers reflects movement in the field of school libraries to respond to changes in information and technology across the world. Many of the papers respond to a call to transform school libraries and computer labs into Learning Commons.

Prelude to the Conference

As a prelude to the conference keynoter, Howard Rheingold, participants have been encouraged to read his blog entries concerning Literacy as follows:

- <http://blog.sfgate.com/rheingold/2009/04/20/attention-literacy/>
- <http://blog.sfgate.com/rheingold/2009/05/11/twitter-literacy-i-refuse-to-make-up-a-twittery-name-for-it/>
- <http://blog.sfgate.com/rheingold/2009/04/10/21st-century-literacies/>

Introduction to the Book2Cloud Edition of this Book

For the first time, these papers are being issued in a Book2Cloud edition.

The purpose of a digital collaborative edition known as a Book2Cloud edition of a book is to promote a conversation among individuals or groups with the authors of the various chapters in a book. Unlike a static ebook, the objective is to extend ideas, build deeper understanding, and build collaborative intelligence.

Conversations and Additions

In the Book2Cloud edition, each chapter of the book has its own separate page. There are two ways to interact with the text:

1. Keep the original text of the chapter at the top of each page intact and add your conversation below the chapter.
2. Click on the "Editable Chapter" at the top of each page to a new page where you are encouraged to add comments or lists or materials in the original text, thus creating your own or your group's chapter. You can add comments, copy passages into your own personal notes, and add information (please use a different color), attach documents, add general comments at the bottom for

discussion, ask questions of the authors or what your group thinks, add links to even better or more current materials, correct URLs, and any number of interactive things.

Public Edition

When you have purchased the printed book, you have the opportunity to collaborate with others in not only reading the original text, but enhancing the text with additional titles, links, discussion, attachments, and anything else that might enhance the text. To edit the site, you will need to request permission. When you do so, give the permission code as proof of purchase. This is found on the verso of the title page of the book. If you are having trouble accessing the book, email davidlibrarian@gmail.com for assistance.

Professional Development and Classroom Editions

Your group or class can have your own private space where you are discussing and adding materials to the digital version of the text.

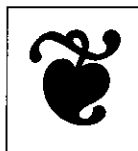
The instructor should notify reader.david@gmail.com that you intend to have a group and wish to have your own private edition. Your site will be created with you as owner so you can add your students who have purchased the book to your "class."

Group discounts to the book are available. Call the 800 number or email lmcsorceverify@gmail.com for information.



Part I

Knowledge Building in the Learning Commons



Knowledge Building and the Learning Commons¹

David V. Loertscher
San José State University

Carol Koechlin

Sandi Zwaan

Esther Rosenfeld
Consultants, Toronto, Canada

How do we prepare students to be active participants in their future?

Above & Beyond tells the story of how the 4Cs – communication, collaboration, critical thinking and creativity - complement and strengthen traditional school instruction.

<http://www.youtube.com/watch?v=7KMM387HNQk> Consider the skills featured in this film and Knowledge Building in the Learning Commons as this chapter unfolds.

Historically, there has often been a division between those who feel that young people should have a broad introduction to content in various subject areas versus those who believe that deep understanding and knowing how to learn are paramount. In the past decade, widespread testing that has focused on factual knowledge has driven many teachers to emphasize content coverage over inquiry. The concept of a Learning Commons argues for the development of personal expertise and collaborative construction of deep understanding.

Teachers and students experience a pedagogical merger of classrooms and library/lab facilities. As an extension of all classrooms, the Learning Commons can round out the entire spectrum of learning. The use of guided inquiry and other problem-based learning experiences in the Learning Commons not only engages students but also effectively releases students to take command of their own learning, doing, knowledge building and sharing. This approach prevails for formal education, online education, or informal learning experiences.

In both the Open Commons and the Experimental Learning Center, a continuous stream of learning units are brought by classroom teachers to take advantage of various learning specialists and the rich resources and technologies which are available. Whether experimental in nature or “mature” learning units, the focus is on inquiry-

¹ This paper is Chapter 3 from *The New Learning Commons Where Learners Win! Reinventing School Libraries and Computer Labs*, 2nd Edition. Learning Commons Press, 2011. Available at <http://www.lmcsource.com>

based learning journeys. These journeys can be personal in nature, small-group projects, or whole-class learning experiences guided by the classroom teacher and one or more learning specialists. In the Experimental Learning Center, new ideas, strategies, experiments, and initiatives are being tested and modeled for the school. The major question is whether learners thrive better than with previous strategies. In the Open Commons, previously tested strategies are practiced on a regular basis.

For any of the learning specialists and, in particular, the teacher librarian, the curriculum of the specialist is being integrated with the learning standards required by the classroom teacher. This “just in time” and “need to know” instruction helps learners build their knowledge base and at the same time helps them learn more efficiently. Examples of such integration might include students learning how to judge the differences between fact and opinion as a political issue is being explored; students learning how to think critically about conflicting media messages encountered on the topic; students learning how to paraphrase by selecting major ideas in a variety of texts; and students learning how to use a wiki to collaboratively build a case for a position the group is creating. In another example, the reading specialist might be assisting learners handle more and more complex texts so that the subject at hand is more easily understood. As these learning journeys occur, the adults are watching, coaching, and assessing progress to insure that every learner either meets or exceeds the learning expectations. In other words, the Learning Commons supports a school-wide culture of inquiry fostering ‘habits of mind’ and ‘learning dispositions’ conducive to success.

Challenge Many classroom teachers have a different mindset.

One of the problems teacher librarians or any other specialist face in trying to align with classroom program is that it is often based on a behaviorist approach where the adult coaches prescribe:

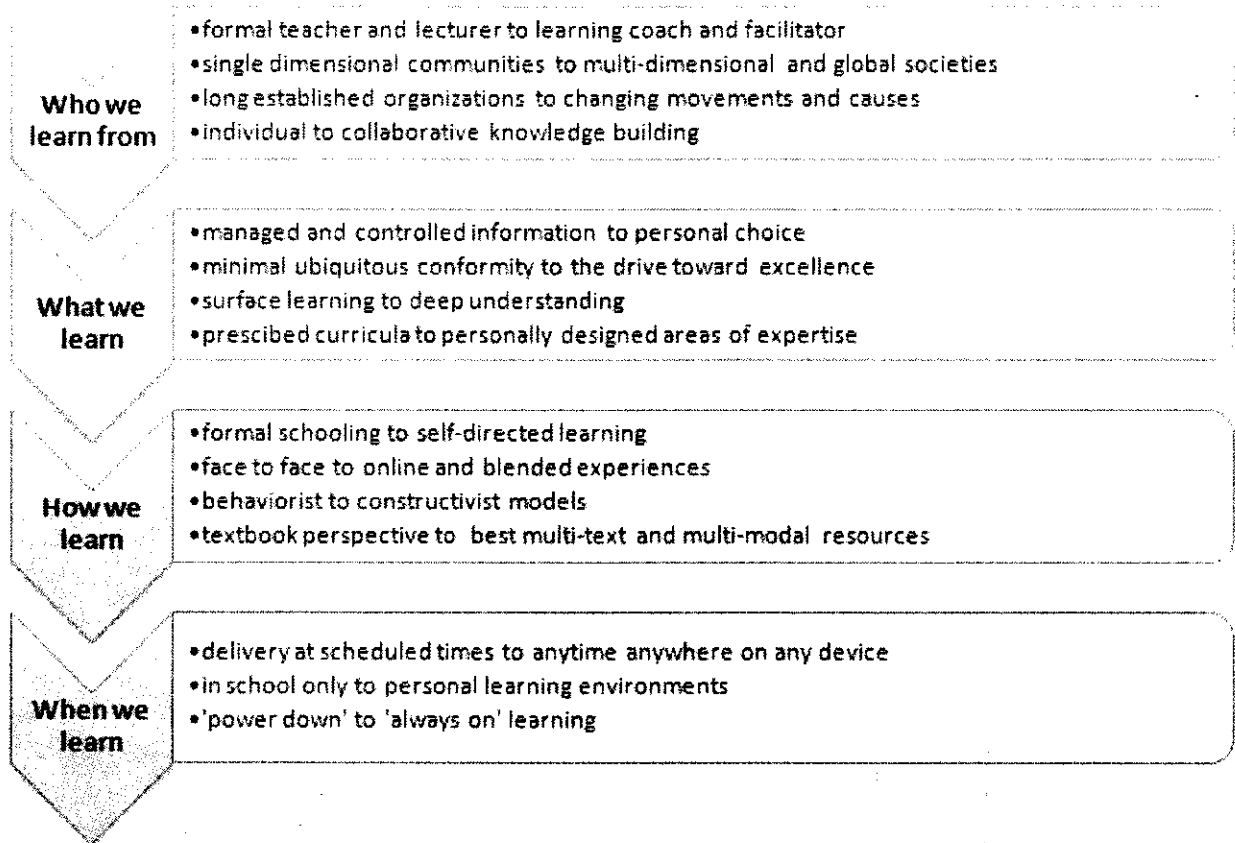
- What students must learn, both broadly and in depth
- What skills students must build and be able to demonstrate
- Products that will demonstrate the students’ knowledge and skills
- The acceptable level of performance on any assessment

Critics point out that such education constitutes a “cookie cutter” approach where gifted students are unchallenged, and average students are bored because the emphasis is on bringing the challenged up to an acceptable bar. In this scenario, the teacher librarian works in the supportive role of helping students reach benchmarks or minimums through information tasks that are often low level ‘find and deliver’ types of assignments.

The Learning Commons recognizes the major shift in the worlds of information and technology. Today's learners are growing up in quite a different world than their adult coaches did, and face a very uncertain ever changing and challenging future. Here, the Learning Commons is "natural" as it focuses on constructivist ideas, learning literacies, and technologies, as learners gradually take more and more control over their learning. The emphasis is on turning superficial understanding that leads to uninformed decision making into thoughtful and deep understanding designed to develop an informed citizenry. The bottom line is that teacher librarians need to help teachers transform low level projects. As Alison Zmuda has stated at the Treasure Mountain research retreat in 2007, they cannot continue to be an "accomplice to mediocrity".

Discussion Point Many writers have explored the new digital generation and how today's learners exhibit quite different behaviors than in previous generations. Nicholas Carr points to these learning differences in an interesting video history of technologies and learning. <http://www.nicholasgarr.com/> As Carr points out, each major change in technology has had a deep impact on the way we learn. What are the implications for learning with new technologies in your school?

Evolution of Learning



*Teachers who are shifting their practices to meet the needs of our times talk about how they're remixing the coverage of content with the uncovering of ideas and concepts, how they're balancing their time between being the "sage on the stage" who presents, explains, answers questions and being the "guide on the side," who supports students' research, discovery, and sharing of their own findings in learning projects. As one teacher has put it, "I had to unlearn the idea that teaching was about my content; I had to learn it was about **their** thinking and **their** skills."*
Trilling and Fadel (2009, 39)

As educators turn away from the prescriptive view of teaching and learning toward the more open view, the Learning Commons can contribute and thrive. The prescriptive stance seems to exist in a narrow information environment while the constructivist stance flourishes in an expanded information and technological environment.

Learners of today need to build enough personal expertise to enable them to succeed in a world where personal efforts are combined to build collaborative intelligence. For example, a great film such as the movie, *UP*, requires the combined expertise of engineers, animators, script writers, directors, and many others who develop what a single individual could not have produced. Forecasters of the future herald personal expertise building as a life-long endeavor in view of the rapid change across many employment sectors.

Digging Deeper How can the Learning Commons help learners build individual expertise?

An interesting example is provided by Salman Khan, a former Wall Street hedge fund analyst who has used his personal mathematical prowess and teaching method to create brief mathematical video demonstrations. His TED talk is at: <http://www.youtube.com/watch?v=nTFEUsudhfs>

In a radical career switch, Salman Khan has developed the Khan Academy, www.khanacademy.org, a full organization devoted to teaching basic mathematical ideas and essential skills using short online video modules complete with repeatable tests. The academy has expanded to include video modules in history, finance, physics, chemistry, biology, astronomy, economics and computer science. These free YouTube videos have been an online sensation and have inspired a practice known as Flip Teaching where content and skill development happens as homework, and where teachers are freed up during class time to engage the learners in more constructivist projects. For other classroom teachers' experiences using the Flip Classroom, see: <http://teachingwithted.pbworks.com/w/page/37315118/Flipping-the-Classroom> and locate the Flipped Classroom on the following blog: <https://usergeneratededucation.wordpress.com/>

Challenge: Invite students to surprise you!

Here is the story of a teacher who supported students in their desire to teach others as Salman Khan did. <http://mindshift.kqed.org/2011/08/move-over-sal-khan-sixth-graders-create-their-own-math-videos/>

His advice for other teachers, "Don't put technology behind glass. Let them touch the computer, That's how the world changed for me, for all of us. If

you give kids a little bit of trust and let them try out some stuff, they're going to come up with fascinating things that will surprise you."

Bernard (2011)

Technology Transformed Learning Environments

In fact, in the tech-infused learning environment, the teacher should regularly be saying, "Surprise me!" The bottom line is that we will see learners becoming responsible to their peers, audiences, and communities for their learning. ...and that responsibility will not be based on a measure of their learning (how much or how well), but on what they have learned and what they can do with what they've learned.

David Warlick (2010)

In the world of the Learning Commons, both adults and learners stimulate each other in the ownership of their personal learning and in the creation of expertise, creativity, in problem solving, and in the development of collaborative intelligence. Thus, if you want to tour the school whether as a physical place or a virtual place, begin at the Learning Commons to get a glimpse of what excellence looks like in teaching and learning.

Discussion Point: Why the focus on Inquiry and Problem-Based Learning?

Lest the reader debunk inquiry or project-based learning as having been tried before, consider John Larner's list of five major misconceptions about project based learning in his article for *Edutopia* at:

<http://www.edutopia.org/blog/debunking-five-pbl-myths-john-larner>

At Lehman's Science Leadership Academy, a public high school in Philadelphia where Larner is the principal, students develop five core values that turn them from passive students into enthusiastic and dedicated students. These values are:

- Inquiry
- Research
- Collaboration

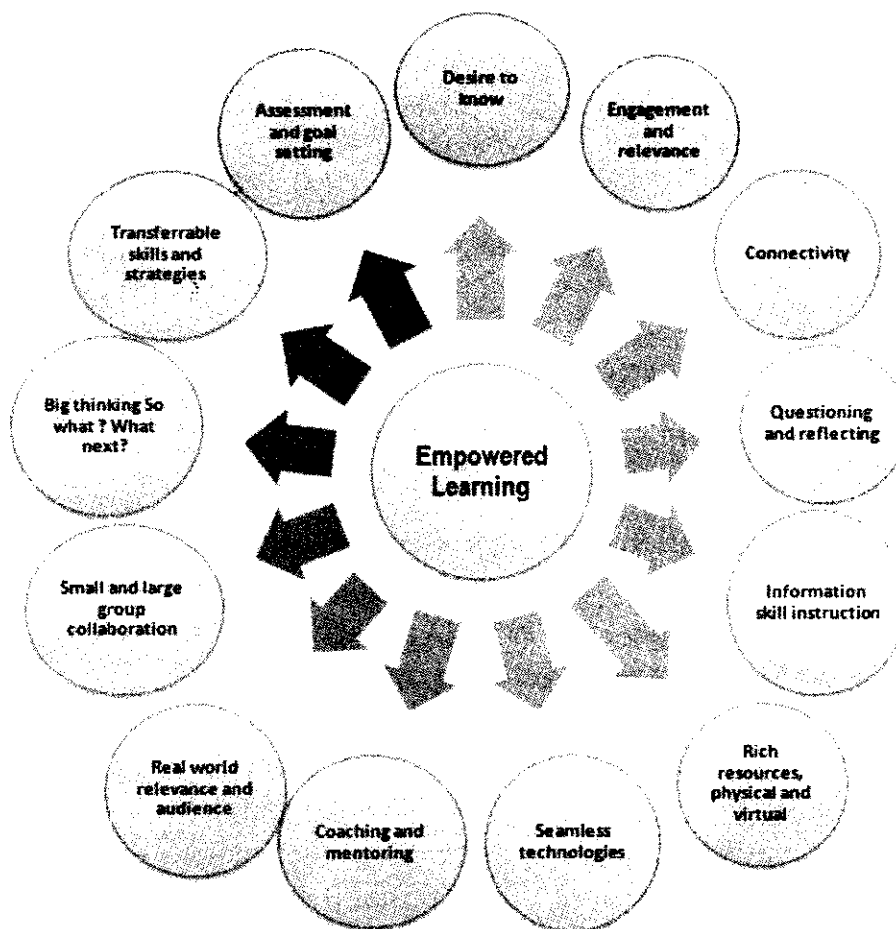
- Presentation
- Reflection

As one interviews the students at this high school, the sense is clear that individual students have taken command of their own learning. They keep reminding us that they are a different breed of learner:

http://www.teachertube.com/viewVideo.php?video_id=448&title=Pay_Attention

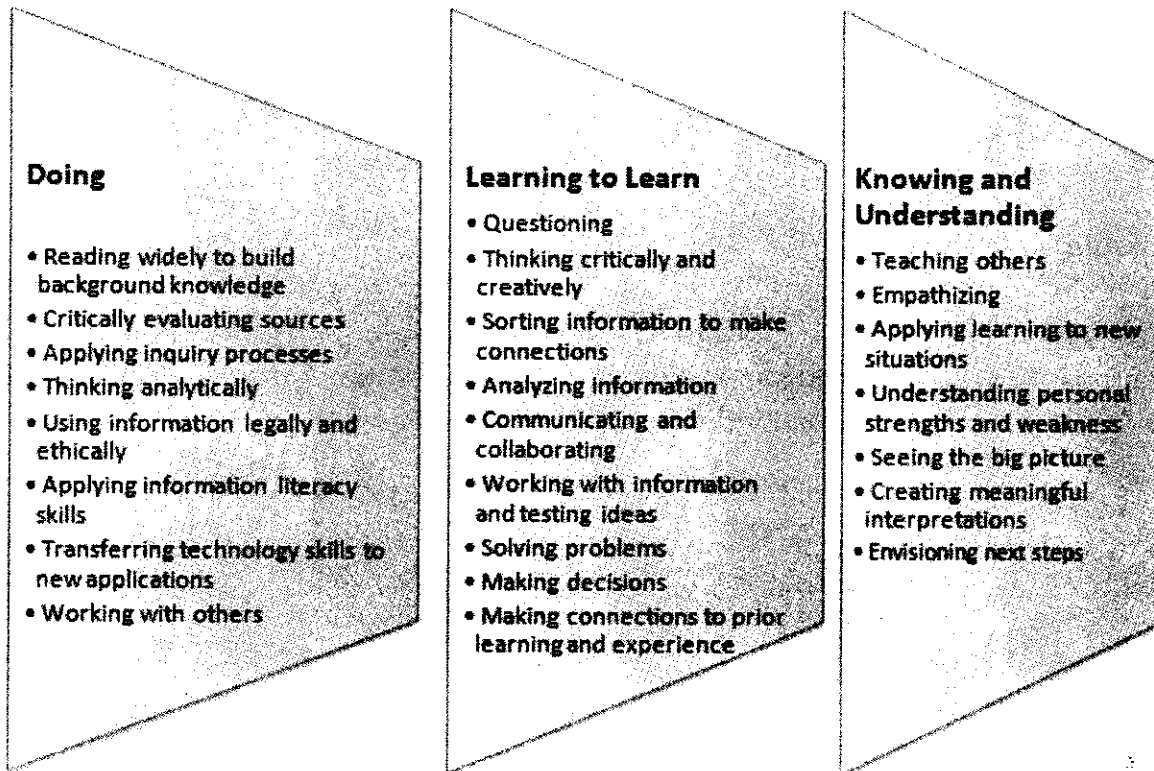
Focusing on the Learner

Inquiry in the Learning Commons is a dynamic learner centered process. Teacher librarians, other faculty, and support staff provide 'just in time' and 'just for me' support and learning advice. Evidence of success includes:



As suggested by major foundational documents, learning becomes a quest, a journey. We can measure success in this journey by considering the following indicators:

Knowledge Building in the Learning Commons - Indicators of Learner Success



Fostering Self-directed Learners

For every learner in this new information and technological environment, the essential components of expertise are organization, efficiency, and control. So, whether the learner is a child, a teen, or an adult, the ability to build one's knowledge, track it, and share it, can be beyond even the most organized mind. All learners need strategies and technology to record what they know, to see how they are progressing, and to discover how to build both a private organizational routine and a public face for what they know and are able to do. As the Internet has grown, so have the tools to handle the onslaught of information. More on this will be discussed in the technology chapter and the personal learning environments chapter of this book, but the essential idea belongs here.

- **Personal Organization Spaces** The tools now exist to help every learner come into command of their own information space. Learners can use such tools as an iGoogle page, a Start Page (in Google Apps for Education), a LiveBinder, a private web site, wiki, or blog to be their personal and private or semi-private place where they keep themselves organized. Here, they can have projects they are working on, school assignments, calendars, voices they wish to pay attention to on a regular basis, family stuff, and fun - whatever they need to help them cope with family, school/work, and personal interests. Such an information space is their own filter of the information world. They let in what they want, communicate with whomever they please, explore as they wish, and shut out unwanted pressures vying for their attention. For an example, see *Welcome to my Personal Learning Environment* <http://www.youtube.com/watch?v=YElS3tq5wIY>
- **Personal Technology Access.** All learners must build access to the information and technology they need to access and flourish in the current world. They figure out what devices they will own, how they can be connected to networks in a reliable fashion, and how they are going to exhibit digital citizenship in the virtual world, just as they are learning to succeed in the physical world. As well, they need to protect themselves and their work from technological malfunction or malicious snooping. They need to build a cadre of tools that help them be efficient and boost their ability to learn quickly and deeply. Of course, they will need reliable mentoring from peers and coaches in order to keep up. In today's world, this is the construction of a personal learning network.
- **Building a Public Face and Image.** Learners are conscious of the public nature of the web and how to control what others know about their personal expertise and who they really are. The tools they need to enable them to build a personal e-portfolio of what they know and can do are readily available and free. Some refer to this personal e-portfolio as digital curation, the preservation of learners and their accomplishments; their projects; their interests; their abilities; and, hopefully, the real people. This is necessary for both their personal interests and their academic prowess. For instance, a learner's collaborative projects at school may appear on the school's Virtual Learning Commons, but they also appear on the learner's personal website or e-portfolio.

In other words, Learners learn how to be in control, understanding the major differences between private, partial, and public sharing in a digital world. They are their own librarians. They are their own publishers. They are their own communicators. They pay attention to what really matters to them. They know

where they are going and how to get there. But they also understand their role in community and culture.

See an example of learner led education: *The Independent Project*

http://www.youtube.com/watch?v=MTmH1wS2NJY&feature=player_embedded#at=2

See also: *What did you do in school today?* View the student interview video - *A Student's Role in Teacher engagement*

<http://www.cea-ace.ca/programs-initiatives/wdydist>

Resource TIP *In Command!* *Kids and Teens Build and Manage Their Own Information Spaces, And... Learn to Manage Themselves in Those Spaces.*

Empowering the Teaching Team

As the classroom teacher and the learning specialists build and deliver these collaborative learning experiences, they are constantly assessing their own progress to ensure they are:

- Guiding and supporting **inquiry learning**
- Stimulating **critical and creative thinking**
- Building cross **curricular literacy skills and new literacies**
- **Engaging and effective**
- Empowering students to build **deeper understanding**
- Providing **knowledge building** learning experiences
- Employing a framework for designing **successful assignments**
- Effectively utilizing information and technology **rich learning environments**
- Providing **differentiated instruction** to ensure learning success for all
- Utilizing current technologies to **enhance the learning process**
- Stimulating excellent performance on both **formative and summative assessments** of either content knowledge or learning skills

Both the specialists and the classroom teacher follow the advice of W. James Popham as they watch a learning experience unfold. He suggests four levels of formative assessment that monitor the learning experience as it happens.

1. Changing the structure of the learning experience if the learners are not building the sub-skills needed to accomplish the larger goal
2. Learners changing their learning to learn strategies as they progress through a learning experience.
3. The whole classroom/Learning Commons atmosphere changes to accomplish a particular learning experience and experiences over time.
4. Changes occur in the entire school climate as more effective strategies are developed along the way.

W. James Popham (2008, 53)

Creating Collaborative Environments and Knowledge Building Centers

One of the best ways to create engaging project or problem based learning experiences is to build them within a collaborative digital environment. This has become very easy to do using a variety of Web 2.0 tools that are free and available 24/7 on almost any digital device. When there is a collaborative digital environment, everyone, including learners and adults can be working together. So, instead of the teacher using the Internet to provide a one-way assignment stream with perhaps lecture and submission of work with assessment feedback, the digital learning experience provides a place where everyone is talking, working, helping, constructing, submitting, critiquing, and producing resulting in assessment. This is true whether the class is a face to face one or totally online or mixed.

We recommend the use of Google Sites as a website where the collaborative learning experience happens. Other technologies such as Moodle, blogs, or wikis can also be used. Below is a picture of the template for constructing what we term knowledge building centers. The template can be downloaded at:

[Virtual Knowledge Building Center Template](#)

In the center of the template, the adults put the project question and then around that problem description are "rooms" where the learners and adults work together from the beginning of the project until its conclusion.

Knowledge Building Center

Search this site

- Topic of Assignment**
(edit this line...)
- Assessment
- Calendar
- Comments, Questions,
and Tips About the
Assignment
- Communication
- Lesson Plans
- Models
- Museum
- Products
- Reflection
- Resources
- Tools, Tutorials
- Tours
- Work Spaces
- Workmap

Topic of Assignment (edit this line...)

Here is our home for building knowledge together about our topic. Please use and contribute helps, tools, ideas, comments, and your finished project.

Use the various links around the page to help yourself and others.

Tools, Tutorials

Put your assignment / essential question / problem / challenge / or a student-constructed challenge here

Resources

Work Spaces

Products

Assessment

Models

Calendar

Museum

Communication

Lesson Plans

Tours

Reflection

Comments, Questions, and Tips About the Assignment

Sign in | Reset Site Activity | Tour | Report Abuse | Dislike | Powered by Google Sites

Examples of constructed learning experiences using the knowledge building center format have been constructed by graduate students at San Jose State University as they have transformed older style learning experiences into inquiry projects. Many of these transformations are available at the following website (note: the higher the transformation number, the more developed the learning experience is. A Module 3 learning experience is the most developed of all). Start your examination at the lesson plans tab.

<https://spreadsheets.google.com/ccc?key=0AkkdWYq2f0WvdENEZmpJa0NyTHF0MzJndktIejV3dkE&hl=en#gid=0>

An example of an adaptation of the template shows a knowledge building center where adults and students are recreating the school yard.

Yard Plan Search this site


The Democratic School Yard

Assessment
 Objectives
 Formative Questions
 at 4 Times After the
 Assignment
 Lesson Plans
 Reflections
 Resources
 Articles
 Books
 Creative
 Commons
 Multimedia
 Resources
 Sample Hand Plans
 Videos and
 Podcasts
 Plans
 Work Sheets
 Stamp

The Democratic School Yard

How can we make recess fair and fun for everyone?

Democracy is an important facet of our lives as American citizens. We can see democracy in action on a large scale in our national and local governments and on a smaller scale in our everyday lives here at school. A successful democracy creates a peaceful and just environment of the people, by the people, and for the people.



Questions to ask:

- What are the roles of the citizens in a democracy?
- What are the responsibilities of the citizens in a democracy?

Comments, Questions, and Tips About the Assignment

As well as Google Sites and Moodle, Richard Byrne, who writes the Free Technology for Teachers blog, recommends the following tools:

- Sakai
- Canvas
- OLAT
- A Tutor
- Google's Cloud Course

The teacher librarian or the teacher technologist can easily design the virtual environment in such a way that collaboration is a "natural" rather than a forced experience. Who can help with the re-conceptualization of the school yard? Of course, the classroom teachers and the students, but also other adults could help. The teacher librarian? An outside expert? An administrator? Parents? A community planner? The special ed class at the school? Obviously, the environment itself encourages participation rather than just individuals filling out an assignment. And, the likelihood that this plan will actually be carried out makes the learning experience real and engaging.

In the next two sections, we will discuss the necessity of using sound instructional designs and a Big Think metacognitive activity at the end of the learning experience, but before we do that, consider the power of helping children and teens learn what collaborative intelligence and team functioning can do to elevate what we all know and can do.

Digging Deeper Consider the following articles.....

<http://www.ere.net/2011/01/17/cross-functional-collaboration-discovering-its-value-and-the-genius-of-google/>

and also Christopher Barlow's white paper:

http://issuu.com/gfbertini/docs/creativity_and_complexity_in_cross_functional_team?mode=a_p&wmode=0



globalearner Alan November

#edtech #edchat Do we really need to memorize the fifty state capitals? What is the new creative, motivating, rigorous assignment?

4 hours ago

Incorporate a Sound Instructional Design into a Knowledge Building Center

Once classroom teachers realize that two heads are better than one, they plan, schedule and assess learning experiences which utilize the rich resources and adult specialists that the Learning Commons provides. The Learning Commons promotes an environment where every child or teen can flourish as a creator, investigator, critical thinker, or communicator. Building on the principles of backwards planning promoted by Wiggins and McTigue in *Understanding by Design*, teachers and learners can apply the Loertscher/Koechlin/Zwaan Think Models to push thinking far beyond the cut/paste/present tradition. These models find applications in both the Open Commons and the Experimental Learning Center depending on whether the learning units are being tried and tested or whether they have been adopted widely. The 18 Think Models that stimulate high-level thinking are:

- **Background to Question Model** – where learners build enough background knowledge on a topic to formulate intelligent and engaging questions for themselves
- **Sensemaking Model** – where the learner takes a group of facts, ideas, or opinions and makes sense through visualization, classification, or synthesis
- **Read, View, and Listen Model** – where learners read, view, and listen widely on a topic and combine what they learn with what others know

- **Advice to Action Model** – where learners consult a wide variety of advice and discern what are the wisest courses of action
- **Compare and Contrast Model** – where people, places, ideas, time periods, issues or solutions to problems are analyzed and compared to gain understanding of varying perspectives
- **Concept Jigsaw Puzzle Model** – where groups build expertise on subtopics and then combine their expertise to build a big picture across what everyone has discovered
- **Problems/Possibilities Jigsaw Puzzle Model** – where learners build expertise in various parts of a problem and then combine their expertise to solve the larger problem.
- **Decision Matrix Model** – where learners assemble facts, ideas, or opinions in a spreadsheet-type of matrix that enables them to do a comparative analysis in order to make an informed rather than a subjective decision
- **Patterns & Trends Matrix Model** – where learners assemble facts, ideas, or opinions in a spreadsheet type of matrix that enables them to look for patterns or trends across the data collected
- **The Timeline Model** – where learners arrange ideas, events, or data in chronological order to enable comparisons, sequences, contrasts, or developments in order to see a larger picture of what is or what was happening.
- **History & Mystery Model** – where learners try to determine what happened, really happened, or find explanations to mysterious happenings
- **Take a Position Model** – where learners take positions based upon careful study rather than upon whim
- **Re-Create Model** – where learners create authentic reproductions whether literary, real, artistically, or creatively as possible
- **Reinvent Model** – where learners try to invent new ways of doing things, processes, environmental systems as close to the real world as possible
- **Learn By Doing** – where learners create apprenticeships, experiments, mockups, or performing tasks in the real or simulated world
- **Teacher-Directed Quest Model** – where learners do research projects under the teacher and learning specialist's direction such as:
 - Online Quest Projects
 - The Report
 - The Research Paper
 - The WebQuest as a Research Model
- **Learner-Directed Quest Model** – where learners take the initiative with adult shadowing of research projects such as:
 - Hero's Journey

- Become an Expert
 - I Search
 - **Mix It Up! Model** – where learners mix and match any of the models above
-

Resource TIP Loertscher, David V., Carol Koechlin, and Sandi Zwaan.
Beyond Bird Units. Learning Commons Press, 2010. <http://lmcsource.com>

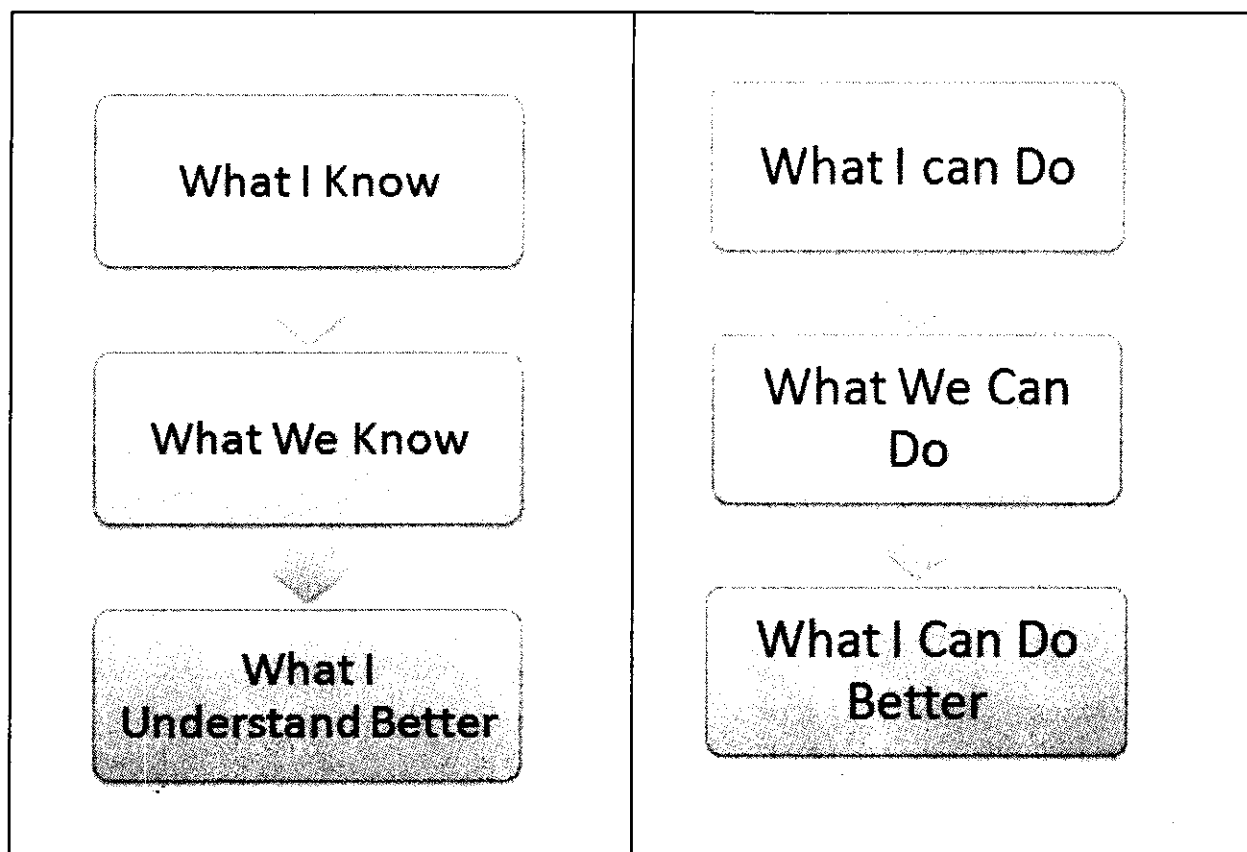
When It's Over, It's Just the Beginning of Learning: The Big Think - Building Collective Intelligence

To reach the full potential of their inquiries learners need to explore the bigger impact of their work. Often the concepts and ideas learned are essentially those targeted in learning standards. As individual or group inquiries are completed and presentations given, learners realize that they have considerable expertise in the curriculum topic they have just explored. They have heard, seen, and experienced the findings of others and are ready to examine the collective knowledge of the class. These products or presentations are not the end of the inquiry project but the beginning of a Big Think. Through collaborative knowledge building, learners take this opportunity to transform their learning into something new.

The Big Think is divided into two parts. The first helps learners reflect on the content knowledge they have built. To do this, they might:

- Conduct an active discussion about what they now know as a group vs. what they researched as individuals
- Attack a more difficult problem or challenge using the expertise of individuals to create an inventive solution
- Challenge the group with a new question requiring combined expertise
- Create a new question that leads them into the next learning experience
- Write about larger ideas and concepts learned by the group
- Collaboratively build charts, diagrams, maps, mind maps, plans, or action items based upon both individual and collaborative expertise
- Interact with an expert in order to compare what they have learned with what the expert knows about a topic and ways they might become experts themselves
- Take action on a problem or issue that surfaces during the learning experience
- Participate in related real world events that exhibit what they know and can do

Thus, as they reflect on their knowledge, they can clearly state or demonstrate:



Digging Deeper What should learners try to understand as they reflect back on a learning experience?

Have the students experienced collaborative intelligence (excellence) in the following two videos?

http://www.youtube.com/watch?v=D7o7BrlbaDs&feature=player_embedded
and

http://www.youtube.com/watch?v=6WhWDCw3Mng&feature=player_embedded

Can they learn to tell stories unique to their own experience? See the video at: <http://mediastorm.com/publication/african-air>

and the Periodic Table of Storytelling at:

<http://computersherpa.deviantart.com/art/Periodic-Table-of-Storytelling-203548951>

Can they build visualizations of their work? Check out Kathy Schrock's excellent bibliography about infographics at:

<https://sites.google.com/a/kathyschrock.net/infographics/links>

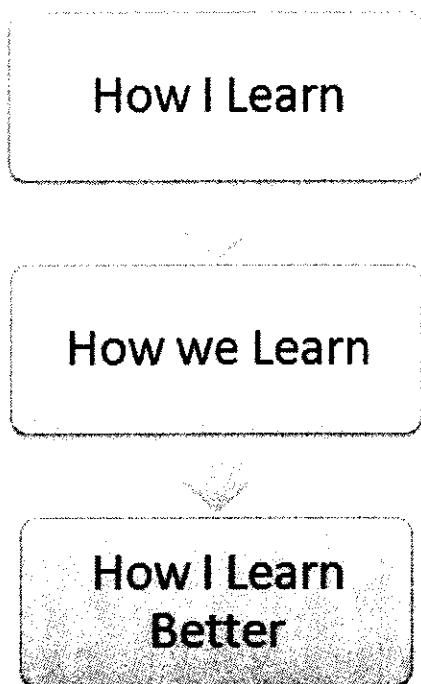
and an excellent example titled the Periodic Table of Visualization Methods at:

http://www.visual-literacy.org/periodic_table/periodic_table.html

The second part of the Big Think is to design an activity that will press students to think about the learning process they have just encountered. This activity could include reflection, questioning, and assessing techniques. A Big Think about the learning process should result in transference of skills and knowledge to other or new situations, self and peer evaluation, and goal setting. Together, learners might:

- Develop a visual map of their learning journey and/or the information networks they used during the process.
- Chart individual emotions during the learning process on line graphs and layer the graphs to analyze for group or class patterns. Suggest learning tips for dealing with emotions, work habits, dispositions, and organization skills.
- Compare self-assessments and look for similarities or major differences. Use this data to set individual and class goals.
- Discuss and chart how their skill development applies to future work at school and in their personal lives.
- Explore careers that require inquiry process skills and begin a career database for future reference.
- Create a how-to presentation for another group of learners, e.g., best search strategies, notemaking techniques, presentation tips, etc.
- Develop questions to assess collaborative learning experiences and then develop criteria for better team work.
- Analyze the effectiveness of available time, resources, and equipment, and then prepare a needs assessment report for the Learning Commons
- Reflect as a group: Are we getting better as learners? How can we learn more in less time? What technologies will help us learn better?

Thus, as they reflect on their learning journey, they can clearly state or demonstrate:



Challenge

Would it really be possible to bend our social media skills over into our academic skills as illustrated in the following infographic? (Hint: click on the graphic to enlarge it)

<http://w3protokol.com/blog/2011/03/conversations-in-social-media/>

The third part of the Big Think is designed as a review by the teaching partners of data gathered from the learner, learning unit activities, and learning organization practices. Combined, this evidence will provide teaching partners with powerful data for refining or redesigning future learning experiences. See the Chapter 9 - School Improvement for further details.

The bottom line, known as the Big Think, is that the traditional end to a learning activity – passing in a paper, a project, or making a presentation – is now a springboard to keep the thinking and learning flowing.

Resource TIP In the book: *The Big Think: 9 Metacognitive Strategies That Make the End Just the Beginning of Learning* by David V. Loertscher, Carol Koechlin, and Sandi Zwaan, nine strategies have been developed for collaborative reflection by classroom teachers, students, teacher librarians, teacher technologists, other adult specialists, experts, and/or parents.



willrich45 Will Richardson

I'd love to see a site like this for schools and kids...real problems that need real solutions. <http://www.su.se/digital/medietorm>

28 Jun

Open IDEO <http://www.openideo.com/>

Activity

Characteristics of Super Learning Experiences

Take action: Compare a learning experience you have recently participated in to the characteristics listed below. What strategies did you experience that would exceed any of these characteristics? In what areas could the learning experience have improved? What areas seem difficult or unfamiliar? What experimentation could happen to test the various characteristics for an improved result in your school?

Characteristics of Super Learning Experiences

- The learning experience happens in a physical/virtual environment conducive to active investigation under the direction of adult coaches.
- Standards and learning outcomes are selected from state/provincial/national documents that provide minimums the learners are to surpass
- The problem, project, or quest engages the learners; they are engaged because the task is relevant and meaningful.
- Learners encounter a wide range of information from which they must develop deep understanding
- Learners use quality information and media in their learning journey
- Each learner develops personal expertise in the topic at hand and adds that expertise to the pool to create collaborative intelligence

- Adult coaches facilitate learning collaboratively (classroom teacher, teacher librarian, teacher technologist, reading specialists, counsellors, outside experts, other specialists, parents, etc.)
 - The technology used supports the active investigation of the problem/project and actually contributes to the learning and to learning how to learn.
 - Sound instructional designs are used to spur active inquiry, higher-level thinking, habits of mind, and creativity
 - Products include both individual and collaborative creations in written and multimedia formats
 - 21st century skills are taught “just-in-time” to spur content knowledge
 - Sharing both individual and group work takes many forms and a variety of events
 - Differentiation allows for multiple routes toward excellence
 - Almost without exception, every learner meets or exceeds expectations for the learning experience
 - A variety of formative and assessment measures chart progress of individuals and groups of learners.
 - After the unit is complete, the adult coaches and learners participate in a metacognitive Big Think and decide how they can do better during the next learning experience together.
-

The Learning Leadership Team

The school administrator, representatives of grade level or department faculty, student representatives, and learning specialists, including the teacher librarian, constitute the Learning Leadership Team. This professional learning community plans the professional development for the school, centers it in the Experimental Learning Center, encourages and promotes experimentation in the Center, and draws attention to exemplary teaching and learning in the Learning Commons and throughout the school. They conduct action research on experimental learning approaches, school or district initiatives, and guide assessment practices and progress toward achievement.

Kuhlthau, Maniotes and Caspari in their book, *Guided Inquiry: Learning in the 21st Century*, describe the guided inquiry team as the group who:

- Understands the constructivist approach.
- Embraces the team approach to teaching.
- Includes administrators.
- Considers inquiry central to curricular learning.

- Commits to the development of information literacy.
- Allocates time for team planning.
- Defines clear roles for each team member.
- Designs assignments that enable and enhance inquiry learning.
- Allocates time for extended learning.
- Commits to guiding students through inquiry.
- Adopts a flexible approach.
- Endorses innovation and creativity.

Kuhlthau, Maniotes and Caspari (2007, 60)

The collegial relationships among team members that extend into the whole school faculty will be an important factor if experimentation and action research are to become part of the whole school culture.

Systems and Networks that Support Learning and Experimentation

The Learning Leadership Team cannot operate in a vacuum. They require the resources to pursue initiatives, professional development, action research, and ongoing relationships with outside experts. Given these conditions the team affects the growth of the whole school as a learning environment that has its vision centered on long-term improvement rather than on short term dictates. The teacher technologist, as part of the Learning Leadership Team, provides the latest systems, hardware, software, and support to facilitate the growth of knowledge building.

BRIGHT Ideas to Build On

- There are hundreds of tested ideas that engage learners in higher order thinking. Try the list generated by the Generation YES blog authors at: <http://constructingmodernknowledge.com/cm08/?p=1099>
- Adopt Blooms Taxonomy at HOTTs Higher Order Thinking Technology Skills <http://www.freetech4teachers.com/2011/04/hotts-higher-order-thinkingtechnology.html>
- What is the relationship between student engagement and achievement levels? This Canadian research study, *What did you do in school today?*,

explores the connection. <http://www.cea-ace.ca/sites/default/files/cea-2009-wdydist.pdf>

- This study was followed up with a teacher effectiveness framework ,developed by Sharon Friesen, that provides five principles for teachers to apply plus a useful rubric to help teachers improve their design of learning experiences.
 - Principle 1 - Teachers are Designers of Learning
 - Principle 2 - Work Students are Asked to Undertake is Worth Their Time and Attention
 - Principle 3 - Assessment Practices Improve Students Learning and Guide Teaching
 - Principle 4 - Teachers Foster A Variety of Interdependent Relationships
 - Principle 5 - Teachers Improve Their Practice in The Company of Their Peers

<http://www.cea-ace.ca/publication/what-did-you-do-school-today-teaching-effectiveness-framework-and-rubric>

Sharon Friesen (2009)

- As the learners approach a new topic, would they be able to generate better and better questions that could be prompted by working in the following matrix?
<https://spreadsheets.google.com/spreadsheet/ccc?key=0Ap3yb3UOI0YcdE2M1dtNGdwcUxWaG1IdjgzTWN4NUE#gid=0>
- Or, if they were to encounter a huge number of resources on a current topic, would they know how to sort through the jungle?
<http://zomobo.com/>
- Sharon Nelson shares her recommendations for assisting students in the building of e-portfolios at:
<http://thejournal.com/articles/2011/06/29/3-keys-for-a-successful-eportfolio-implementation.aspx>
- Explore Paul Saffo's notion of a third kind of knowledge (what really matters) at: <http://stupidgoogle.wordpress.com/2010/09/14/the-third-kind-of-knowledge/>

- Discover Eli Pariser's warning about Web Personalization:
<http://www.thefilterbubble.com/ted-talk>
 - Study the Partnership for 21st Century Learning's Common Core Toolkit at:
http://www.p21.org/index.php?option=com_content&task=view&id=1005&Itemid=236
 - A Brief History of Knowledge Building uncovers knowledge building principles <http://www.cjlt.ca/index.php/cjlt/article/viewArticle/574>
 - Success in deep learning is being reported when learners study a topic throughout their schooling at: <http://www.iereg.net/LiD/>
 - Check out the myths about Project Based Learning at:
http://www.fluency21.com/blogpost.cfm?blogID=2092&utm_source=Committed+Sardine+Blog+Update&utm_campaign=da3eba5afc-RSS_EMAIL_CAMPAIGN&utm_medium=email
 - Gary Sager's rules learned from Seamour Papert's final work:
<http://blog.genyes.org/index.php/2011/06/08/8-big-ideas-of-the-constructionist-learning-lab/>
 - Explore how to build a Human Library <http://humanlibrary.org/>
-

Scenarios Of Knowledge Building In Action

- **A Major Decision.** Every year, the sixth graders chose a location for a class excursion, but the teacher noticed that the decision was usually based on popularity and whim rather than sound decision making practice. Enlisting the support of the teacher librarian and the district technology coordinator, a research project ensued. Using a Google spreadsheet so that everyone could be working simultaneously, the students collected facts about specific locations on class-designed acceptability criteria: travel time, cost, fun factor, accessibility for all students etc. The teacher librarian taught not just how to find the answer to put into the spreadsheet but why accurate information was so very important. All three teachers became coaches. When the spreadsheet columns and rows

were filled with data, the coaches asked the students what they should do now. The idea of reducing the size of the matrix developed, since any remote location, for example, would eliminate that excursion from consideration. Locations were eliminated until the last remaining were those that met all criteria. Accurate information and the process of decision-making were talked about over and over. Students ended up being confident that they had chosen the right excursion and they understood the basis on which good decisions are made.

- **A Big, Big Think.** When the state governor made a proposal to the regional state governors that they move on multiple fronts to work on the energy crisis, one school's science teacher thought that teenagers just might make a contribution. Mentioning the governor's idea, the science teacher suggested that the entire high school, and perhaps surrounding high schools could take on the governor's challenge. The school principal presented the idea at the first meeting of the professional learning community and there was a round of applause, and a "let's do this" from the entire faculty. Specialists, classroom teachers, community, experts, and excited students began the plans. The professional learning community demanded that the project be based on two major principles: careful research to produce deep understanding of the energy crisis, and a year-long reflection on the skills needed by the students that would enable them to make a sound contribution to a major problem. Thus began their journey. Every week rotating class reflections were scheduled: What do we know now? What skills do we need to advance further? What do you, as a reader, think could have happened? And just why is metacognitive activity done on a regular basis?
- **Action!** In a meeting of the professional learning community, the math teacher was warning that more attention be devoted to math in the school. The P.E. teacher noted that 9 year olds needed more time in physical activities because of a major national study showing a drop in activity at that age, and, the teacher librarian demanded more time for the kids to connect to literature in order to raise reading scores. The technology director suggested to the group that all three competing agendas be combined into a single initiative. There was silence. Then, ideas! They named the project "Run a Chapter". A class committed to run daily while listening to a whole chapter of a book on MP3 players, taking and recording data of heartbeats before and after the run, then calculating individual performance, group performance and school performance as part of an effort to build understanding of applied math. Reflection sessions held once a week did data analysis, had discussions about math operations, principles of health, and of the stories to which they were listening. Students invited the mayor to the school

for a tour of the entire project, and he presented the students with a special fitness award at a final assembly of the year. He also passed out coupons to the city recreation center for summer fun, and the public library linked their summer reading program into the recreation center program.

- **Way Beyond all About.** The primary division in a remote rural school met with the teacher librarian to plan a unit on Cultures of the World. New books were ordered and appropriate video and web materials sourced. During a final planning meeting one of the teachers happened to mention a web site she had just discovered where a primary teacher, Kathy Cassidy, was using a wiki and connecting with other classes around the world to reinforce math concepts. She shared the link <http://primaryweb2.wikispaces.com/> and it sparked all kinds of ideas for learning with other cultures, not just about them.

Over to You. Discuss with your group or the authors:

- What experiences have you had with learning units co-taught by classroom teachers and specialists? What were the successes? The challenges?
- Have you had experiences with the Big Think at the end of a learning unit that help learners explore both the collaborative intelligence of what they know, but also the metacognitive journey in getting there?
- If you are having trouble engaging students, consider Brian Harris' seven ways to go from on-task learners to engaged learners at:
<http://ascd.typepad.com/blog/2011/06/on-task-doesnt-mean-engaged.html>

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Professional Organizations

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- International Society for Technology in Education (ISTE) <http://iste.org>
- Canadian Association for School Libraries (CASL)
<http://www.cla.ca/AM/Template.cfm?Section=CASL2>
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“Look for me in the whirlwind” Actions, Outcomes and Evidence

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- **The principal goal of education in the schools should be creating men and women who are capable of doing new things, not simply repeating what other generations have done; men and women who are creative, inventive and discoverers, who can be critical and verify, and not accept, everything they are offered. Jean Piaget (1896–1980) (Piaget, 1988)**

Background

At the International Association of School Librarianship Conference in Kingston Jamaica August 2010, I gave an invited plenary address titled: *“Look for me in the whirlwind”*: *Teaching the 21st century learner*. The statement *“Look for me in the whirlwind”* was made by Marcus Garvey (1887-1940), a journalist and publisher, and a strong, vocal and controversial leader in Jamaica’s journey to social and racial equality, human rights and improved working and living conditions. He challenged all: “Our union must know no clime, boundary, or nationality... let us hold together under all climes and in every country...” In his powerful example of actively participating in this journey, he declared: *“Look for me in the whirlwind”* (official website: <http://www.marcusgarvey.com>) and urged all Jamaicans to be of one accord, to engage in the discussion, the debate and the controversy as part of defining and re-engineering a bright future for the country. He did not promise that this would be an easy journey, rather, a whirlwind. Whirlwinds, as we know, arise out of instabilities and turbulence, they are powerful and unstoppable, have potential for and often generate enormous destruction, and in their wake, provide opportunities for enormous reform. There is a sense that at this time in the history and development of school libraries, a whirlwind challenges us, characterized by financial and budgetary woes, the cost of maintaining infrastructure and personnel, the perception that they are an unnecessary budget item in the wake of the vast quantities of information on the internet, and sometimes the perceived invisibility of the connection of school libraries to learning outcomes. It is a painful and emotional journey for some. This whirlwind provides significant opportunities for school library leaders to question the future, to

reimagine and reengineer a preferred future, and to be part of the whirlwind. In the words of the American social reformer Frederick Douglass:

"It is not light that we need, but fire; it is not the gentle shower, but thunder. We need the storm, the whirlwind, and the earthquake."

(http://thinkexist.com/quotation/it_is_not_light_that_we_need-but_fire-it_is_not/206380.html)

Against this backdrop, this paper provides an overview of three recent research projects that shed light on the future of school libraries, identifies some key findings that provide insights into and challenges for the ongoing development, re-imagining and re-engineering school libraries. The re-engineering of school libraries into flexible, dynamic, high-tech 21C learning centers designed to prepare students to function effectively in an increasingly complex informational and technological world is challenging and complex, and understanding the challenges and taking action is essential.

The three sources of data

School Libraries 21C: School Libraries Futures Project commissioned by the School Libraries and Information Literacy Unit of the NSW Department of Education and Training in Australia in 2009. (Hay & Todd, 2009a; Hay & Todd, 2009b)

New South Wales Association of Independent Schools/Catholic Education Commission Quality Teacher project. *Guided Inquiry*. (Fitzgerald, 2011; Sheerman, 2011)

Todd, R., Gordon, C., & Lu, Y-A. (2010) Report of Findings and Recommendations of the New Jersey School Library Survey Phase 1: One Common Goal: Student Learning. New Brunswick, NJ: Center for International Scholarship in School Libraries (CISSL), Rutgers, The State University of New Jersey

School Libraries 21C: School Libraries Futures

This project was commissioned by the School Libraries and Information Literacy Unit of the NSW Department of Education and Training in June 2009. The complete report is available at the School Libraries and Information Literacy website <www.curriculumsupport.education.nsw.gov.au/schoollibraries/>. Through a the moderated discussion blog, the project sought to gather a diverse range of viewpoints and perspectives on the status and future of school libraries in schools, with a view to identifying directions, challenges, and support for the continuous improvement of the information landscape in schools. The online discussion took place from June 1 to August 3, 2009. The themes and focus questions for the discussion were:

1. The future of school libraries
 - (1a) Do we need a school library in 21st century schools?

- (1b) How, if at all, do current school libraries impact on student learning?
2. The school library of the future
- (2a) What would a school library of the future look like?
- (2b) What would be its primary responsibilities and functions to meet the learning goals of schools?
- (2c) What would be the essential work of the teacher librarian?
- (2d) What would be its key impacts on student learning?
3. What will it take to get there?
- (3a) Identify strategies / initiatives / support at the practitioner level
- (3b) Identify strategies / initiatives / support at the school level
- (3c) Identify strategies / initiatives / support at the NSW Department of Education level

In total, 225 submissions were posted by individuals and school, team and professional network groups. It was clear that school libraries were viewed as a vital part of school life. There was a common belief that they provide a common information grounds for supporting learning across the school and fostering the development of deep knowledge through the provision of accessible resources, and the development of sophisticated information and technology understandings and skills. Its central role in the culture, learning and ecology of the school was also identified:

'Libraries in schools are like a huge tree in a vast paddock - in that they have their own ecosystem. Pull that tree out and what happens to the life that relied on it?' (1A.5).

(Note: codes refer to statements as documented in Hay & Todd, 2010a)

As one high school principal observed:

21st century school libraries remain the backbone of schools. They are changing - reflecting our world and our values. There will always be the need for resources - books, media, and electronic sources. A critical feature of this will always be the ways in which information processes are taught and dispersed throughout student, teacher and parent world. Crafty teacher librarians who are at the cutting interface of technology will be needed to meet the very much individualized learning needs of clients..... I see a thriving centre of learning - and something that is integral to the way the whole school functions." (1A.36)

Against this backdrop of the information-to-knowledge journey of students, some respondents spoke of the school library as a *knowledge commons* or a *learning commons* - a common place, *'a shared space for all students and the community'* (1A.43). This conception gives emphasis to the library as an intellectual agency for developing deep knowledge and understanding, rather than that of information collection. Some participants saw the need of a shift in focus to *'a focus on learning action, rather than information provision'* (1A.25).

One major advantage of this 'commons' approach is the marrying (and in many cases, reconciling!) of library/information and technology departments, people, resources and services within an educational institution to better reflect this convergence of information and technology within a digital society. (1A.15)

The concept of *pedagogical fusion* aligned with information literacy development emerged as a central theme. The notion of pedagogical fusion centered on the school library providing a common place across the school for investigating and experimenting with information, examining multiple perspectives, in an environment where students are guided by professionals and given appropriate instruction to effectively utilize information and the most appropriate technology tools to support student achievement. As such, it was conceived by participant as a unique learning environment – common, central, flexible, open, providing the opportunity for teams engaging in pedagogical experimentation to access and use information and web tools to empower learning through creativity, discovery, inquiry, cooperation, and collaboration.

The notion of the school library as a learning commons brings to the fore its central function: that of a pedagogical center. As a unique learning environment, the school library functions primarily as a pedagogical center for all faculty and students nurturing intellectual growth, pedagogical expertise, and key learning outcomes through their engagement with information in all its forms, and through an inquiry-centered pedagogy that engages students in discovery, inquiry, knowledge building, critical and reflective thinking, and creativity. As a pedagogical center, it is a common instructional zone for the whole school, where students learn to learn through information, and where this learning is led by professional information-learning specialists who have pedagogical expertise with both inquiry-based learning and resource-based learning. The overriding function, as conveyed by focus group participants, was instruction, not the provision of information, and the school librarian was portrayed primarily as a co-teacher and teacher team leader. Accordingly, the school library becomes an important zone of intervention and socialization process for learning how to function effectively in the complex informational and technological world beyond school, and the development of digital citizens. Participants also provided rich insights into what a school library of the future would look like. From these responses, a set of principles underpinning 21C school library design emerged. These include

- A facility which features *fluid library design* that allows for the customization and personalization of learning, where space is iterative, agile, transitional, transformational, evolving, and shifting based on the needs of individuals, small groups and whole classes.
- A *blended learning environment* which harnesses the potential of physical learning spaces and digital learning spaces to best meet the needs of students, teachers and parents, both in school, at home or by mobile connectivity.

- A learning center whose primary focus is on *building capacity for critical engagement* – giving emphasis to thinking creatively, critically and reflectively with information in the process of building knowledge and understanding.
- A *center of learning innovation* where teachers and teacher librarians are involved in creatively designing learning experiences by way of testing, trialing, and experimenting with information and tools to bring about the best knowledge outcomes for students.
- A learning environment that demonstrates the *power of pedagogical fusion*, where pedagogy underpins the decision making behind a school's information architecture – where technology infrastructure and support services, networked information services and provision of access do not restrict innovative and flexible use of space, resources or expertise.
- A facility consisting of *seamless search interfaces* enabling intuitive access that supports 'conversation' with the user as an interactive tool for inquiry and discovery.
- A facility which seeks a *balance between print and digital collections* and which does not privilege one format over another, consistent with the multi-format nature of our information world.
- A center that supports *literary learning*, where students become immersed in imaginary worlds, explore personal reading interests, develop sustained voluntary reading practices, develop reading for meaning and independence as critically-capable readers (Hay & Todd, 2010a, 34-35).

Against this context, what then is the nature of the pedagogy that characterizes the school library as a learning commons? I firmly believe that one of the key challenges is moving beyond an information-centric pedagogy, to an inquiry-centered pedagogy. For some decades now, information literacy has been a predominant locus of rhetoric and practice in school libraries. At best I would posit that while the arena of information literacy and information literacy instruction have developed considerable complexity, it is surrounded with multiple contradictions including terminological confusion, and a plethora of understandings, definitions, descriptions and models of information literacy. In addition, there has been little exploration of what constitutes meaningful pedagogy for information literacy instruction beyond the teaching of information handling skills.

We are bombarded with information literacy models and schemas. (Take a moment to do a simple image search on Google to see the extensive range of practice-centric information literacy models and schemas). There is a plethora of research models, process models, attribute models, skills typologies, information literacy standards, experience-based models, relational models, and inquiry based approaches. (A good review of these is provided by Kerr, 2010; Gibson, 2007). Many of these models are without theoretical foundation, and not derived from systematic research to be strongly tested and validated models; they often do not take into account research validated patterns of information seeking. For example, a number of models have central

information concepts such as defining, locating, selecting, organizing, presenting and evaluating information. They typically start with "defining information needs" whereas research indicates that information users often lack well-formed statements of information needs and are unable to articulate gaps and anomalies in their existing knowledge that enable them to interact with information systems, services and sources in meaningful ways. Some models rely on a problem-solving rhetoric. Often, the need for information and its use are situated in circumstances that are not as well-defined, discrete, and monolithic as problems (Doty, 2003). These models often articulate numerous performance indicators which are considered best practices for the implementation and assessment of information literacy programs. They typically do not take into account individual differences, and assume that all who come together to engage in information literacy instruction are at the same place in thinking, expertise, and indeed, need. Sterile, generic and decontextualized information literacy curriculums abound; scope and sequence models of Information Literacy which are devoid of disciplinary content, typically treat information literacy as a separate discipline (the librarian teaches information skills; the content is left to the disciplinary instructor). In addition, a growing body of research findings suggest that the focus of much information literacy instruction puts emphasis on engagement with information sources, rather than the knowledge-based competencies of engaging with found information to build knowledge ((Todd, 2008; Kerr, 2010, 300-301).

Educational systems around the world are adopting orientations and practices that can be labeled as evidence-based education. Central characteristics include an emphasis on scientifically-based research to provide foundation for learning and instruction, and a focus on scientifically-based research as a framework for professional decision making and action. Davies, for example, argues that turning to evidence-based education would make education less vulnerable to "political ideology, conventional wisdom, folklore, and wishful thinking", not to mention "trendy teaching methods" (Davies, 1999, 109).

It is my belief that information literacy practice needs to implement research-based and research validated information literacy models as a foundation for effective practice. Few such models actually exist. Kuhlthau's model of the Information Search Process, developed in the 1980s and refined in the 1990s is a significant exception (Kuhlthau, 2004). Since its conceptualization and development, the model has been used as a framework and diagnostic tool for understanding the information search experience of people in a variety of library and information settings, and as a framework for developing instructional interventions to support the information-to-knowledge journey of people in a range of library settings, particularly school and academic libraries. The model is founded on the belief that learning is a process of personal and social construction developed by influential 20th century educational thinkers such as John Dewey (1859-1952), George Kelly (1905-1967), Jerome Brunner (1915 -), Jean Piaget (1896-1980), Howard Gardner (1943 -) and Lev Vygotsky (1896-1934). According to Kuhlthau's research, the Information Search Process has been found to occur in seven stages: Initiation, Selection, Exploration, Formulation, Collection, Presentation, and

Assessment (Kuhlthau, Maniotes & Caspari, 2007, 19). These stages are named for the primary inquiry task to be accomplished at each point in the process. Each of these stages provides opportunities for instructional interventions that integrate cognitions, emotions and behaviors, and enabling people to progress on their information-to-knowledge journey. A review of the application of this model to an extensive range of research and professional contexts is provided by Kuhlthau, Heistrom & Todd (2008).

Kuhlthau's Information Search Process underpins the elaboration of an inquiry-based pedagogy for the school library, known as Guided Inquiry (Kuhlthau, Maniotes & Caspari, 2007). The approach lends itself to planning and developing instructional interventions which focus on the complex cognitive processes of discovery, questioning, knowledge construction, knowledge sharing, critical thinking and reflection – the core goals of school libraries as pedagogical centers.

The AASL Standards for the 21st Century Learner (AASL, 2007) targeted for school libraries are an important step in this direction. They are set within a knowledge construct, and are framed around four themes which center on the skills (key abilities needed for understanding, learning, thinking, and mastering subjects); dispositions in action (ongoing beliefs and attitudes that guide thinking and intellectual behavior that can be measured through actions taken); responsibilities (common behaviors used by independent learners in researching, investigating, and problem solving), and self-assessment strategies (reflections on one's own learning to determine that the skills, dispositions, and responsibilities are effective). The four themes are: 1. Inquire, think critically, and gain knowledge. 2. Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge. 3. Share knowledge and participate ethically and productively as members of our democratic society. 4. Pursue personal and aesthetic growth. The *Guided Inquiry Quality Teacher Project* conducted in Australia from 2008-10 gives insights in how this framework can be used.

Guided Inquiry Quality Teacher Project

In 2008-2010, an Australian project *Guided Inquiry* was funded through the New South Wales Association of Independent Schools/Catholic Education Commission Quality Teacher project, and part of a broader Australian Government Quality Teacher Program (AGQTP). The AGQTP focus centered on taking professional standards into practice, with emphasis on: innovation in learning and teaching; technological landscape; use of evidence-based practices; research-based pedagogical models, and collaborative instructional teams. The project involved collaborative teams of classroom teachers and school librarians working with classes from twelve independent schools in New South Wales implementing Guided Inquiry instructional units centering on selected curriculum objectives.

The purpose of this project was to

1. understand the dynamics of developing and implementing collaborative inquiry units based on the Information Search Process model;
2. track and understand how students build on their existing knowledge of a curriculum topic and how their knowledge of a topic changes;
3. examine the transformation and integration of found information into existing knowledge, and the creation of new personal knowing, and reflective processes; and
4. use the Student Learning Through Inquiry Measure (SLIM Toolkit developed by CISSL and available at www.cissl.rutgers.edu) for measuring and charting knowledge development

Specifically, the project involved 34 teachers, 18 teacher librarian and 935 student participants. The essence of this project was to engage teacher/school librarian teams to develop, implement, measure and evaluate curriculum units, underpinned by a range of instructional interventions to develop a range of information, technical and critical literacies, and employ systematic tools to track the development of student's knowledge of their curriculum topics, as well as information capabilities, and to reflect on the learning outcomes and learning process.

Following professional training, each school developed an open-ended research task with Guided Inquiry scaffolding, which was carried out in the schools. Most projects were in Years 7-10, with 8 in History, 1 each in English and Personal Development, Health and Physical Education, 2 in Geography and 1 in Science. Two elementary schools were involved, with projects in Year 5 Geography and Year 4 Science. All projects had significant teaching input from teachers and school librarians.

Each inquiry unit involved:

1. use of the Information Search Process as the instructional design framework;
2. planning of instructional interventions to initiate the project, to help students select topics, build background knowledge, develop specific focus questions, analyze, synthesize, deal with conflicting knowledge, develop arguments, and develop personal positions and perspectives;
3. an area of inquiry which allowed students freedom to develop their own focus questions; developing and using existing background knowledge;
4. high quality resources for students and instruction in their use;
5. the presence of teachers and school librarians at each stage of the process to guide and intervene;
6. the integration of the Student Learning Through Inquiry Measure (SLIM) Reflection Sheets as an evidence-based practice approach to assessing learning; and

7. the gathering of data from students at three points of the Information Search Process - at Initiation, at Collection, and at Assessment stages of the Information Search Process.

An extensive range of instructional activities were thus made available through a Wiki site to all participants as examples of specific interventions. These included interventions such as "building background", "creating questions", "initial question development", a range of "note taking" scaffolds, scaffolds to support analysis of information, developing deep perspectives, critical analysis, topic selection, and peer review processes. A key features of the instructional interventions was a predominant focus on complex knowledge building and information transformation tasks, such as question formulation, analysis, synthesis, interrogating diverse viewpoints and perspectives, developing arguments, developing conclusions, addressing implications, critical reflection, and learning to structure their outcomes in ways that conveyed the complexity and richness of what they had learned. This was so that students could progress from collecting sources to engaging with the collected information to build deep knowledge and understanding. Typically these interventions are weakly developed in traditional information literacy instructional units.

The school teams were responsible for analyzing the data that were collected in their schools, using the handbook provided with the SLIM toolkit (also available at www.cissl.rutgers.edu). As part of the grant reporting process, each school was required to submit a formal report of the process, including statements of learning outcomes based on the SLIM analysis, as well as reflections on the process and outcomes by the instructional teams. This is currently being analyzed and will be published in due course. Two reports from two schools involved in the project have been published (Fitzgerald, 2010; Sheerman 2011). Based on this data analysis, eight key common dimensions have emerged. These are:

1. Teaching for enabling students to engage in quality research is simply hard work: engagement, reading for learning, writing to demonstrate learning, and constructing knowledge require complex planning, co-ordinated delivery and thinking about the whole learning journey of the student;
2. The ISP approach works as a key learning diagnostic: helps identify roadblocks in terms of: engaging with diverse information sources, reading for meaning, reading with focus, transitioning from reading to writing, providing analytical frameworks for engaging with various texts to construct meaning with focus and efficiency;
3. Developing students as quality researchers embraces multiple literacies that need to be fostered and taught. This goes beyond the traditional list of information skills; rather it involves visual literacies, social literacies, emotional literacies, and project management capabilities;
4. Valuing of staged approach and formative assessment along the information-to-knowledge journey: instructional support throughout the entire research process,

and not abandoning students at the critical period of knowledge building, that is after the Collection stage of the ISP;

5. A key component of reading for meaning is building on prior knowledge, and connecting the desired learning outcomes to real world significance. This builds ownership of learning, interest and motivation;
6. Understanding of the complexity of knowledge building: teachers witnessed the struggle of students to narrow broad topics and develop deep focus questions that direct their inquiry; saw just how complex it was for students to engage in question formulation; and saw how students were challenged to craft arguments; conclusions, positions. Transforming found information into personally held knowledge is a key instructional challenge, and one that needs ongoing support, reinforcement and feedback;
7. Reading and writing for meaning takes time. Collaborative teams working together means that time, expertise and instructional load are shared, enabling focus on individual needs. A bonus is that through sharing of expertise, there is ongoing learning from one another as teachers; and
8. The interest and engagement of students as they developed their own focus questions and directed their own inquiry fostered further development of students' love of reading and desire to read more. Their research, which answering a focused question, provided opportunities to raise further questions and open up opportunities for pursuing personal interests.

One Common Goal: Student Learning: New Jersey in Action

The third source of data to illustrate directions and challenges for school libraries comes from data collected in Phase 1 of a research study commissioned by the New Jersey Association of School Librarians (NJASL) in 2009 and undertaken by the Center for International Scholarship in School Libraries (CISSL) at Rutgers University. This research provides a comprehensive picture of the status of public school libraries in New Jersey: their infrastructure, personnel, resource and information technology provision, and the instructional and administrative work of the school librarians. It used a voluntary online survey to collect data from 765 school librarians from all counties of New Jersey. The sample comprised 30% of the schools in New Jersey. In addition to the survey questions, data were also collected from analysis of TitleWise, a database created by Follett Library Resources that contains descriptive statistics of book collections in participating school libraries. School librarians who are not users of the Follett Library Resource's TitleWise database responded to additional survey questions about their book collections. This provided us access to an extensive body of accurate school library collection data.

As summarized in the Executive Summary of Phase 1 report (available at www.cissl.rutgers.edu), this study concluded that school libraries are a vital and important part of New Jersey's schools. The findings showed that New Jersey school libraries and the work of school librarians contribute in rich and diverse ways to the

intellectual life of a school, and to the development of students who can learn and function in a rich, complex and increasingly digital information environments. It concluded that school libraries in New Jersey that are staffed by certified school librarians provide common information grounds for supporting learning across the school through engagement with information, with particular emphasis on developing students' abilities to interact with information and to use it to learn well, and in addition, is a critical dimension in supporting reading and literacy development in the schools. This contribution is underpinned by an information and technology infrastructure and enabled through strong instructional, service, and administrative roles of school librarians.

The research found that the instructional role of school librarians was a predominant characterization of the school library landscape in New Jersey. The large number of collaborations developing information literacy capabilities, as well as large numbers of cooperations and coordinations, show a strong level of engagement in teaching and learning. In a substantive number of studies done on school library collaborations, it has often been reported that low levels of instructional collaborations exist. The study documented that 19,320 cooperations, 11,179 coordinations and 3,916 collaborations were undertaken during the 2008-2009 school year. It found that on average, school librarians contributed 27 cooperations, 15 coordinations and 5 instructional collaborations with classroom teachers during the school year. More specifically, elementary school librarians contributed 14 cooperations, 6 coordinations, and 3 instructional collaborations during the school year. Middle school librarians contributed an average of 35 cooperations, 20 coordinations, and 8 instructional collaborations during the school year. High school librarians contributed an average of 45 cooperations, 32 coordinations, and 9 instructional collaborations during the school year (Phase 1 report, 104-105).

New Jersey's findings of high levels of instructional collaborations are likely to be attributed to a number of factors as identified in the Phase 1 study:

- 84.5% of the sample is New Jersey state certified school librarians, either at the master's level of certification (58.9%) or associate certification level (having completed 18 credits).
- On average, 52.5% of school libraries have some level of support staff working in the school library, freeing up time for school librarians to engage in instructional collaborations
- Capitalizing on opportunity to interact with classroom teachers at grade level meetings, team level meetings and department level meetings when these are held in schools;
- Commitment to providing professional development to the school community: 63% of participants in the Phase 1 study were involved in the provision of professional development in relation to information literacy in their schools; 72.8% of participants are involved in the provision of

professional development in relation to information technology in their schools;

- Strong commitment to inquiry-centered instruction and a belief that this is best undertaken through collaborative partnerships with classroom teachers. The school library specialization in the MLIS program at Rutgers University has a foundation in constructivist learning theory and inquiry-based learning;
- Establishing strong communication channels in their schools: 96.1% of school librarians meet with their school principal during the school year; 74.4% of school librarians meet with curriculum supervisors during the school year.

Phase 1 of the NJASL study provided evidence of the contribution of the school library to the development of the whole child and to the mission of its school. The school library is portrayed as an agency for intellectual development and for the social and cultural growth of students as they grow up in a complex and diverse information world. Based on qualitative responses by 721 school librarians, New Jersey's school libraries appear to contribute to learning outcomes in six key ways:

1. Contribution to development of curriculum standards, including mastery of content standards and contribution to test score achievement
2. The development of resource-based competencies, centering on library operations, mastery of a diverse range of information literacy competencies
3. The development of research process and learning management competencies, centering on the mastery of explicit aspects of the research process, inquiry processes, strategies of independent learning, and research project management
4. The development of thinking-based competencies, in particular the processes of thinking, analysis and synthesis that create knowledge and the representation of knowledge through a range of products
5. The development of affective, personal and interpersonal competencies, including the development of positive and ethical values in relation to the use of information, increased motivation and interest for engaging with information for learning and working effectively with others in research activities
6. Outcomes related to the development of reading, including increased interest in reading increased participation in reading, the development of wider reading interests, and becoming more discriminating readers. (Phase 1 Report pages 160-168)

The following statements capture the power of the story:

"Students have developed some higher order thinking skills, reading strategies, making connections to texts, world and self"

"Their thinking, comprehension and communication skills have been developed"

"Students demonstrate research organization, integration of new knowledge, properly crediting sources"

"Students are developing awareness of ethical issues in information and communication"

"I see positive changes in interest and motivation, not just for using the library but school work in general"

"Students have come to discover that the school library is the gateway to academic achievement through their exposure to the use of information technologies in the library, such as electronic databases, AVs etc. These have gone a long way to motivate them to learning"

"Students in some cases have achieved a calmer and more efficient attitude to their specific skills. They have found new interests to increase motivation in other areas"

"Motivation goes up, goals are easier to reach, curricula is mastered, technology becomes more helpful, and information is gained: resulting in success at tasks and gain of knowledge"

"The students' attitudes towards research and literacy have improved this year. What they viewed as frustrating and insurmountable is now viewed as a "do-able" project"

"Through the school library students respect different ideas and differences with people and themselves more"

"Group research projects have taught some students how to work better together and in teams"

The challenge of evidence

Emerging out of both the *School Libraries 21C: School Libraries Futures* and the *New Jersey One Common Goal: Student Learning* was the challenge of specifying evidence. In both projects, participants were explicitly asked to provide local evidence of the result of their school library impacting student learning. While certainly there was a useful body of evidence collected, there were two shortcomings. First, there was a tendency to specify actions that are assumed to lead to student learning impacts (which were not specified). The assumption appeared to be made that actions and processes undertaken automatically imply positive learning outcomes, and accordingly, there was little attempt to state the actual outcomes, or to document how the impacts based on actions

were measured. There was clearly the implicit assumption that by virtue of actions, outcomes happen, and that these are positive, immediately visible and known. Such statements confirmed a number of important aspects:

- a strong view that the professional expertise of qualified teacher librarians was central to enabling the actions.
- the belief that developing a range of information- and technology-based competencies and understandings in students is *the* central action of the teacher librarian in supporting student achievement.
- the provision of quality resources was also viewed as a central action leading to student achievement.
- collaborative actions were seen as a key input leading to student outcomes.
- the acknowledgment that personal interactions and interventions underpin actions that lead to student outcomes.
- a range of actions centered on fostering a reading culture within the school is necessary.

However, while school librarians were more adept at documenting outcomes related to information literacy and information technology competencies, and reading interest and motivation, and increased library usage, there was overall weak ability shown in relation to documenting knowledge-based outcomes, which are at the heart of the AASL's *Standards for the 21st-Century Learner*. It is my view that as school libraries transform into Learning Commons, iCenters, Knowledge Centers or the like, the development of evidence-based strategies and tools for charting knowledge-based outcomes is imperative. Basing outcomes statements on personal experience, intuition, unstructured observations and / or anecdote, and informal approaches, rather than systematically gathered, empirical evidence, is not a tenable nor convincing basis for showcasing the learning of the Learning Commons.

As mentioned in the Australian *Guided Inquiry* project, CISSL has developed an approach to measuring knowledge-based outcomes situated in a Guided Inquiry instructional framework. The Student Learning through Inquiry Measure (SLIM) toolkit was developed through an IMLS funded research program and refined from this process, including feedback from participating school teams, critical feedback from the school library research community and further verification from school librarian-teacher teams not involved in the initial research (Todd, 2006).

The SLIM toolkit consists of three reflection instruments / writing tasks to be integrated into the instructional sequence, and which provide data at three stages of the students' inquiry process: at the Initiation stage of the research task, midway during the task (typically at Formulation stage of the ISP), and at the Assessment stage of the task. These reflection instruments capture students' responses to open-ended questions as well as categorical responses. It enables instructional teams to chart the changes in knowledge of students of their curriculum topics as they progress through the stages of

their inquiry task, as well as provide insights into the learning dilemmas students are experiencing, and how the instructional teams enable or hinder quality learning.

Reflection Tasks 1 and 2 are comprised of the following questions:

1. *Write the title that best describes your research project at this time.* (This gives insights into how students conceptualize and label their knowing about a curriculum topic, and insights into how this may become more focused, specific and clearer)
2. *Take some time to think about your research topic. Now write down what you know about this topic.* (This enables the instructional teams to create descriptions of the students' knowledge of their topic - whether this is a collection of descriptive facts, or their knowledge shows skills of analysis, synthesis, critical thinking, problem solving)
3. *What interests you about this topic?* (To chart changes in interest level)
4. *How much do you know about this topic? Check (✓) one box that best matches how much you know: Nothing, Not much, Some, Quite a bit and A great deal.* (This question provides a simple mechanism for charting students' perceptions of their own growth of knowledge)
5. *Write down what you think is easy about researching your topic* (This provides diagnostic insights into what helps and hinders students in their research so that instructional interventions can be developed to ensure the information-to-knowledge journey is efficient)
6. *Write down what you think is difficult about researching your topic.* (This provides diagnostic insights into what helps and hinders students in their research so that instructional interventions can be developed to ensure the information-to-knowledge journey is efficient).
7. *Write down how you are feeling now about your project. Check (✓) only the boxes that apply to you: Confident, Disappointed, Relieved, Frustrated, Confused, Optimistic, Uncertain, Satisfied, Anxious or Other.* (These data enable instructional teams to chart the rollercoaster of emotions that accompany the research process, and to intervene at the affective / emotional level to support students in their learning.

Additional questions at Reflection Task 3 are:

1. *What did you learn in doing this research project? (This might be about your topic, or new things you can do, or learn about yourself)* (This provides learner feedback and reflection on the learning process)
2. *How did the school librarian help you?*
3. *How did the teacher help you?* (These questions provide input on the role of the instructional teams, and help make claims about the role of the school librarian in the learning process.)

The SLIM toolkit is available from the CISSL website (www.cissl.rutgers.edu). It includes the SLIM Reflection Instruments and Scoring Guidelines, SLIM Handbook, and SLIM Scoring Sheet. The documents provide the rationale and step-by-step

processes for implementing the assessment instruments, for engaging with and analyzing the data, for constructing claims about student learning, and disseminating the findings. The instruments can be used in various settings, involving a diversity of curriculum topics and grades. It takes time to plan for students to use these instruments, and it takes time to collate and analyze the data. In doing so, it can provide a rich pool of evidence of the school library's contribution to learning.

"Look for me in the whirlwind"

School libraries do face significant challenges. At the heart of re-imagining and re-engineering school libraries as visible and essential entities in school, the central dynamics of inquiry-based learning, research-based pedagogy, school librarians as co-teachers, and strong evidence of learning outcomes have to be visible and distinguishing features. Meta-analyses of educational research shows that the most significant impacts on student learning & achievement are the role of teacher and quality of instruction; developing a supportive learning environment; engaging students in discovery, inquiry, thinking, meta-cognition, and knowledge building (Hattie, 2009) Then the school library as the school's physical and virtual learning commons where inquiry, thinking, imagination, discovery, creativity and innovation are central to students' information-to-knowledge journey, and to their personal, social and cultural growth has a significant chance of being realized. Will you be part of this whirlwind?

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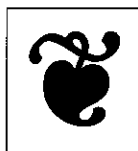
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Potential for inclusion of information encountering within information literacy models

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Abstract

Introduction. Information encountering (finding information while searching for some other information), is a type of opportunistic discovery of information that complements purposeful approaches to finding information. The motivation for this paper was to determine if the current models of information literacy instruction refer to information encountering.

Method. Through a literature search we identified five information literacy models popular in the U.S. elementary and secondary school environment and evaluated their descriptions to determine if they include information encountering. We relied on the literature sources that provide initial descriptions of the information literacy models and the secondary literature that discusses the application of the models.

Analysis. The analysis for the presence of information encountering first included independent readings by the research team members, followed by a collective discussion of observations to formulate the findings.

Results. None of the information literacy models included explicit reference to information encountering or other types of opportunistic discovery of information; however, they all have components that can accommodate this type of information behaviour.

Conclusions. Within each of the five analysed models there are stages where natural occurrences of information encountering are possible and could be articulated for students. Additional empirical research is needed about the impact of information encountering-enhanced models of information literacy on the students' learning outcomes and instructional processes.

Introduction

Information literacy is an important life skill in modern society. For close to three decades, information literacy models have provided pedagogical tools and learning strategies for teaching students about the information research process. These models are used by

teachers in many U.S. schools, from kindergarten to high school, to guide the students through their research projects and help them learn how to use library resources.

Information literacy models typically include a description of specific steps that the students are expected to complete while conducting research. These steps provide useful scaffolding for novice information seekers as they gain more search experience and learn how to address more complex and time consuming research activities. However, the prescriptive simplicity of these steps is criticized by some authors because it does not capture the opportunistic and exploratory dimensions of research activities. For example, George describes the traditional methods of teaching research as 'mechanical and dubiously precise' with no elements of surprise that are the common characteristic of most satisfying and worthwhile discoveries (George 2005: 381). Nutefall and Ryder (2010) have similar views regarding the impact of the imposed structure on students' research writing, commenting that students who are too organized can become engaged in identifying a list of arguments supporting predefined concepts instead of writing an exploratory research paper.

Specific information activities depicted within information literacy models include concepts such as identification of information needs, selection of information sources, information seeking and information use, which have been traditionally the domain of human information behaviour research. The predominant research theme in this field for the last fifty years has been users' information seeking behaviour in various information environments. Based on this empirical research, various models of information problem solving and information seeking processes have been proposed in the literature, many of them having a noticeable similarity with information literacy models. However, during the last fifteen years some information behaviour researchers have become also interested in experiences of opportunistic information discovery that occur naturally in the everyday information activities of many information users. The possibilities for unexpected but important discoveries and insights are especially abundant in the online information environment, which is often a primary resource for students' research projects as well as the information context where they will live and work as information users after finishing their formal education.

Both information literacy (as an applied discipline) and human information behaviour (as a research field) have information seeking behaviour as a shared domain of interest. We believe that there is also a conceptual connection between information literacy models and opportunistic discovery of information, especially the experiences of information encountering (Erdelez 2005). In the context of student research projects, information encountering refers to situations when students search for information on one topic and come across information related to some other topic of interest. As presented above, one of the goals of information literacy is to prepare new generations of information users to use information effectively in an increasingly electronic information environment. Through exposure to information encountering in information literacy models, students could learn

strategies for coordinating their search experience by attending to opportunities provided in the information rich environment.

Based on the above insights, we decided to examine a selection of the most prominent information literacy models for references to information encountering in a research process. The paper first provides background information related to information literacy and opportunistic discovery of information in human information behaviour research, with an emphasis on information encountering. The next section explains the procedures for selection and evaluation of information literacy models, followed by short descriptions of individual models and their evaluation for presence of information encountering. The final section discusses the importance of including information encountering in information literacy models and student instruction and proposes future research on this topic.

Background

The term *information literacy* was coined by Paul Zurkowski in 1974 during his presidency at the Information Industry Association (Eisenberg 2004). Since its then, the topic has garnered widespread attention from many constituencies, such as information professionals, educators, government committees, and the business sector. Since the late 1980s the focus of information literacy has been on the knowledge and skills needed by students in the information environments of the 21st century. This emphasis has emerged in response to the report, *A Nation at Risk*, published by the U.S. Department of Education's National Commission on Excellence in Education in 1983 that presented the declining state of education in the United States (National). By the 1990s *information literacy* had become a term widely used throughout education on all grade levels.

In 1996 the American Association of School Administrators published a report, *Preparing Students for the 21st Century*, listing many skills that students need, including those relating to information literacy (Uchida 1996). Among these skills were: critical thinking, reasoning, and problem-solving skills; skills for using computers and other technologies; ability to conduct research and interpret and apply data; and comprehensive reading and understanding skills. The importance of information literacy was also recognized by the National Education Association, which in its 1996 and 1997 resolutions included the statement that '...equity must be assured as public education works to meet the critical need to prepare all students to become information literate adults and responsible citizens' (National... 1996: 3).

The emergence of information processing models in the early 1980's preceded the educational popularity of information literacy. The models, referred to often as 'research process models,' were developed to help students in elementary and high school settings to acquire research strategies, identify needed information, and structure their time while doing research projects (Kuhlthau 1994). As the concept of information literacy evolved, these models emerged as tools for assisting students in becoming information literate and

in guiding them in an efficient and effective manner through the problem-solving/research process (Callison 2002).

The Final Report of the American Library Association's Presidential Committee on Information Literacy stated that in order to be information literate "... a person must be able to recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information" (American Library Association 1989: 1). This definition is also the basis for the Information Literacy Standards for Student Learning published in 1998 by the American Association of School Librarians and Association for Educational Communications and Technology. This document provides nine standards and twenty-nine indicators that support and expand upon the three broad categories: information literacy, independent learning, and social responsibility. In addition to these standards, various information literacy models became an important part of the strategies established for teachers and library media specialists as they attempted to integrate and address the concept of information literacy within the learning objectives for their students.

In the academic research context, information literacy relates to the study of information seeking and human information behaviour within the field of library and information science. Case (2002) provides the following definitions of these concepts:

- *Information seeking* is a conscious effort to acquire information in response to a need or gap in your knowledge.
- *Information behavior* encompasses information seeking as well as the totality of other unintentional or passive behaviors (such as glimpsing or encountering information), as well as purposive behaviors that do not involve seeking, such as actively avoiding information (Case 2002: 5).

Wilson (1999) provided comparative summaries of several models of information behaviour and information seeking behaviour that share many common characteristics with information literacy models. However, while information-seeking models are more theoretical and provide a basis for hypotheses for further research, information literacy models (research or process models) are oriented towards practical application in the educational setting.

One model that overlaps both theoretical and practical dimensions is Kuhlthau's Information Search Process Model. This model has been used extensively in both information behaviour research and in information literacy instruction. Wilson (1999) recognized similarities and differences between Kuhlthau's model and several other models developed by Dervin (1983), Ellis (1987) and Wilson himself. As Wilson (1999) points out, the difference between Kuhlthau's model and Ellis's model is that the former addresses *stages* of information behaviour while Ellis's model addresses *characteristics* of information behaviour. The elements of Kuhlthau and Ellis's models are complementary and create a natural conceptual connection between information process models in information literacy and human information behaviour models.

Another similarity between information process models and information behaviour models has been their focus on purposeful search for information. Over the last two decades, however, many information behaviour researchers have recognized the importance of serendipity and various forms of opportunistic discovery of information in human information activities (see, Erdelez 1997; Williamson 1998; Toms 2000; Foster and Ford 2002; Foster 2003; Heinström 2006; Björneborn 2008; McBirnie 2008). With the proliferation of the Internet and the Web that facilitate easy navigation and movement across various information resources, serendipitous acquisition of information has also attracted research attention in the context of human-computer interaction and the development of information systems, especially digital libraries (see, Beale 2007; André *et al.* 2009; Toms and McKay-Peet 2009).

Information encountering is one type of opportunistic discovery of information that is especially relevant to the information research process in an educational context. The concept of information encountering, introduced by Erdelez (1997) refers to situations where, during the search for information on one topic, users accidentally find information related to some other topic of interest. For example, while searching the online library catalogue for her science paper on global warming, a student notices interesting images of igloos that she could use for her social science poster.

Figure 1 depicts the functional components of an information-encountering episode as identified by Erdelez (2004). This episode is situated within the context of a *foreground* information search task (e.g., student's search for information on global warming) and is interrupted by noticing information relevant to some other, *background* task or interest, which is currently not actively pursued (e.g., task to find the images of various types of human dwellings for the social studies poster). The model assumes that information users in the course of their everyday lives have many tasks that will require active information search at some future time.

Figure 1 illustrates a simplified, complete information encountering episode in which the user notices the background information, stops the current search, examines the information for relevancy, captures or saves it for future use and then returns back to the original search task. However, in a natural information search process many different scenarios may play out. For example, a student notices background information but does not interrupt the search to examine it, or the student examines the information but skips the capturing step. The model also illustrates the situation in which the user, upon capturing the encountered background information, returns to the foreground task. In real-life information searching, especially in online information environments, users often do not return to the search task they initially started and switch to the encountered information as their new foreground search topic.

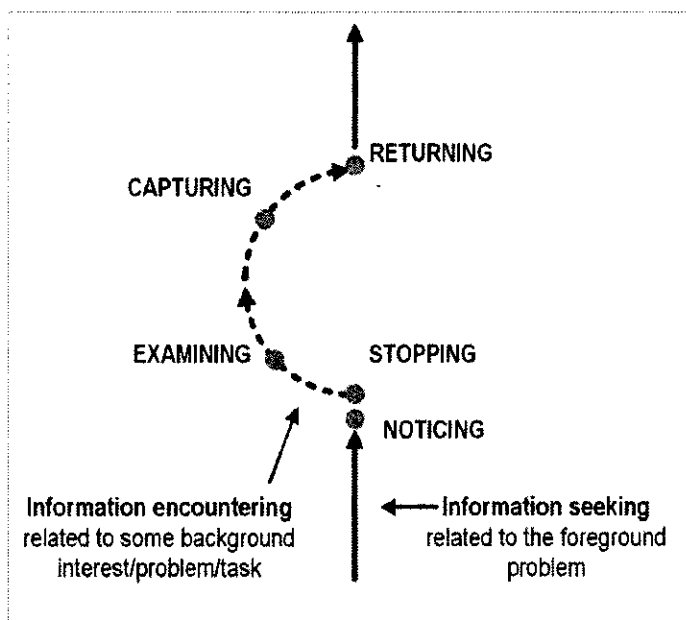


Figure 1. A model of information encountering (adapted from Fisher *et al.* 2005: 181)

Procedures

To evaluate information literacy models for the presence of information encountering, we selected five established information literacy models that have been used in the U.S. elementary schools and high schools. The following models were selected based on their longevity and popularity in the literature:

- Kuhlthau's information search process (1985, 1989)
- Eisenberg and Berkowitz' the Big6™ (1988, 1990)
- Stripling and Pitts' research process model (1988)
- Pappas and Tepe's pathways to knowledge model (1997)
- Jamie McKenzie's research cycle (2000)

These models were selected for evaluation not only because of their prominence but also because of their mutual differences and unique characteristics. For example, Kuhlthau's model serves as the basis for all other models because of the extensive research that the author has conducted in elementary and high school settings. Unlike others' models, Kuhlthau's model includes researcher's feelings during the research process. The Big6™ is probably the most widely used model in schools in the USA and has an emphasis on student's real-time information problem solving. Stripling and Pitts' model focuses on '*making sense out of information*' through reflection and engagement in critical, high-order thinking throughout the process (Veltze 2003: 19). The Pappas and Tepe model focuses on articulating the complexities and nonlinear nature of the search process. Finally, McKenzie's model was included because it emphasizes the use of technology in the research process.

We examined the above models by consulting both the original sources of their publication and the secondary literature. The first level of evaluation focused on descriptive characteristics of the models, such as: 1) the components of the model and 2) the context of its application. The second level of evaluation addressed the analysis of the models' content for the presence of information encountering, especially in the form of tactics that involve the functional elements of information encountering model (Figure 1) as described by Erdelez (2005): noticing, stopping, examining, storing and use of encountered information, followed by returning to the original search task. If the model did not provide either an explicit or implicit reference to information encountering, we tried to identify where this behaviour could be accommodated within the model.

The following section summarizes the key structural elements of each model and presents our findings about inclusion of information encountering. For the reader's additional information, references are provided for each model's source.

Descriptions of information literacy models and inclusion of information encountering

The analysis revealed that none of the five evaluated models include explicit or implicit reference about handling information that students may accidentally encounter in the research process. However, we believe that each of the models can accommodate information encountering and help students become more cognizant of handling such unpredictable opportunities within the research process.

Kuhlthau's information search process

The information search process model is based in the philosophy of constructivist learning that *'involves the total person, the feelings as well as the thoughts and actions'* (Kuhlthau 1994:7) and prepares students to deal with an abundance of available information in a way that has meaning and substance. The intent of the model is to help students understand the process of research, to serve as a guide through a research assignment, and to assist in teaching information skills. Kuhlthau emphasizes that the process was developed in response to a need in an educational setting linked to an assignment or a project. She feels that the *'...process approach gives a new perspective to dealing with students' questions'*. (Kuhlthau 1994: 7). The model involves seven stages and recognizes the feelings that students experience and mood/attitudes that are important for them to succeed at each stage. These feelings change from anxiety to confidence as students move towards the final stages of the process. The key stages identified in the model are: task initiation, topic selection, prefocus and exploration, focus formulation, information collection, search closure, and start writing (Kuhlthau 1994).

An evaluation of Kuhlthau's model revealed that this model provides strategies (e.g., journaling and note-taking) that students may use when gathering information. These strategies are applied during Task initiation, Topic Selection or Information Collection

steps of the model, and can be used to make note of information that is accidentally located and that might relate to other problems or areas of students' interest. By expanding journaling and note taking to include information encountering, the information users can capture encountered information and save it for later use. This activity is similar to so called serendipity-cards which, according to Sawaizumi *et al.* (2007) externalize the serendipitous events from our brains, are 'small enough to be kept in a pocket,' and can be easily used to record a serendipitous event in any situation (Sawaizumi *et al.* 2007: 4).

The Big6™ skills

The Big6™ model was introduced by Eisenberg and Berkowitz (1998) as a problem-solving process built on Bloom's taxonomy of cognitive objectives. It was promoted as a library and information skills curriculum with an emphasis on critical thinking and information problem solving rather than the more limited, traditional emphasis of location and access. Eisenberg and Berkowitz referred to The Big6™ as a process '*to teach students the life-long skills needed to be information literate*' (Eisenberg and Berkowitz 1998: 99). The goal of The Big6™ was to integrate information skills with curriculum content, focusing on real information needs of students. The model was presented in six steps and specific skills were associated with each step of the process: task definition, information seeking strategies, location and access, use of information, synthesis, and evaluation. Even though the model is presented in a linear six steps, the authors emphasize that process is not necessarily sequential and that the researcher/information seeker often loops back through the previous steps.

The Big6™ model has potential to include information encountering in the steps of Task definition, where students search for background information, and Location and access, where students search for information related to their task. During both of these steps, the students are exposed to information sources with a variety of content, which is conducive to opportunities for information encountering. In each step students could be advised to be prepared for information encountering experiences and taught about techniques for capturing and managing encountered information. The emphasis of The Big6™ on the use of technology in a research process makes it even more adaptable to information encountering, since many such accidental findings of information involve the use of the Web. For example, common types of information encountering on the Web are situations when useful information is encountered while scanning the list of items retrieved by a search engine, whereas certain query features have more potential for serendipity (Beale 2007; André *et al.* 2009;).

The Stripling and Pitts research process model

This model focuses on thinking and reflection during the research process and the need to use and teach thinking skills: '*The thinking frame for research (which serves as a guide for how to think rather than for what to think) is the research process*' (Stripling and Pitts 1988: 19). The model was developed as a guide for research assignment projects planned for students

from kindergarten to twelfth grade (elementary and high-school). The emphasis on thinking and reflection helps to avoid shallow and mundane research results that do not reflect what students think about the research. It is a ten-step process and included within each step are teaching and learning strategies with focused study and thinking skills, providing a guide for students to follow when doing research. The steps are: choose a broad topic; get an overview of the topic; narrow the topic; develop a thesis or statement of purpose; formulate questions to guide research; plan for research and production; find, analyze and evaluate sources; evaluate evidence, take notes and compile a bibliography; establish conclusions and organize information into an outline; and create and present a final product (Stripling and Pitts 1988).

The Stripling and Pitts model may be adapted to include information encountering at the second through the sixth level of its research taxonomy, when students are given responsibility for most of the research process. These steps include the following activities: narrow the topic, find and analyze sources, and evaluate evidence and take notes. Similar to Kuhlthau's model and the Big6™ model, these activities expose students to diverse information sources and also involve information-recording techniques that could be easily applied to information encountering.

Pathways to knowledge model

Developed by Marjorie L. Pappas and Ann Tepe, in collaboration with the Follett Software Company, this model is a holistic approach to information seeking and the research process with an emphasis on constructivism and inquiry-based learning (Zimmerman *et al.* 2002). Although similar to other models, this model focuses on the nonlinear, recursive nature of the process and the supporting literature emphasizes the importance of teaching students that the process is nonlinear (Pappas and Tepe 2002). Zimmerman and her colleagues (2002) also pointed out that the real emphasis of the model is to help students think about the process. The basic pathways of the model are articulated by the following stages: appreciation, pre-search, search, interpretation, communication, and evaluation (Pappas and Tepe 2002). During appreciation, the phase unique for this model, students appreciate, listen, sense, view, and enjoy information in the world around them which stimulates their imagination, curiosity and motivation to learn more about a certain topic. The stages of appreciation and evaluation occur throughout the process. The information need and the learning style of the information seeker will impact upon the strategies and pathways used to find and use information, making each undertaking unique (Zimmerman *et al.* 2002).

Among the models we evaluated, the pathways to knowledge model comes closest to capturing the environment that facilitates information encountering. Within this model information encountering best fits in the appreciation stage, which includes students' recognition of the world through information received in varied and different formats, such as natural settings, the Web, books, video, music, paintings, and which can occur throughout the information seeking process (Pappas and Majorie 2002). This phase is

meant to '*foster curiosity and imagination*' and encourage the information seeker to '*explore any relationships between topic and other, related ideas or concepts*' (McKenzie 2000: 4). A high level of curiosity and imagination during the appreciation stage may be the prologue to a discovery phase in information seeking activity; therefore, students could become aware of accidental findings of information and should be guided to use strategies learned in relationship to this stage to make note of such occurrences for later use.

Research Cycle

McKenzie's research cycle is a model that blends information literacy with the use of technology to assist students in meaningful information seeking and use, taking them beyond fact-finding (Milam 2002). At the heart of the research cycle are questioning skills that guide students to a more demanding level of constructing their own learning. The model includes six steps: list subsidiary questions; develop research plan; gather information; sort and sift; synthesize, and evaluate. Students repeat these six steps many times as they research a topic, until they are prepared to complete the seventh step, the reporting phase (McKenzie 2000). The focus of the cycle is to engage students in thought provoking research that moves beyond topical to meaningful problem-solving and decision-making research (McKenzie 2000). The questions serve to guide the research, while the action of cycling back through the process forces students to take an in-depth look at their subject and make discoveries and form opinions, creating their own learning (McKenzie 2000). McKenzie emphasizes that technology makes '*word-moving*' even easier, students can just cut and paste, allowing them to gather facts without real thought (McKenzie 2000: 5). The question-based research thus becomes essential to force students to investigate and think about their subject of interest, rather than just report readily available, predetermined facts.

McKenzie's research cycle could include information encountering within the model, especially since students recycle through the phases. The phases that would especially support information encountering are planning, gathering, and sorting and Sifting. Information encountering could be addressed in these phases to help students understand such occurrences and be more cognizant of handling such unpredictable opportunities within the research cycle. McKenzie's model provides strategies that students use when gathering information in terms of storage and retrieval that could easily be used to make note of information related to other problems or areas of their interest that they accidentally find, and thus enabling them to return to this information later.

Table 1 provides a summary overview of all the models that were analyzed. In each model, specific stages or phases are identified with an asterisk where teachers and library media specialists could articulate for students the natural occurrences of information encountering and suggest to them efficient strategies for managing encountered information.

Information literacy model	Model components	Context
Kuhlthau's information search process (1984, 1989)	<ul style="list-style-type: none"> • Task initiation* • Topic selection* • Prefocus and exploration • Focus formulation • Information collection* • Search closure • Starting writing 	A research process model with emphasis on the creative learning process (elementary and high-school)
Eisenberg and Berkowitz's The Big6™ (1988,1990)	<ul style="list-style-type: none"> • Task definition* • Information seeking strategies • Location and access* • Use of information • Synthesis • Evaluation 	A problem solving and information-seeking model (elementary and high-school).
Stripling's and Pitt's research process model (1988)	<ul style="list-style-type: none"> • Choose a broad topic • Get an overview of the topic • Narrow the topic* • Develop a thesis or statement of purpose • Formulate questions to guide research • Plan for research and production • Find, analyze and evaluate sources* • Evaluate evidence, take notes and compile a bibliography* • Establish conclusions and organize information into an outline • Create and present final product 	A research model for K-12 with emphasis on thinking and reflection throughout the process. Dependent on aligning research with various levels of thought from simple to complex, e.g., fact-finding, asking/searching, examining/deliberating, integrating/concluding and conceptualizing.
Pappas's and Teppe's pathways to knowledge model (1995)	<ul style="list-style-type: none"> • Appreciation • Pre-search* • Search* • Interpretation • Communication • Evaluation 	A model that articulates complexities & nonlinear nature of the information seeking process K-12. (Appreciation through communication may occur throughout the process)
Jamie McKenzie's research cycle (2000)	<ul style="list-style-type: none"> • List subsidiary questions • Develop research plan* • Gather information* • Sort and sift* • Synthesize • Evaluate (Cycle through above phases, possibly several times) - and • Report 	A research model that emphasizes technology use and information literacy skills in elementary and high-school education.
* marks phases in the model where information encountering may be incorporated		

Table 1. Summary of information literacy models

Discussion

The major purpose of information literacy models is to help students successfully complete the research process for specific assignments within a designated time-line. The models imply that students will devote their research time to purposeful use of information sources, such as print and online resources. Most of students' school-related information seeking will, therefore, occur in the context of assignments and time-lines that do not promote pursuit of serendipitous information. These task-driven characteristics of the learning environment may inhibit the students' freedom to experience information encountering.

The current trends in education that promote standardization and elicit extensive control over curricula, teacher behaviour and student learning (McNeil 2000) further stress the importance of students' staying on task. In order to meet the requirements of the standardized curriculum, the teachers will likely impose strict classroom management and supervise their students' behaviour in relation to achieving the primary instructional objectives. Under these conditions, students' experiences of information encountering may be seen as counterproductive and disruptive of planned classroom activities.

In the elementary and high school setting, the research process is traditionally presented in a goal-oriented, precise and often very step-wise fashion (George 2005) the better to help students recognize the individual activities that can be linked to specific learned strategies. Over time, however, changes in the level of students' sophistication emerge as they become more comfortable with the research process and capable of dealing with the overall information gathering activities it involves. The research process then becomes more intuitive and its phases or stages more simultaneous. This change is reflected in the research taxonomy levels of Stripling and Pitts and is also addressed by Foster (2003) who observed that experienced academic and postgraduate researchers are capable of interdisciplinary information seeking. During this more natural process of research students are likely to experience situations of opportunistic discovery of information and information encountering. By incorporating information encountering into the current information literacy models, teachers could promote a more holistic view of information literacy that would broaden students' awareness of naturalistic research processes.

Through the investigation of five information literacy models, we identified stages or phases and strategies that could lend themselves to the inclusion and recognition of information encountering. As presented in Table 1, we believe that information encountering could be incorporated into information literacy models without extensive alteration of the current processes. The elements of the models particularly well suited for 'information encountering enhancement' are the stages of the research process that involve information location and access (e.g., task definition, topic selection, information collection and seeking, narrowing of the topic, searching, gathering, sifting, and sorting). This enhancement of information literacy models would raise the information encountering awareness by teachers, school librarians and computer technology instructors who

typically provide information literacy instruction and rely on the models of information literacy as a major instructional tool.

Through information-encountering-enhanced information literacy models students will become more aware of their own experiences with information encountering and will consequently need to learn how to address these unexpected situations with effective information management strategies. For example, students could be encouraged to make a written note of the information they have encountered and its location (Sawaizumi *et al.* 2007); they could print out textual information or store it in their personal folders on the school network; they could bookmark or e-mail to themselves the URL for a relevant website; they could make a photocopy of a page with relevant information, etc. These strategies would be especially beneficial when students are learning about searching on the Internet and when using online databases and other library resources that result in instances of information encountering. The state of technology infrastructure in schools is, therefore, an important consideration when assessing the attention given to information encountering in educational settings. Lack of infrastructure supporting technology-ease in terms of access to servers for storing information, email accounts for students, high speed Internet access and provision for online database access creates barriers for rewarding students' information encountering experiences in an electronic environment. However, as the state of school technology becomes more established and reliable, it will support the integration of the concept of information encountering into the information literacy agenda. Ultimately, the integration of information encountering strategies within information literacy in electronic and other types of information environments can extend beyond school-related activities to life-long learning, which is an ongoing process useful for personal, professional, or educational information needs.

Conclusion

Our investigation of information literacy models revealed that they do not address the concept of information encountering. One contributing factor is that the models were developed before information encountering and opportunistic discovery of information emerged as recognized concepts in the study of human information behaviour. Also, these models were developed to support purposeful information seeking, usually related to an assignment that is content-based within the educational curriculum.

Based on the analysis of five information literacy models, we believe that within each model are various stages or phases where natural occurrences of information encountering are possible and should be articulated for students. Acknowledging the need for teaching information encountering strategies in educational settings lends support to the philosophy behind the information literacy models that encourages students' experiences with multiple research strategies and promotes alignment of these strategies with, what McBirnie (2008) calls learners' self-taught search skills.

Based on the research-based understanding of opportunistic discovery of information as a concept in human information behaviour we believe that information encountering provides another dimension of information literacy that could be incorporated into the information literacy models. However, educators (e.g., classroom teachers, technology specialists and library media specialists) would need to have clear understanding of expected benefits and potential drawbacks of making adjustments to present instructional strategies for information encountering to become part of information literacy instruction. Therefore, more empirical research is needed to address questions such as:

- How does information literacy instruction without students' introduction to information encountering compare to instruction with information encountering in terms of measurable student learning outcomes?
- What is the impact of inclusion of information encountering in information literacy instruction on the various aspects of teachers' classroom management?
- Does maturity of the student make a difference in their ability to address information encountering experiences without thwarting the demands of the immediate assignment or task?
- What strategies should be introduced to teach students how to efficiently manage information encountering in various stages of research process models?

Additional research will strengthen further connections between information behaviour research and information literacy instruction and will also provide a more complete understanding of the potential role information encountering in this instruction. Based on the research findings, specific instructional strategies can be developed to enhance current information literacy models, contributing to emergence of more holistic information literacy.

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Cultivate Your Personal Learning Network Grow Your Knowledge Building Community Prepare for an Abundant Fall Harvest

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What is a Personal Learning Network?

Will Richardson defines personal learning networks (PLN) as “the collection of people with whom you engage and exchange information. They are the group of people who contribute to your knowledge and understanding of topics in your field and beyond.” (Source http://www.nercomp.org/data/media/PLNTraining_OutlineWIT.pdf) He explains, “Personal Learning Networks extend your learning through increased reflection, while enabling you to learn as part of a global community. That’s not to say that face-to-face learning isn’t important or valuable. It is. But so is the learning we can now do on the Web. And it’s the melding of the two that will shape our schools in the 21st century.” (Source <http://weblogg-ed.com/tag/pln/>)

School librarians are the driving force behind learning networks within the school culture. Today school librarians have a wealth of tools available to assist faculty and students in developing effective management of information systems including PLN’s. Tools to build personal learning networks include:

- Face-to-face connections in building, districts, regions and at conferences.
- Listserv email networks including OELMA, INFOhio, ITC’s, and LMNet.
- Blogs from professionals such as the Unquiet Librarian and School Library Journal accessed through RSS feeds in an aggregator such as Google Reader.
- RSS feeds from INFOhio’s EBSCOhost professional journals such as *School Library Journal*, *Educational Leadership*, and *School Library Media Activities Monthly* accessed in an aggregator like Google Reader.
- Daily Twitter Tweets from individuals and organizations such as INFOhio, Stephen Abrams, Stephen Anderson, Joyce Valenza, and Vickie Davis (coolcatteacher), Buffy Hamilton (the Unquiet Librarian), and Gwyneth Jones (the Daring Librarian).
- Social networking sources such as the INFOhio Knowledge Building Community, ISTE Learning, edWeb, Facebook, Ning and Linked-in.

The challenge is managing these connections and growing the network of contacts so that librarians and teachers have all of these dynamic, professional information sources and the best support system. The goal is for faculty to attract information through the advances in technology and utilize the opportunities to thrive and grow professionally in their 21st century classroom or library. INFOhio, realizing the need for a virtual collaboration space, accessible 24/7 in districts as well as at home, developed the **Knowledge Building Community** for networking, sharing, and growth.

What is a Knowledge Building Community?

David Loertscher, Ross Todd, and other experts with the Ontario School Library Association in Together for Learning, School Libraries and the Emergence of the Learning Commons, defines a Learning Commons as, "a vibrant, whole-school approach, presenting exciting opportunities for collaboration among teachers, teacher-librarians and students. Within a Learning Commons, new relationships are formed between learners, new technologies are realized and utilized, and both students and educators prepare for the future as they learn new ways to learn." (Source http://www.accessola.com/data/6/rec_docs/677_OLATogetherforLearning.pdf) Building on the extensive Learning Commons work of David Loertscher, INFOhio set out to create a virtual environment that facilitates the creation, use, exchange and sharing of knowledge beyond the district level, so that librarians and teachers across Ohio can do their jobs better, improve their skills, and lead students to successful learning. This is INFOhio's *Knowledge Building Community* or KBC.

INFOhio's Learning Commons and KBC

INFOhio's Learning Commons (LC) and Knowledge Building Community (KBC) provide a place for Ohio school librarians and teachers to gain content and apply what they know and learn collaboratively. The LC is a professional development content portal with information about 21st Century Learning Skills and self-directed learning modules, including *21 Essential Things for 21st Century Success*. The KBC is a social networking environment that provides a way to connect with other Ohio educators. The connections can be individual conversations or collaborative conversations through groups. There are already more than 2,400 registered LC participants.

21ST CENTURY LEARNING COMMONS

The screenshot shows the 21st Century Learning Commons website. At the top, there is a navigation bar with links: Home, 21 Essential Things, Learning Skills, Videos, Glossary, Forums, Community, and Logout. Below the navigation bar, there is a news/announcement section with a link to 'New DVC interface'. The main content area is divided into three columns. The left column contains a 'Main Menu' with links to Home, Get Started / Register, 21 Essential Things, Learning Skills, Glossary, Videos, Forums, Community, and Contact Support. The middle column features a large banner with the text 'YOU'RE CONNECTED!' and 'collaborate communicate connect share', followed by '21 Things for 21st Century Success' and '21st Century Learning Skills'. Below the banner is a 'Members' section displaying a grid of member avatars. The right column has a 'Search' section and a 'Latest Groups' section listing groups like 'CNSD Book People', 'Woooster', 'NWOET', and 'OHUH Librarians'.

Teachers, librarians and, in some cases school districts, use the LC to hone their understanding of 21st Century Learning and help integrate these skills into k-12 classrooms. The *21 Essential Things for 21st Century Success* provides 21 modules on new tools and ways to use the INFOhio Resources for project-based learning. The *Essential Things* introduce ideas for integrating Web 2.0 tools into classroom projects and promote student creation of new knowledge using the tools. The *Things* also encourage use of INFOhio resources and other classroom- based knowledge. In addition, the INFOhio Learning Commons includes a series of forums that encourage educators to share how they have used these tools in their classroom. These forums have grown to include more than 1600 topics and 2500 messages.

As the LC grew, it became evident that Ohio educators would benefit from a more robust collaborative knowledge-building environment. Through work with the Martha Holden Jennings Foundation, the Knowledge Building Community was developed.

In the KBC, many school districts have begun group conversations. For instance, Cleveland Metropolitan School District high school librarians formed a group promoting conversation about effective use of databases and virtual research materials. And, 49 school librarians from across Ohio are having an e-book/ e-textbook

conversation, discussing the ways e-books are being used in their schools and seeking advice about purchasing e-books and e-audio books rather than traditional print textbooks.

The screenshot displays the interface of a Knowledge Building Community (KBC) for the INFOhio eBook Group. The page is divided into several sections:

- Group Information:** Includes a logo for 'eBOOK', the category 'INFOhio', the name 'eBook Study Group', creation date 'Sunday, 06 February 2011', and creator 'MELBA GARDNER'. It also lists the most recent post.
- Description:** A paragraph stating: "Group members will share their knowledge about how eBooks and eTextbooks can be used effectively in school libraries. This group will also study the mobile devices that can be used to read eBooks."
- Group Option:** A sidebar menu with options: 'Create Discussion', 'Create Album', 'Add Video', 'Invite Friends', and 'Leave Group'. Below this is an 'Admins' section with a profile picture.
- Members:** A grid of profile pictures for group members, with a 'Show All (46)' link below.
- Discussions:** A list of discussion topics with their respective authors and reply counts. Examples include 'eTextbooks and eTextbook carts' (3 Replies), 'eBooks News Article: What is eReaders of Future?', 'eReaders for Educators: A Guide to eReaders', 'Articles about eBooks and eTextbooks', 'eReader vs. eTablet', 'eBooks: News Article', 'Interpretation of eBooks', 'eReader eBooks', 'Server for free e\$', 'Running eBooks on', and 'eReading 10 of 14 eReaders'.
- File Sharing:** A section titled 'File' containing a list of files with their names and sizes. Files include 'E-reader .bb.doc' (42), 'Links to articles on eReaders' (15.67), 'eReaders' (15.67), 'ODE Core-Free eBook repository 4.doc' (15.41), and 'eReaders PowerPoint.ppt' (7976).

The KBC provides a virtual environment for teachers and librarians to work together across the district and across the state, to discuss solutions and changes in education and to meet the needs of local communities while reducing costs. The ITC's and EdTech agencies across Ohio have joined the conversation and are encouraging their constituents to join as well.

Education is changing. No longer are teachers delivering one-size-fits-all lessons. Today's teachers work with individual students as learning coaches. The INFOhio Learning Commons and Knowledge Building Community provide teachers, librarians and educators the tools necessary to succeed in a learning coach environment.

Checklist for developing your own Personal Learning Network

1. Join the INFOhio Learning Commons.
2. Participate in the LC forums.
3. Join the INFOhio KBC, participate in several interesting groups.
4. Form your own group based on an interest or challenge.
5. Join Twitter and follow INFOhio and education leaders.
6. Tweet the valuable resources you discover and successes you are having.
7. Ask questions and share your expertise on teaching and learning in the KBC.

Checklist for leading your faculty to cultivate a knowledge building community (Summer virtual PD opportunities – free)

1. Work with your LPDC to promote INFOhio's *21 Things for 21st Century Success* as a district learning opportunity and accept the *My Learning Path* documents for contact hour credits.
2. Form a group to work through the 21 Essential Things together this summer.
3. Form a group in the KBC for your school study group and initiate some discussion.
4. Join one of the KBC idea exchange groups and encourage your staff to join groups as well.
5. Create a KBC idea exchange group focused on a topic of concern to you or your school.
6. Organize a group, view and discuss the archived INFOhio Webinars for the 2010-11 school year together for contact hour credits. <http://www.infohio.org/Educator/Webinars2010-2011.html>
7. Create Twitter accounts together and work together to choose education leaders to follow. Add INFOhio to your list.
8. Explore other parts of the Learning Commons to find out more about the Learning Skills and Videos that are available to supplement your learning.
9. Plan a fall networking and sharing conversation among your faculty members on what they learned this summer and expected classroom changes for the 2012 school year.

Personal Learning Networks in Action

Librarians around the state are organizing groups of teachers to work through the *21 Things* together for professional development. Travis Bogart, the District Librarian at Bright Local Schools in Highland County, has organized such a group which meets after school to learn new things together. The goal, he says, is to create a group of Ambassadors for 21st Century Skills in the district who can inspire other teachers to implement the skills as well. The Ambassadors will present some of what they have learned and are implementing at a back-to-school inservice for the entire staff in the fall.

"I use Twitter almost daily first thing in the morning. I call it my 'hour of power.' I can't even begin to elaborate on how I have changed, learned and grown from the PLN I have on Twitter."

This is what one of the Bright teachers posted in the *Thing 10 Forum*, "I am excited to learn that there are search engines out there that are based on standards and curriculum and can display info in a variety of ways for many learners. I will be honest, I don't really have students do a lot of research in 4th grade math. I am going to try to use the Wolfram Alpha search engine with my students. I like how it can create tables and graphs to show similarities and differences. This is a Marzano strategy our school district has been trying to incorporate more into all classrooms. I did not know that Google had graphical display choices. I really like the Google Square beta. I think this makes info easier to see for students. I am also excited to learn about the Digital Video Collection offered through INFOhio."

Resources

INFOhio Learning Commons: <http://learningcommons.infohio.org/>

Google Reader: <http://www.google.com/reader>

Blogs mentioned in article:

- The Unquiet Librarian: <http://theunquietlibrarian.wordpress.com/>
- School Library Journal blogs: <http://blog.schoollibraryjournal.com/allblog.php>

Twitter links:

- INFOhio on Twitter: <https://twitter.com/infohio>
- Stephen Abrams: <https://twitter.com/sabram>
- Stephen Anderson: <https://www.twitter.com/web20classroom>
- Joyce Valenza: <https://twitter.com/joycevalenza>
- Vickie Davis: <https://twitter.com/coolcatteacher>
- Buffy Hamilton: <https://twitter.com/buffyjhamilton>
- Gwyneth Jones: <http://twitter.com/gwynethjones>

Social Network Links:

- INFOhio Knowledge Building Community:
<http://learningcommons.infohio.org/> (available after registering and signing in)
- ISTE Learning Community: <http://istelearning.org/>
- edWeb: <http://www.edweb.net/>
- Facebook: <http://www.facebook.com/>
- Ning: <http://www.ning.com/>
- LinkedIn: <http://www.linkedin.com/>

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Melissa Higgs-Horwell was a former school librarian at Pickaway-Ross Career Center in Chillicothe for 24 years and also served as Technology Coordinator for the last 5 of those years. She recently retired with 35 years in education after serving 8 years as Distance Learning Coordinator at the SCOCA ITC. She is the 2008 OELMA Award of Merit winner and is currently working as a consultant for INFOhio.



Constructing Digital Learning Commons to Address the English Language Arts Common Core State Standards

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In this paper, I describe the development of the 6-12 English Language Arts Common Core State Standards and well as some of the limitations of these standards. I then discuss how these standards could be addressed through uses of digital tools related to the idea of the digital learning commons, as illustrated by the use of online role-play activities.

Development of the English Language Arts Common Core State Standards

The Common Core State Standards (CCSS) were initiated by the National Governors Association and the Council of Chief State School Officers in conjunction with Achieve, Inc., the American College Testing Program (ACT), and 16 education associations in the Learning First Alliance (Common Core State Standards, 2010). The ELA CCSS are designed to foster attentive and critical reading of complex literature and “the staggering amount of information available today in print and digitally” (3). The standards exist to establish a “wide, deep, and thoughtful engagement” that will “build knowledge, enlarge experience, and broaden worldviews.” They are meant to be the basis for “any creative and purposeful expression in language.” The kind of thinking the standards are intended to foster should be understood to be “essential” to national and global citizenship.

Precisely in order to achieve outstanding intellectual and academic accomplishment, the CCSS do not specify *what* to teach. They do not create a common, core, required, or national curriculum of any kind. Nor do they specify, describe, or set forward any general or specific teaching methods.

Limitations of the ELA CCSS

At the same time, it should be noted that there are some limitations to the curriculum framework underlying the ELA CCSS (Beach, 2011; Beach, Haertling-Thein, & Webb, in press). One limitation of the CCSS is that they are largely based on a formalist framework for teaching ELA. The writing standards are organized around knowledge of the conventions for argumentative essays, informational/explanatory essays, and narratives while the literature standards are organized around study of types of figurative language in poetry and narrative structure. For analysis of “craft and structure” of literary texts, students are expected to be able to “analyze how an author structures a text, orders events within it (e.g., parallel plots), and manipulates time

(e.g., pacing) to create mystery, tension, or surprise." The speaking/listening standards are organized according to different ways of communicating in discussions or through use of media. Within these different forms, the standards are then defined based on processes or strategies involved in employing these different forms.

One possible explanation for the formalist orientation of the CCSS is that they lend themselves more readily to standardized testing and scoring in that the uses of certain forms in students' literary analysis or writing can be readily identified – whether students can identify the use of plot structure in a story or whether in writing argumentative essays, they formulate a clear position statement with supporting reasons or counter-arguments.

Adopting a Literacy Practices Framework

However, while the CCSS may represent a formalist approach, this does not necessarily mean that they need to be implemented through adopting a formalist approach. To address the lack of focus on the use of literacy practices in social and rhetorical contexts, effective implementation of the CCSS entails creating contexts in which students are sharing their work in ways that has some rhetorical uptake. If students are taught writing simply as a matter of how to write the five-paragraph theme based on a model template, they may not be engaged with such writing in terms of having some social purpose and audience that motivates them to want to write.

A literacy practices framework defines literacy practices not as mastery of forms but rather as those practices students employ to understand and produce texts for social purposes in classroom events (Baynham & Prinsloo, 2010; Street, 2005). Literacy practices are *social* in that they are employed to achieve social purposes involved in everyday actions. For example, in engaging in the social practice of cooking, people employ recipes as written texts or oral descriptions to engage in the social practices of selecting and measuring different types of food or for sharing with others. These written or oral recipes therefore emanate from these practices. In defining language as a local, social practice, Pennycook (2010) argues that, rather than language operating as a system that people draw upon to engage in social practices, it is the social practices themselves that determines the meaning of language – "that language is the product of social action, not a tool to be used" (p. 8).

Adopting a literacy practices framework shifts the focus of ELA instruction from a formalist approach to create assignments emphasizing the social purpose and audience driving students' reading and writing. For example, the Grades 6–12 CCSS standard on argumentative writing related to the use of "substantive claims," "clear reasons," and "relevant and sufficient evidence" (Common Core State Standards, 2010, p. 37), needs to recognize that these criteria depend on having an understanding of the social contexts constituting the meaning of "substantive claims," "clear reasons," and

“relevant and sufficient evidence” given the fact the these meanings can vary across different classroom contexts.

Constructing A Digital Learning Commons to Address the ELA CCSS

One approach for rethinking the implementation of the ELA CCSS consistent with a literacy practices framework involves the idea of the learning commons (Koechlin, Luhtala, & Loertscher, 2011). The concept of the “commons” initially derived from idea of public places – the “Boston Commons,” as well as publicly-shared knowledge (Hess & Ostrom, 2007).

School librarians/media specialists are currently redefining the mission of media centers around the concept of the "learning commons" – based on the concept of collaborative, inquiry-based learning activities jointly planned by teachers and librarians (Waskow, 2011). The learning commons concept is manifested through creation of “knowledge building centers” constituted as inquiry-based “collaborative construction zones” that involve students, teachers, administrators, experts, and parents sharing knowledge and learning together; for information on the learning commons.

To promote the need to create a “learning commons” redesign of schooling, teachers can draw on the National Education Technology Plan 2010: Learning Powered by Technology (United States Department of Education, 2010; http://www.google.com/url?q=http%3A%2F%2Fwww.ed.gov%2Ftechnology%2Fnetp-2010&sa=D&sntz=1&usg=AFrqEzekS1QVBgWaZKmiFHTDR9jaqd_1PA). This report recommends that “all learners will have engaging and empowering learning experiences both in and out of school that prepare them to be active, creative, knowledgeable, and ethical participants in our globally networked society” (p. 9). A primary focus of this report is the need for teams of teachers and librarians to collaboratively engage in “connected teaching” to create a “learning commons” to foster sharing of knowledge and information between students, educators, experts, organizations, and parents as co-learners (Loertstcher & Marcoux, 2011).

Related to the concept of the learning commons is increased availability of open content – curriculum, learning material, resources, and courses available for free online (Duffy, 2010; Wanchek, 2010) (See also The Open Knowledge Foundation, K12OpenSource, K12EdCom, Open Courseware Consortium, Curriki, Sophia, Open Educational Resources, Classroom 2.0, Thinkfinity, MIT Open Courseware). The 2011 Horizon K-12 report that identifies future trends in education noted that open-content will be a major development within the next two to three years (Johnson, Adams, & Haywood, 2011). They cite the examples of the publisher, Flat World Knowledge, which publishes open access textbooks. And, they note the development of free massive(ly) open online courses (MOOC) courses, such as the Change11 course for large numbers of people (Siemens, 2010).

An important component of a digital learning commons is that it goes beyond simply accessing information to emphasize the need for information to learn or “informed learning” that involves addressing status quo problems leading to change (Bruce & Hughes, 2010). Participants are more likely to participate if they can provide services valued by other members. For example, the OneVille Project, in Somerville, Massachusetts, organized by Mica Pollock (2011) was driven by achieving the goal of connecting students with teachers, peers, counselors, and parents through texting and e-portfolios. Analysis of teachers and students texting each other regarding their work provided students with a sense that their teachers cared about them (Pollock, 2011). And, the INFOhio Learning Commons provides teachers with videos, forums, and resources consistent with the goals of creating a “21st Century Learning Commons” (Schwelik & Fredericka, 2011).

“Informed learning” also involves the ability to adopt different perspectives and a meta-cognitive awareness of how one is employing various practices to acquire information to learn (Bruce & Hughes, 2010). For example, by participating in global, digital learning commons, users experience cross-cultural perspectives involving “cosmopolitan habits of mind” (Hull, Stornaiuolo, & Sahni, 2010). One study of uses of digital media by California college and high school students found that exposure to alternative perspectives through digital media led to more awareness of diverse viewpoints, although students in schools serving low-income or racial minority students had less access to digital tools (Kahne, Feezell, & Lee, 2010).

Participation in the Digital Learning Commons

The idea of the *digital* learning commons builds on the use of digital tools—blogs, wikis, podcasts, websites, social-networking sites, and online discussions—to acquire and share information as part of the information commons through participation in “knowledge building center” (Koechlin, Luhtala, & Loertscher, 2011).

While the English language arts CCSS refers to digital literacy standards, it is still largely based on print-based assumptions constituting English language arts. However, because the meaning of literacy practices are constituted by historical and cultural forces, they and their status is always changing, as evident in the increasing importance of media/digital literacies given the rise of a digital “participatory culture” (Jenkins, 2006).

From a “new literacies” perspective (Lankshear & Knobel, 2006), students are immersed in a digital landscape constituted by multimodality, interactivity, and intertextuality, and remixing shaping their use of literacy practices. Understanding and producing multimodal texts entail framing events in terms of the semiotic, cultural meaning of signs (Kress, 2003). Knowing how to interact with others on social

networking sites entails use of relating to and collaborating with others in “passionate affinity groups” (Gee & Hayes, 2011).

Central to participation in the digital learning commons is the use of digital tools to interact with others, acquire relevant information, and share their own expertise associated with collectively addressing problems, literacy practices that address the CCSS speaking/listening standards, “participate effectively in a range of interactions (one-on-one and in groups), exchanging information to advance a discussion and to build on the input of others.” These are literacy practices, because, according to boyd (2009, p. 9), engagement in these “networked publics” are constituted by “persistence” (communication is recorded and stored); “searchability” (people can readily locate each other and information); “replicability” (material can be copied and moved); and “invisible audiences” (it is difficult to identify one’s potential viewers or readers). Online networking also allows students to readily move across distinct boundaries between home, school, peer group, and workplace contexts, a reflection of “circulating literacy practices” across these different contexts (Vasudevan, Schultz & Bateman, 2010).

The value of these literacy practices involved in collaboration was evident in recent research analyzing problem-solving abilities by groups (Davidson, 2010). This research found that the success of a group does not depend on individual members' intelligence or skills; it depends on “collective intelligence” – group members' ability to empathize with each other's emotions, to honor individual differences in the members' diverse abilities, and to have other members acquire these abilities, as well as leaders who listen to and enact others' ideas. Clay Shirky (2008) argues that this online collaboration can lead to collective action in which “the cohesion of the group becomes critical to its success...collective action creates shared responsibility, by tying the user’s identity to the identity of the group” (p. 51). Engaging in collective action requires “some shared vision strong enough to bind the group together, despite periodic decisions that will inevitably displease at least some members” (p. 53).

Co-construction of Digital Commonplace Texts Using Digital Annotations

From a literacy perspective, one key aspect of engaging in a digital learning commons is the idea of co-constructing digital commonplace texts. The idea of “commonplace” text derives from the “commonplace book” – a genre that started in the 5th century in which authors such as kept commonplace books as scrapbooks by transcribing quotes or keeping annotations as summary and critical reflection on ideas in books. Through sharing their annotations, students and teachers are collaboratively constructing knowledge, by transforming reading of “booklogs” into a “community event, with every isolated paragraph [serving as] the launching pad for a conversation with strangers around the world” (Johnson, 2009, p. 3).


Because most texts in schools will be digital, students can employ digital annotation tools such as the Amazon Kindle app to highlight passages in e-books and add annotations or export their passages and annotations to sites such as Evernote. Students can also upload pdf versions of their textbooks onto iPad using iAnnotate or Goodreader for making and sharing annotations.


For collaboratively sharing annotations to websites, students and teachers can employ social bookmarking/annotation tools such as Diigo, Reframe It, Trailfire, or Evernote. Teachers can use Diigo set up special Educator accounts to add students to a class "group" account along with privacy settings (www.diigo.com/education) for sharing of bookmarks of websites relevant to topics or issues of interest to the class. Students can then add annotations to any site or blog post to share with their entire class or with subgroups within a class. In using Diigo, they first highlight a section of a text and they add a "sticky note" annotation that pops up when others click on a "sticky note" icon. To do so, students need to add Diigo to their browser to create a Diigo tool bar; they can also add Digolet to their bookmarking tool bar. They can select Bookmark to share links to their class group, along with descriptions and tags for those links. They can also Highlight text in any online document, by clicking on the Sticky Note icon, add their annotations. By clicking on the same icon, other students can then respond to the original annotation.



For example, in a literature class, students can then share their small-group responses to online texts such as poems from the Academy of American Poets or Poetry Archives. For example, as illustrated in the following image, I've highlighted in yellow some lines from the poem, "Womanhood," by Catherine Anderson, and then added by "sticky note" annotation:

Highlighting and adding a Sticky Note to a poem

with the radio.
Her entry into womanhood
will be like all the other girls'—
a cigarette and a joke,
as she strides up with the rest
to a brick factory
where she'll sew rag rugs
from textile strips of kelly green,
bright red, aqua.

 Sticky Notes

 She moves from the open world of romance to the closed world of the factory

Private  

And, for adding annotations to online videos, students can employ YouTube Annotations or VideoAnt (For my 2010 K12 Online Conference presentation on use of annotations to create online "commonplace texts").

In creating these annotations, students often need assistance in going beyond simply restating or summarizing content to formulating their own engagement responses, intertextual connections, interpretations, judgments, or contextualizing material related to their purposes for studying a topic or issue. To foster her first-year college composition students' use of substantive annotations for articles, Mary Goldshmidt (2010) provides them with a checklist for students to reflect on whether their annotations infer key point, critique positions, formulate alternative explanations, note omissions, position the author within a scholarly context, judge the author's credibility and knowledge, and assess an article's overall rhetorical uptake.

Use of the Digital Learning Commons for Teaching Argumentative Writing

A central focus of the ELA CCSS is the focus on teaching argumentative writing. This focus represents a shift away from the prevailing focus on teaching the five-paragraph expository essay given the use of that essay form on mandated state writing tests. The result of these tests is that teachers employ a formalist approach that emphasizes writing according pre-determined structures as opposed to emphasizing generating and developing ideas to engage or convince audiences. This formalist focus limits recognition of writing as an interactive social activity mediated by use of language, genres, and discourses defining roles, purposes, and audiences (Newell, Beach, Smith, & VanDerHeide, 2011). Writing is never done in a vacuum; it is always shaped by the event or context in which students are using their writing to communicate to a certain audience for a certain purpose.

It is also the case that students also have not read a lot of argumentative texts and have difficulty identifying differences between claims, reasons/evidence, and warrants, as well as the fact that different genres – editorials, reports, sermons, essays, letters, etc., can function as arguments (Chambliss & Murphy, 2002). They also perceive argument as modeled on television/radio talk shows as simply voicing opinions in a competitive arena, as opposed to providing supporting evidence for claims.

As an alternative to having students perceive arguments as a competitive debate involved in winning an argument simply for the sake of winning, students could perceive argument more in terms of “collaborative reasoning” (Johnson & Johnson, 2006) designed to actually address problems and coming up with solutions. Adopting a “collaborative reasoning” stance entails people’s willingness to bracket out disagreements to seek common ground leading to developing solutions to a problem or issue. This involves the need to focus on learning to argue in a productive, collaborative manner, but also arguing itself as a way of learning. In learning to argue, the goal is for students to acquire the literacy practices involved in convincing others of the validity of their positions.

Identifying and Collecting Information on Issues

In arguing to learn, the goal no longer involves convincing an audience, but rather, gaining some enhanced understanding of a topic or issue (Andriessen, 2006). To do so, students can pose questions about an issue that will guide their database searches, discussions, observations, and interviews. In some cases where students do not have a clear sense of an issue, they may want to immerse themselves in a site or event to inductively identify issues they discover in that site or event. Students can then read different material on this issue, and take notes on, list, and/or map or create graphs of the competing arguments in this material and the reasons/evidence for those arguments. Students could also work in small groups collaboratively assessing the arguments in the texts, and comparing their own analyses.

Students can also find information about certain issues on sites such as Debatepedia, Opposing Views, CreateDebate, or Debategraph. Students can also engage in collaborative argument through alternative online formats, for example, radio, podcast, or video townhall meetings such as the student-run townhall meetings on Northeast Public Radio, WAMC. And, students can participate in the Our Courts Project designed for middle school students, where students assume the role of a law clerk assisting a judge in writing opinions on cases. Or, students can participate in online games, for example, games on The Persuasive Games site, Democracy, Peacemaker, LittleBigPlanet, or Global Warming Interactive.

Framing/contextualizing issues in social worlds

Once students identify an issue, drawing on the framing literacy practice, they then frame or contextualize that issue in terms of the larger historical, institutional/civic, cultural, psychological, and economic perspectives shaping that issue or problem. In doing so, they broaden out their perceptions of an issue through “disrupting the commonplace” – “stepping outside one’s usual modes of perception and comprehension using new frames to understand experience” (Lewison, Leland, & Harste, 2008, p. 8). Students employ the literacy practice of “rivaling” (Flower, Long, & Higgs, 2000) to entertain competing, diverse perspectives on an issue, as well as recognizing that adversaries can be useful resources for alternative perspectives. Students involved in a community literacy program campaign in a Pittsburgh neighborhood challenged police attempts to enforce a curfew on young people living in a neighborhood by creating a pamphlet formulating their positions and calling for a community meeting (Flower, 2008). By engaging in “rivaling” – recognizing that the police and local residents believed that a curfew would reduce crime, the students formulated counter-arguments drawing on research that curfews do not reduce crime, resulting in the police deciding not to impose a curfew.

Ideally, the issues selected would also be ones about which students might have some actual power to influence. For example, The What Kids Can Do site provides

examples of student-led activism. As reported on this site, students in Des Moines, Iowa, challenged the city code that music venues are not allowed to hold all-ages music events after 9 p.m.). This issue could also be based on reading a common fictional text portraying an issue or related to an “actual” issue. For example, as reported in *The Los Angeles Times*, a forum was organized around whether Hamlet should/ should not be tried for murder because he was/was not insane.

Conducting Rhetorical Analysis of Nonfiction Texts

An important aspect of argumentative writing involves learning to read argumentative texts such as high school students’ essays in *The Best American Nonrequired Reading 2010* (Eggers, 2010). Engaging in rhetorical reading or analysis of a text requires students to examine an author’s actions within a rhetorical context defined by their purpose, audience, and agendas. As Doug Downs notes:

In rhetorical reading, students learn to ask not simply “what does it say” or “what does it mean,” but what does it DO?” They try to make the claim about what the article is meant to accomplish for its specific readers in a its specific activity system. (p. 42)

To address the CCSS Reading standard: “delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is valid and the evidence is relevant and sufficient; identify false statements and fallacious reasoning,” students can read argumentative texts and have them identify formulation of claims, reasons, and evidence. Once they have identified the claims, reasons, and evidence, they then need to assess the validity of the argument by defining the warrant or premises linking the claim to the reasons or evidence, consistent with the standard, “assess the truth of an argument’s explicit and implicit premises by determining whether the evidence presented in the text justifies the conclusions.”

Students can also assess the evidence based on the criteria of whether that evidence is credible – as being consistent with accepted, scientific knowledge about a topic or issue or from an authoritative source, sufficient – as providing enough evidence so that audiences are convinced of the validity of their claims, and accurate – as providing evidence that is accurate and verifiable as well as sources being cited and properly quoted (Rex, Thomas, & Engel, 2010, p. 59).

Engaging in Audience Analysis

In employing rhetorical appeals, students need to consider their audiences’ roles, status, power, knowledge, needs, and interests, so that they can provide relevant, appropriate knowledge. For example, for audiences with extensive knowledge on a topic, they need not provide certain background knowledge needed for audiences with less background knowledge. They also need to consider their own relationship with their audiences – whether they are writing for familiar versus unfamiliar

audiences. To help students consider audiences, you can have them write the same arguments for different audiences, for example, writing to a school administrator versus a relative or friend (Carbone & Orellana, 2010). Students can then reflect on differences in their language use across different audiences – the fact that they may use more informal language in writing for a relative or friend while using more formal language in writing for an administrator.

Students are also seeking to gain their audience's identification with their stance or belief about a topic or issue, employing logos, pathos, and ethos to gain that identification (Burke, 1969). To gain an audience's identification, writers or advertisers identify some experience related to a topic, product, issue with which an audience may identify. For example, in arguing for the need for improved bus service, a student may describe the experience of being stuck in rush-hour traffic – an experience with which audience's may identify that would then lead them to perceive the need for alternative transportation using the bus.

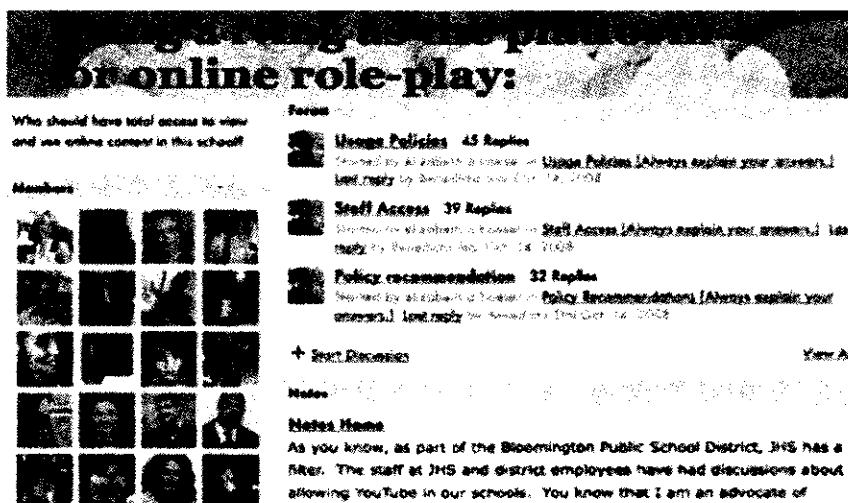
Using Online Role-Play to Teach Argumentative Writing

To foster student's experimentation with argumentative literacy practices, students could participate in online role-plays on a blog or discussion forum (or, if no computer access – exchange paper writing as memos to others in a classroom) In an online role-play, students adopt a range of different roles reflecting alternative positions on an issue.

Addressing the Issue of Blocked Websites

In Elizabeth Boeser's 12th grade composition class at Jefferson High School, Bloomington, Minnesota, students engaged in an online role-play to address the issue of access to sites in their school being blocked (Beach & Doerr-Stevens, 2009; 2011; Doerr-Stevens, Beach, & Boeser, 2011). For example, one student interested in studying issues of gun control found that the NRA site was blocked. Another student, seeking clarification on MLA citation, typed in "Diana Hacker" and found that it was blocked due to the composition scholar's last name. Elizabeth faced the challenge of how to channel these disagreements into a productive debate or "constructive controversy" (Johnson & Johnson, 2009) that would lead to collaborative problem solving – a process of exploring alternative perspectives on a problem with the goal of collaboratively developing a solution to that problem.

She then set up an online role-play using a Ning social networking platform that includes an asynchronous forum component. As illustrated below, on the Ning forum, students created profiles for their roles representing competing perspectives on whether websites should be blocked and then argued their positions on a Ning forum platform.



The asynchronous chat allows students extended time to reflect on each other's posts and to develop counterarguments. Students can also participate both in and outside of class, construct fictional bio profiles for adoption of personas, readily identify names and/or faces of participants on the screen, send messages to everyone or selected audiences only, link to other posts or online material, and revisit posts online for further reflection and writing.

Elizabeth also realized that students would be more motivated to participate in a collaborative manner if they knew that their role-play efforts might result in actual change in the school's Internet policies. She therefore told the students that their online role-play would be used to identify problems with Internet filters and lead to writing position papers to communicate their policy recommendations to the school administration and the school technology coordinator. Rather than simply being one more persuasive writing assignment, the students were using the writing during their online role-play to collaboratively explore and suggest changes in their school's policies.

Teaching Argumentative Strategies

To teach students argumentative strategies in an online forum, Elizabeth had students analyze and discuss role-play postings from a previous online role-play with attention to the development of their roles, statement and support of position, acknowledgment of counterarguments, and identification with audience. Students applied rubrics to assess postings based on these criteria, rubrics they would later apply to their own posts.

Elizabeth then had the students research issues of Internet privacy and policy and choose several possible roles representing alternative perspectives on the issue, such as school administrators, parents, teachers, students, technology entrepreneurs, and lawyers. In her more recent use of the online role-plays, Elizabeth has employed Diigo

language styles and perspectives, or discourses, and how these discourses interacted in ways that helped students to adopt hybrid voices (Beach & Doerr-Stevens, 2011). While many of the initial role-play postings reflected stereotypical assumptions about their roles, over time, the role-play characters adopted alternative, nuanced perspectives on the issue. Instead of framing technology access as an either/or issue, the students began to perceive technology access and Internet filters as more than basic necessities to protect students from the evil of online predators.

They also began to perceive the need to protect people's rights to information or, in other cases, their rights to privacy in a world with continually shifting boundaries of public and private. For example, as Sasha, the student who played "Judith Rosario," described her character as "Emo Girl." As illustrated below, she was initially upset about problems with the school's restrictive Internet policies, which she viewed as "ridiculous."

**EmoGirl: Critique of school
Internet policies**

*I think the internet
usage policies are ridiculous.
The policies are almost
impossible to find. I spent
half an hour trying to find
them and I'm a
young, computer savvy
person.*



However, as she learned more about the complexities of privacy related to use of Internet filters, her perspectives began to shift. As she noted in a post-role-play interview:

I began the role-play believing that administration's monitoring of student access was a good idea, but my opinions changed a little as time progressed. As I continued to write as Judith and research the topic more carefully, I came to see how a person could come to feel so strongly about privacy in the academic setting. (Doerr-Stevens, Beach, & Boeser, 2011, p. 36)

And, by engaging in dialogic exchanges, students were interrogating each other's perspectives. For example, two roles in the online role-play, a student hacker (BL33K3R) and an ACLU Lawyer (Jeffery Schwartz), are discussing the current policies that affect Internet use in schools:

Jeffery Schwartz: I applaud you, BL33k3r on your knowledge of Miller v. California. Obscenity is always considered controversial because it is hard to define and subjective. . . . Two current laws that affect Internet use in schools are: 1. Child Internet Protection Act (CIPA), which requires schools and public

libraries receiving federal funding to employ blocking technology to block obscene materials. 2. (This one has not been passed, but is still of interest) Deleting Online Predators Act of 2006 (DOPA), which will create further restrictions on sites like MySpace and Facebook, as well as online chatting programs. The ACLU and ALA brought the issue of CIPA censorship to the Supreme Court, but, unfortunately, the Court declared it constitutional because the restrictions were in exchange for federal funds. DOPA is a concern because it could limit educational applications on the Internet of resources such as Wikis and blogs, which are being used by some teachers in classes today. This is another example of how this censorship is hurting educational use of the internet.

BL33K3R: Jeffery, I found your post to be very interesting. I read the article you cited under CIPA. Though the information may be somewhat correct I would not realize that their collaborative efforts in formulating convincing arguments afforded them a voice and power in the school. (Doerr-Stevens, Beach, & Boeser, 2011, p. 37).

The students were therefore writing for authentic audiences about how to improve their school, a practice that motivated them to reflect on which positions and proposals would most likely convince the school administration. Recognizing the plurality of stances on the issue served to prepare students to consider the range of different perceptions that the technology coordinator, was coping with in addressing the school's Internet policies.

Using the online/paper role-play as "prewriting" material, and the in-class argument rubric as a guide, the students then wrote argumentative papers as "themselves" that they used to meet with the school administration to argue for unblocking sites. They received a response from the district tech staff, stating that the "safe search" designed for elementary Internet use had been accidentally placed on the high school network. This "safe search" filter was removed as a result of the student's communication. When they were able to convince the administration to change their policies and unblock sites as well as allow teachers' access to YouTube, they perceived their work as having some tangible outcome, an example of an authentic rhetorical context.

In her more recent online role-plays, Elizabeth has been making increased use of Diigo for students to share their bookmarks to relevant articles and comments about those articles, as well as "sticky-note" annotations about how the articles were related to the issues they were debating. As illustrated below, in addressing the issue of video games and violence, students shared bookmarks/comments and "sticky-note" annotations to reflect on their online role-play arguments:

Use of Diigo: Online role-play

- Sharing sites related to the topic of violence and video games
- Supporting evidence: Links and sticky note comments

Supreme Court Justices Appear to Favor Videogame Industry in Violent Cases 17 views

venturebeat.com / game-industry-in-violence-case

Updated by Molly Yost on 02 Nov 10 | Comments | Like | Buy Cover | More

Molly Yost on 02 Nov 10

This is newly released information and it's actually pretty interesting

Molly Yost on 02 Nov 10

"Imagining a game that allows a player to torture babies," Justice Stephen Breyer asked "Why isn't it common sense for the state to say 'Parents, if you want your 13-year-old to play it, you have to buy it'?"

Eric Ruden on 03 Nov 10

Very interesting article. Weird how the Supreme Court was on the video game side.

Using Diigo sticky notes to reflect on a role-play

Eddy Marr 28 days ago

Kingston are these kids in high school 4th in the process of growing up and getting ready for the adult world? (I thought the point of school is to get them ready for the life)

Peter Chad 28 days ago

Well you might be mature enough to learning environment and by 16/18th grant it, but you have to earn the p

Steve Vargas 28 days ago

COMMUNISM IS WHAT IS CONTROLLING YOUR THOUGHTS, YOU ALL HAVE BOUGHT INTO THE IDEALS OF COMMUNISM AND REFUSE TO BACK DOWN FROM THEM, EVEN WHEN GIVEN EVIDENCE THAT THINGS ARE NO LONGER DEMOCRATIC.

The Online Role-play as a Learning Commons

Through participating in this online role-play, students were collaboratively constructing knowledge on the issue of blocking websites for multiple audiences with different perspectives on the issue. In doing so, students considered multiple perspectives in ways that enhance their use of argumentative strategies, resulting in a deeper understanding of how issues can be addressed through sharing knowledge and lead to solutions to problems. They were also engaged in this work knowing that they could actually influence policy changes.

These students were therefore experiencing one iteration of a digital learning commons mediated by uses of digital tools (a Ning forum, database/Diigo searches/annotations, digital mapping) for collaboratively constructing knowledge in the classroom. In doing so, they are transforming reading and writing instruction from responding to or writing autonomous texts to collaboratively creating texts as repositories of shared knowledge, leading them to perceive each other as co-learners knowledge contributing to a classroom digital learning commons.

Conclusion

The CCSS will have a major influence on English language arts instruction in the future. I've argued that an effective implementation of the CCSS requires a shift from the largely formalist approach – teaching uses of forms of reading, writing, speaking/listening and language, to a literacy practices approach that emphasizes teaching reading, writing, speaking/listening and language as literacy practices constituting social purposes, audiences, and contexts. Adopting this literacy practice approach can be supported by the concept of the digital learning commons that provides students, teachers, parents, counselors, administrators, and experts with opportunities to share their knowledge through uses of digital tools – blogs, wikis, podcasts, websites, social-networking sites, and online discussions.

This collaborative sharing of knowledge through a digital learning commons is evident in sharing of resources, curriculum, and texts through open-source sites. It is also evident in the increased use of digital annotation tools to share responses to texts, a practice that builds on the traditional of sharing marginalia on commonplace books.

To illustrate the application of the concept of the digital learning commons for use in teaching a primary focus of the CCSS on teaching argumentative writing, I describe the use of an online role-play activity conducted in a high school composition class on a Ning forum site. In this activity, students adopted a range of different roles and debated the issue of whether the school can block websites knowing that they would eventually propose to the school administration that websites be unblocked. Participating in this online role-play provided students with a social context to formulate their arguments and received feedback from different audiences, resulting in material they then used to successfully convince the school administration to unblock the websites. The online role-play therefore represents an example of collaborative sharing of knowledge mediated by uses of digital tools for the purpose of making change.

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Editor's Note: Readers of the printed version of this paper are invited to the Book2Cloud version of this paper in order to take advantage of the many links and URLs. The link to the Book2Cloud version is given below.

<https://sites.google.com/site/treasuremountain17papers/beach-constructing-digital-learning-commons>



How to Build a School-wide Portfolio Repository and Empower Students to Manage as well as Create Multimedia Portfolios

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The development of Historical digital repositories (consisting of important primary source documents/image and resources either created at or held by an educational institution's library -- along with related digitization and metadata management issues) has become a popular topic in both education and school library circles . The increasing use of these materials - in a digitized format - led to the creation and management of the Minnesota Reflections and OhioLINK Digital Resource Commons historical digital repositories -- which provide access to these important primary source materials for use by K-20 students and educators.

Development of another type of digital repository, which serves to manage and preserve student and educator "portfolios" at the K-12 level, has also emerged as a popular discussion topic as well in education and school library circles . The exponential increase in the number of K-12 institutions allowing and/or requiring students to show evidence of concept mastery by creating and submitting portfolios (which may contain a variety of media including motion, sound, graphics, and print) has also led to an increased need to both establish and manage a "school-wide portfolio repository".

The purpose of this discussion is to examine some of the key concepts and components associated with the school-wide portfolio repository, including:

- Identifying the key components of student portfolios
- Recognizing the legalities associated with K-12 student-produced portfolios
- Distinguishing between traditional copyright and open access rights assignment (ex. Creative Commons)
- Listing technological requirements for creating school-wide portfolio repositories in the K-12 school environment
- Reflecting on strategies used to promote intellectual property awareness and portfolio management skill development for both students and educators

Primary Components and Concepts of Student Portfolios: Implications for School-wide Portfolio Repository Design

The typical student portfolio may be based on several different lesson types and function at several different levels. Student portfolios may be individual lesson-based (i.e. one main topic) unit based (one main topical theme with several supporting themes), and/or course-based (one curricular category including several course concepts and assessment). Of course, there may be other configurations based on competency goals, assessment standards, and assessment techniques.

Hill in "A Portfolio Model for Music Educators" identifies the elements of a typical student portfolio in music to include "artifacts such as student papers, concert program notes, student handbooks, and media samples such as audio and video recordings." (Hill, 2008, p. 61).

Hill continues in identifying the origins of student portfolios as an outgrowth at the higher education level in response to dissatisfaction with K-12 educational outputs and from the results of several 1980's -era educational reports and developments including 1983's "A Nation at Risk" and the subsequent creation of the National Board for Professional Teaching Standards (NBPTS) in 1986. The latter included the identification of five major teacher propositions (i.e. "What teachers should know and be able to do") and also led to the NBPTS-led "Teacher Assessment Project" (headed by Lee Shulman of Stanford University). One of the key outcomes of the Teacher Assessment Project initiative was to identify the use of the portfolio as an effective way to measure effective teaching. (Hill, 2008, p. 62)

As a result of the success that the portfolio model had in both professional development and higher education, it has been adapted for use in the K-12 educational environment. In K-12 education, most portfolios are summative, based on one of the three portfolio categories as defined by Barrett:

- **Learning (Formative) Portfolio:** This portfolio is "employed on an ongoing basis to support professional development.
- **Assessment (Summative) Portfolio:** This portfolio is designed for formal evaluation.
- **Employment (Marketing or Showcase) Portfolio:** This portfolio is designed for job seeking. (Barrett, 2001, p. 111)

However, Hill acknowledges that all three portfolio types contain structural elements that would contribute to successful educational assessment of K-12 student performance (as well as strategies for preparing the student to present her/his attainment of student mastery (using the portfolio) in other present and future performance assessment environments (including higher education and employment-based arenas). (Hill, 2008, p. 63).

Of course, Hill's profile of the structure and use of student portfolios in music education belies the rationale behind developing and maintaining a school-wide portfolio repository, as many of the outputs associated with assessing the music student's

mastery of concepts and techniques are firmly rooted in the use of multimedia by the student, including sound and digitized text (i.e. composition and score) to create the required examples of mastery.

Thus, in this multimedia-based output frame of reference, student portfolios may include the following artifact types:

- Photographs
- Graphics
- Artwork
- Handwritten Documents
- Video files
- Audio files

When initiating and conducting a thorough assessment using one of the portfolio models, students are required to present their outputs of mastery using the standards and processes associated with each type of media used. For example, in the case of photographs, graphics and/or artwork, the student would be required to “either have the materials professionally scanned or contribute materials in accordance with predetermined school-wide portfolio standards (which would need to be established during the school-wide portfolio repository’s developmental stage). With respect to audio and/or video, students are required to use recording devices that use file types which preserve the output in a form the educator can access and which adhere to the standards outlined by both the individual educator and the governing body (in this case a K-12 school district) with respect to portfolio assessment. The concepts associated with portfolio assessment policy (with respect to their application and use in the school-wide portfolio repository) are design issues that will be discussed later in this article.

Legalities of student portfolios - Information resources, Creative Commons licenses, and school-wide portfolio repositories

In addition to identifying the types of acceptable media used in K-12 student portfolios, issues of intellectual property rights (IP) - from both the student and the educator/school perspectives are important. Some of the key elements of IP rights for students relate to those associated with identifying the types of licensing associated with the typical student portfolio. While most readers are familiar with traditional copyright and its implications (particularly for students ages 6-18 who are considered minors in the eyes of the law), they may be less familiar with concepts associated with Creative Commons (CC) licensing

Creative Commons licensing and the “open access factor”

With respect to the IP portions of student portfolio management in the school-wide portfolio repository environment, it is appropriate to share information related to the Creative Commons (CC) - including a conceptual overview, brief history, structural review, and the identification of available resources which can be used in the teaching

of students ages 6-18. CC information will then be used to form the basis for recommendations as to how schools (and school librarians) can create a framework (if one doesn't already exist) to develop policies and practices that will enable the school library to serve as the school's CC policy and information center. The article may also identify broader possibilities as to the possible use of CC metadata as a key element of school-wide portfolio repository database discovery and provenance (in addition to functioning as a tool for intellectual property governance).

CC as a concept

The Creative Commons (CC) provides free licenses and legal tools to allow a creator of work to "mark creative work with the freedom the creator wants it to carry, so others can share, remix, use commercially, or any combination thereof." (Creative Commons - *About*, 2010). John Wilbanks, leader of the Science Commons project at Creative Commons explains some of the motivations behind the original CC concept by summarizing a 2009 presentation he made with CC founder James Boyle at the National Endowment for Science Technology and the Arts (NESTA) in the United Kingdom:

Open innovation is a phrase in danger of being misused. It's a catch-all sometimes for "we don't know why our systems aren't working and what we need to do" - you can just say "we need open innovation" and hide behind it. But this meeting gave me hope that the systematic efforts needed to enable Chesbrough's vision of open innovation may be possible.

If we're going to achieve that particular vision of innovation, it's important to remember its tenets. Knowledge must move - "purposively" - in and out of organizations. There must be investment in the external capacity of the market itself to generate useful knowledge. And we need business models that are capable of surviving in an open environment.

The old theory of doing business as a hermetically sealed entity was never really true. Knowledge leaked, at conferences and in bars, in phone calls and in passing. And the pharma industry essentially practices a form of open innovation already, through its constant forming and reforming of alliances and mergers and restructuring. But it's not practicing open innovation at scale, with efficiency, or with purpose.

Organizations like Creative Commons are deeply interstitial and hard to fund. And CC's been the outlier that has actually had success in fundraising. It's even harder to fund the smaller organizations. Getting funding to do empirical studies on the impact of a commons based approach is frightfully hard, for us as well as for groups like the Open Knowledge Foundation. So I'm hopeful that an event like yesterday's will start to raise the profile of these approaches, spur the emergence of pilot projects that tie together business models, copyrights, databases, patents, and more. (Wilbanks, 2009, p. 1)

Thus the essence of Wilbank's article suggests that CC was born as a way to create a collaborative business model for intellectual property rights and access that functions in an open/public domain-based environment and benefits all parties involved (rather than rewarding those who "own" a collaboration-based creations' property rights at the expense of those who may have contributed to that collaboration).

ccLearn and Creative Commons education

As educators work to create their own school-wide portfolio repositories , they may wish to examine the resources found at ccLearn - <http://creativecommons.org/education/> ccLearn is the education component of Creative Commons and provides links to a comprehensive list of resources about OERs in general http://wiki.creativecommons.org/OER_Resources, Creative Commons license conditions information <http://creativecommons.org/about/licenses/> (which includes all of the attributes of a CC license) as well as search engine access points (which use CC licensing metadata for search and discovery purposes) as well as a host of other resources. ccLearn resources would serve as an excellent instructional tool for educators as they inform colleagues about school-wide portfolio repositories and CC licensing via professional development opportunities, social media, and other communication venues.

DiscoverEd, cc REL, and other OER repository projects

To expand upon one of the elements of OER use of Creative Commons (CC) licensing metadata in interoperable ways, the DiscoverEd project is an outgrowth of ccLearn. Using semantic web coding techniques (specifically, a Uniform Resource Identifier - URI - a version of the Uniform Resource Locator - URL - in combination with Resource Description Framework - RDF - elements), DiscoverEd is an educational search prototype that attempts to search for existing metadata about educational resources. It uses traditional materials catalog search techniques, but adds a consistency factor (i.e. CC licensing metadata) to identify and locate portfolio-related outputs/learning objects found in either single or multiple repositories as well as other virtual locations. (Kozak, 2010, p. 2)

Specifically, DiscoverEd's incorporation of RDF and URI metadata components are part of a larger metadata specification known as the Creative Commons Rights Expression Language - or cc REL. Based on Dublin Core metadata standard architecture, the cc REL model used in DiscoverED distinguishes between two classes of properties;

- Work properties (describing aspects of specific works including the type of cc license assigned to the work)
- License properties (describing aspects of licenses). (Abelson, et al, 2008, p. 6)

While it can be said that the cc REL model applies to every school-wide portfolio output/learning object to which a Creative Commons license has been assigned, the DiscoverEd tool takes that application a step farther by generating links between the work metadata, the CC license metadata, and information describing which repository houses that resource (and how the resource may be accessed). According to Kozak, the World Wide Web Consortium (W3C) standards for cc REL can be found at http://wiki.creativecommons.org/CC_REL (Kozak, 2010, p. 2)

Finally, with respect to cc REL's aforementioned Uniform Resource Identifier - URI in combination - in combination with Resource Description Framework - RDF - elements, another use of the technology was recently announced which enables student portfolio outputs/learning objects to be tagged and mapped according to both international and U.S. state and national education standards. In a July 13, 2010 communiqué, The Global Learning Resource Connection (GLRC), based in Tuscon, AZ USA and the IMS Global Learning Consortium, based in Lake Mary, FL USA announced their partnership which would allow the IMS's Achievement Standards Network metadata (describing over 350,000 learning objects using a derivative version of cc REL called Common Cartridge) to be linked to the GLRC trans-jurisdictional mapping of learning outcomes to form an international environment for publishing and discovering both student and educator portfolio outputs/learning objects. (IMS Global, 2010, p. 1)

Technology Requirements for School-wide Portfolio Repositories and Metadata

There are a number of factors to consider relative to determining the technical specifications associated with the design of a school-wide portfolio repository. Many of the decisions center around the following concepts:

- Type of database support (in-house, external, etc.)
- Storage capacity
- Free vs. fee storage hosting and access (for external applications)

According to the Information School at the University of Washington's *Working Portfolio Digital Repository* website (2010), the following are the technical guidelines, options, and strategies used and promoted by the university to provide storage and documentation support for the variety of media associated with student portfolios:

[University-supported strategy] Every matriculated student at the University of Washington has personal space on University servers for the storage and access to resources relevant to his or her education. The working portfolio repository can be constructed in this personal server space. However, students should be aware that: (1) the University caps the size of the space; and (2) no access to this space is guaranteed after graduation meaning that resources would need to be migrated to a non-University server.

[non-university storage examples]

Digital Repository: Example of Storage on SkyDrive

Free network-accessible storage space is available in several "flavors" using Microsoft SkyDrive by Windows Live. The University flavor provides an advertisement-free space under University sponsorship that also links to other student resources. The non-University flavor available to anyone requires some tolerance for advertising but will provide post-graduation access and services.

Digital Repository: Example of Storage in Blog

With increasing frequency, students are using personal blog spaces to manage both their long-term requirements to store digital resources they may want to make selectively public and their public interface to their work product. As a result, blog spaces provide publication functionality not available through the University-provided space or SkyDrive meaning that the roles of the working portfolio repository and the presentation portfolio(s) can be managed from a single technical platform.

Digital Repository: Example of Storage Using Dropbox

The Dropbox cloud service (<http://www.dropbox.com>) provides limited free space (with additional free space allocated) that, once installed on a PC or Mac creates a directory on your local machine that is continuously replicated in your allocated space in the Dropbox cloud service. You can add/edit/remove files from your local computer Dropbox directory and it will be replicated on the cloud server either simultaneously with saving or the next time you have a network connection. You can "share" resources at either the directory (folder) or individual file level. Identifying a file or directory as "shared" issues an invitation to the designated share person(s). After accepting the invitation (which earns one additional free space), whenever you update a shared file, it is updated automatically on the local machine of everyone with whom that resource is shared. (University of Washington School of Information, 2011, p. 1).

Descriptive metadata

Another important part of the technological requirements associated with school-wide portfolio repository design (which incorporates the in-house design and support model) is to determine how the portfolios and outputs/learning objects will be described and accessed. The form of, access to, and evaluation of metadata relative to the structure and description of the items will be an important part of overall functionality of the school-wide portfolio repository. Descriptive metadata elements may include the following:

- Title
- Creator
- Contributor

- Description
- Date of creation
- Publishing agency
- Dimensions
- Item type
- Item physical format
- Formal subject headings
- Locally-assigned subject headings

Similarly, administrative metadata elements (those that identify the origin of the output/learning objects, where they are housed, etc.) may include the following:

- Parent collection
- Contributing organization
- Rights management
- Local identifier
- MDL identifier

Furthermore, technical metadata (relative to the technical specifications and values associated with the output/learning objects) may include the following:

- Scanning center
- Object file name
- Date digital
- Item digital format
- Master file format
- Master file size
- Master file bit depth
- Master file resolution

This list is comprehensive and corresponds to numerous established cataloging content standards including AACR2, Describing Archives: A Content Standard (DACS), and Cataloging Cultural Objects (CCO).

There is also intellectual property (IP) metadata that must be considered and made accessible. In the case of the use of Creative Commons (CC) rights associated with student output/learning objects, the metadata may look something like this:

Figure #1 Creative Commons license conditions



Attribution
by

You let others copy, distribute, display, and perform your copyrighted work – and derivative works based upon it – but only if they give credit the way you request.



Share Alike

sa

You allow others to distribute derivative works only under a license identical to the license that governs your work.



Non-Commercial

nc

You let others copy, distribute, display, and perform your work – and derivative works based upon it – but for non-commercial purposes only.



No Derivative Works

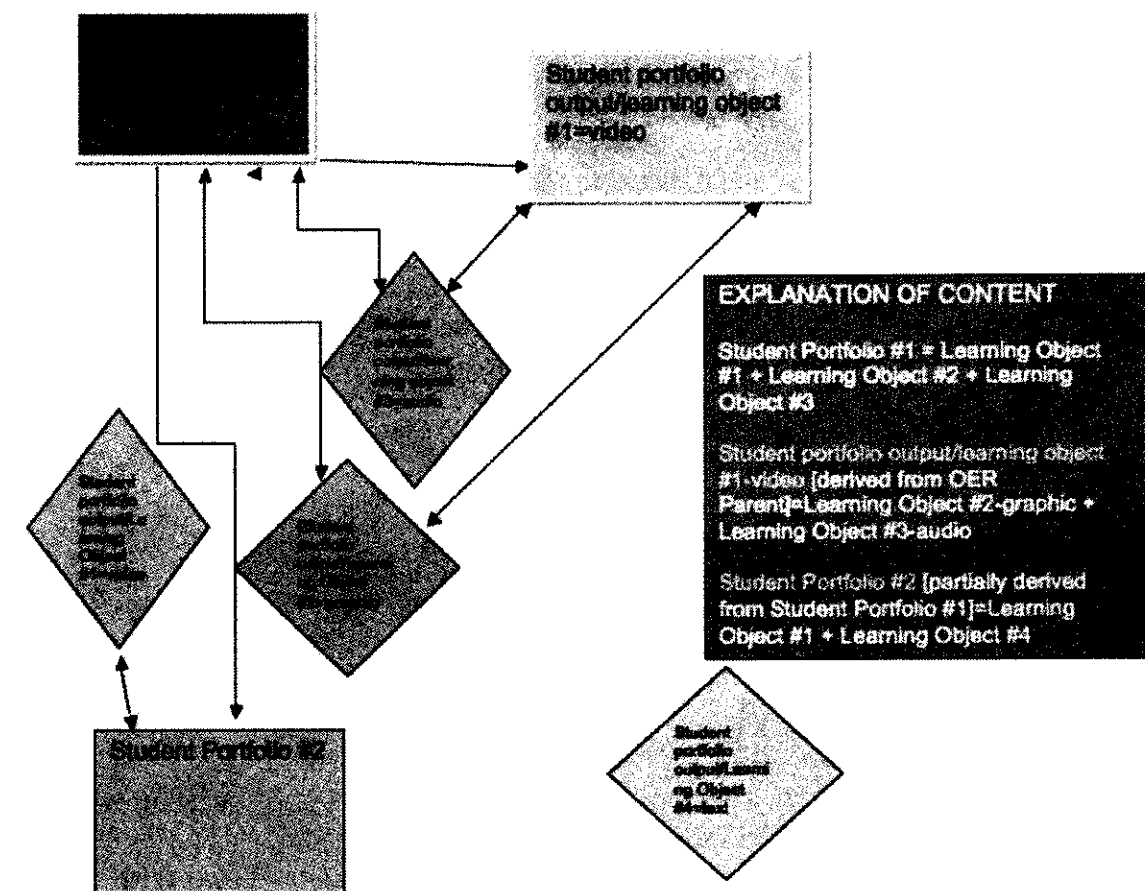
nd

You let others copy, distribute, display, and perform only verbatim copies of your work, not derivative works based upon it

Source: <http://creativecommons.org/about/licenses/> ; Used with permission and licensed under a Creative Commons Attribution 3.0 License

One of the major benefits of incorporating metadata access into the management and use of a school-wide portfolio repository is to enable students and educators to explain the relationships of the multiple outputs/learning objects which may be part of a typical student portfolio and promote the tracking and IP rights management of these resources, both in short-term and long-term scenarios:

Figure #1 Student Portfolio Composition and Provenance Structure



In this graphic, the fact that a portfolio's component outputs/learning objects as parts contributing to the portfolio as a whole is evident. Also, there is evidence that an output/component part stands alone and contains its own requisite metadata.

Future Research – School-wide Portfolio Repositories

Based on the success of in-house storage areas, wikis, and video portals (i.e. YouTube) as repositories of student-created outputs/learning objects, the future of school-wide portfolio repositories will, more than likely, continue to be bright. As schools, libraries, government agencies, museums (and, for that matter, for-profit companies) recognize the benefits of housing and managing creative content (which, in the case of school/education use demonstrates mastery and best practice) as a low-cost, viable alternative to recreating content over time (for some formats), the development of school-wide portfolio repositories (and similar digital-based multimedia repositories) will continue to grow. It remains to be seen, however, what preservation efforts will be required to maintain the technology associated with digital-based multimedia repositories to lessen the likelihood of hard-to-locate content, file corruption, data loss, and/or antiquated technology, all of which would result in limited and/or lost data and access.

Future research in the school-wide portfolio repository arena may include identifying educational institutions which have created a repository, distributing surveys to school librarians to determine their initial and continued levels of participation in the project, and developing/distributing a school-wide student portfolio repository audit checklist to assess both the short and long-term performance of the repository and the school librarian's contribution level (and quality of contribution) to school-wide student portfolio repository management.

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Appendix A: School-wide Student Portfolio Repository Developmental Checklist

I. Student Competencies:

School-wide Portfolio Repository Skills for Students

- ✓ Content management skills
- ✓ Technical compliance identification skills
- ✓ Time/data management skills
- ✓ Presentation access and delivery ability utilizing output(s)/learning object(s)
- ✓ Planning and developmental skills (i.e. database management)

II. School Librarian Repository Development:

- ✓ Identify curricular areas using student portfolios in student assessment
- ✓ Discuss policy development and maintenance
- ✓ Discuss School-wide Portfolio Repository database development and maintenance - processes and maintenance cycles
- ✓ Select technology options and develop portfolio storage/disposition plan
- ✓ Identify persons/groups responsible for materials input and metadata options (automated processes vs. human input)
- ✓ Plan and present information sessions on School-wide portfolio repositories, IPRGM, Creative Commons
- ✓ Prepare and/or acquire takeaway materials on these topics (including this presentation) to distribute as needed to stakeholders
- ✓ Propose formation of a School-wide Portfolio Repository Advisory Board and offer to host/sponsor regular meetings

Appendix B: School-wide Student Portfolio Repository Metadata Examples - Rights Metadata and Assets Metadata:

I. Rights Metadata

ccREL - Resource Description Framework (Used for Creative Commons licensing):

Based on use of Uniform Resource Identifiers (URIs) and RDF triples
(subject/predicate/object relationships)

- Example: <http://adamich.org/OER/> dc: title "Tom Adamich's Open Educational Resource" = Title
- <http://adamich.org/OER/> cc:attributionName "Tom Adamich" = creator
- <http://adamich.org/OER/> cc:attributionURL <http://adamich.org/OER/> = URL

Enables two classes of properties to be associated with every IPR:

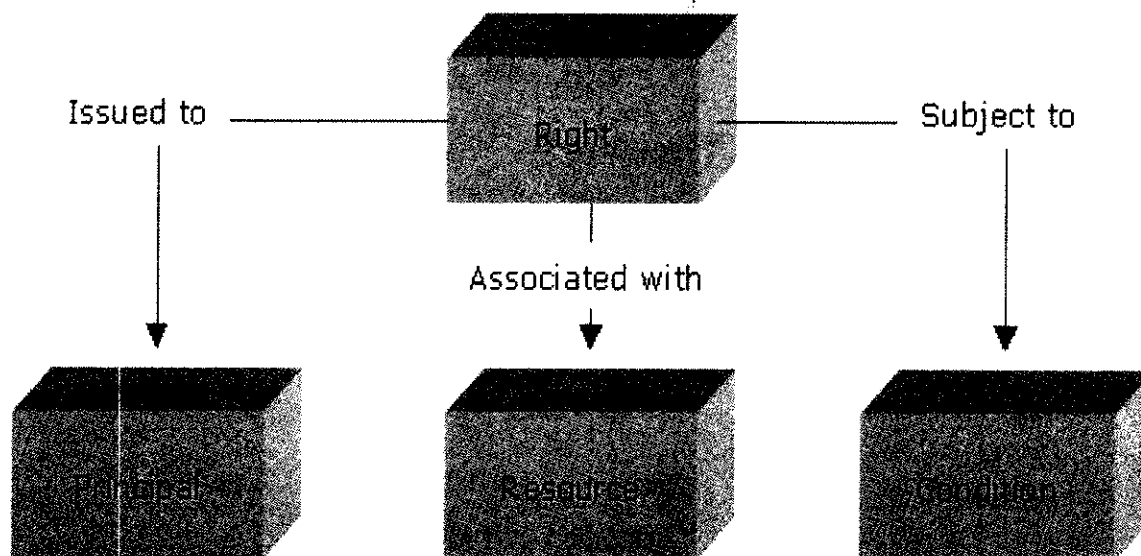
- Work properties (details about an IPR, including under what license the work is distributed)
- License properties (describing the aspects of the licenses used)

Creative Commons RDF triple example:

<http://creativecommons.org/licenses/by/3.0> cc:attribution Non-commercial

MPEG-4 Rights Expression Language schema -

http://mpeg.chiariglione.org/standards/mpeg-21/mpeg-21.htm#_Toc23297968



II. Student Portfolio Media Assets Metadata

ACRO Stills Collection example:

Title: Calarge 2

Description: computer graphic; layered pictures; abstract; fish.

Licence: Attribution-NonCommercial

Filesize: 1,429,264 bytes



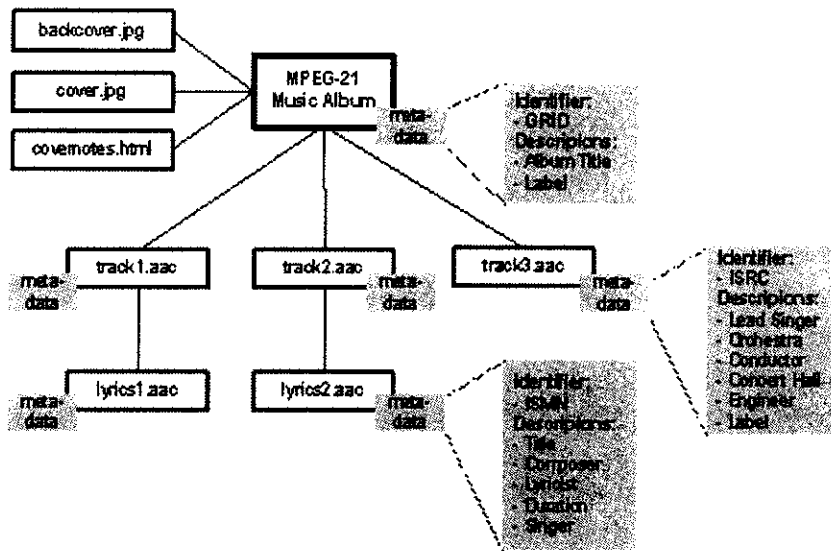
MPEG-21 Rights Expression Language (REL)/Rights Data Dictionary (RDD) Schema

Music Album Example: http://mpeg.chiariglione.org/standards/mpeg-21/mpeg-21.htm#_Toc23297968

Dublin Core Metadata for Student Portfolio Media Asset Component

- `<rdf:type rdf:resource="&mp7g;Image"/>`
- `<dc:title xml:lang="ca">Cover.jpg</dc:title>`
- `<dc:description xml:lang="eng">cover art for MPEG-21 Music Album...</dc:description>`
- `<dc:language>us</dc:language>`
- `<dc:date rdf:datatype="&xsd;date">1999-05-16</dc:date>`
- `<dc:format>image/jpeg</dc:format>`
- `<dc:creator><rdf:Bag>`
- `<rdf:li>Jones, Tom</rdf:li>`
- `</rdf:Bag></dc:creator>`
- `<dc:publisher rdf:resource="http://www.musicsource.com"/>`
- `<dc:relation rdf:resource="MPEG-21 Music Album"</dc:relation`

Schematic Relationship for Student Portfolio Media Asset and its Components





From a Conceptual Model of Responses to Digital Storytelling Approaches for School Librarians and Teachers to Instruct and Support Digital Storytelling

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Abstract

This paper presents selected findings from a mixed methods study centered upon participant-observation of digital storytelling in intermediate classroom and middle school library settings. For this study, “digital storytelling” is defined as a short, multimedia presentation of a story, created by students, under the guidance of school librarians or teachers. Because much of the literature and practice of digital storytelling emphasizes the creator, or teller, this research examines the response of the “listener-viewers” to explore and support in a digital environment the interactions afforded to audiences of traditional, live storytelling. The research findings show six prominent themes representing how students respond to and engage in digital storytelling, presented in a conceptual model. The themes are Engagement, Action, Emotions, Learning, Similar Experiences, and Next Steps. Key components of digital storytelling as a classroom and school library activity are the “self” as a viewer of digital storytelling, formative and summative viewing practices, and how classroom teachers and school librarians teach and facilitate digital storytelling, including integration of technology and information literacies and collaboration.

Introduction

Librarians who share storytelling in schools and public libraries perform this work as part of the legacy of the first children’s librarians, who were talented storytellers, as well as visionaries and strong advocates for children’s services in libraries. The storytelling endeavors of such librarians as Effie Lee Power and Charlotte Keith Bissell showcased knowledge of tales and literature, but also a creative and thoughtful approach to interacting with children (Greene & Del Negro, 2010; Kimball, Jenkins, & Hearne, 2004). Children’s librarians engaged the children in the library for specific moments in time by telling captivating stories, but they also inspired lifelong enjoyment of and dedication to reading and information activities.

In traditional storytelling, the teller and audience take on active roles and interact with each other during the story; for example, the teller can adjust the tale according to how a particular audience reacts or inherent qualities that they possess (such as age), and the

audience members, by nature of their participation, backgrounds, or body language, play a part in shaping the story that is told. Indeed, storyteller and author Margaret Read MacDonald refers to storytelling as “an audience-shaped art form,” in which “the tale is only one part of the story event” (MacDonald, 1993, pp. 93, 31). Additional attributes of the experiences of the storyteller and listener are presented in Table 1.

Table 1. Roles and behaviors of storyteller and listener in traditional storytelling.

Storyteller	Listener
Creates trust in the listener, creates sense of and rapport with the listener	Trusts the storyteller, feels sense of rapport
Creates and stimulates mental images for the listener through storytelling	Sees images of the story in the mind's eye through referential and experiential interpretations
Tells a story with these components: characters, intent, actions, struggles, and details (Haven, 2007); as teller, enters into dialog with listener	Listens to and follows the story, as listener, enters into dialog with teller
Tells a story live, usually in the same room as the listeners	Listens to a live story, usually in the same room as the teller
Performs gestures or movements, uses body language, uses props to support telling the story	Observes the teller's use of gestures, movements, body language, and props as part of the listening and viewing experience
Provides opportunities for interaction, participation, response, dialogue; in turn, responds to listeners' responses and reactions	Responds to teller's invitation (which may be overt or less explicit) to participate vocally, with actions, in other observable ways, such as body language
Adjusts and improvises content, pace, timing, vocabulary, dialog according to listeners' responses and needs of the audience; connects this audience with this story (Lipman, 1999)	Demonstrates needs through feedback, observable behaviors (e.g., eye contact) and/or inherent qualities (e.g., age)
Creates and participates in a unique, singular storytelling experience via his or her telling role in the storytelling process	Creates and participates in a unique, singular storytelling experience in a time and place via his or her listening role in the storytelling process
Provides the focal point of a shared, live experience for the audience	Becomes part of a group of listeners and part of the community in the space
Performance and dramatic appeal may calm or energize the audience (MacDonald, 1993)	Show or feel emotional response or connection

Digital storytelling expands and enriches opportunities for storytelling in libraries by incorporating multimedia technology and multimodal forms of engagement into storytelling experiences. In this study, digital storytelling is defined as a multimedia presentation of a story or narrative, created with “off-the-shelf” (not professional)

technology, by students under the guidance of classroom teachers and school librarians. Examples of digital storytelling products used in this study are iMovie (used by students in the study to make digital book trailers and a story about life on a middle school team) and Photo Story (used to depict topics about Ancient China). Additional information about the students' work is provided in the Methods section, below.

As described in the Literature Review below, much of the current research and practitioners' writings on digital storytelling in school settings attends to the learning objectives or experiences of students creating – not necessarily viewing – a digital story. This study was designed to examine the response of the audience, or “listener-viewers,” in digital storytelling projects, in order to explore and support in a digital setting the listener benefits inherent to the traditional, live storytelling model. Some surprising results cast these research questions in a new light during the course of the study; namely that in classroom and library digital storytelling, the roles of storyteller and audience are not as clear-cut as in traditional storytelling. Rather, in most school-related digital storytelling, students assume dual roles as creators (or the storytellers) and as viewers (the audience). They create and edit their own projects as “viewers” and participate in the viewing of their classmates' work throughout the development of the projects (formative viewing) and typically in a showcase or sharing day at the end (summative viewing).

This paper presents selected findings of a mixed-methods, exploratory study of listener-viewers in digital storytelling in intermediate classroom and middle school library settings. This study sought to investigate two research questions. First, how do student listener-viewers respond to and engage in digital storytelling in school library/classroom activities in the intermediate classroom and middle school library? Next, how do the student listener-viewer responses characterize digital storytelling as a storytelling activity in the school library/classroom? The sections that follow include a review of literature, study methods and data analysis, findings, and conclusions, including ways for school librarians to support the listening and viewing processes in digital storytelling.

Literature Review

It is helpful to consider definitions and examples of storytelling, story, and digital storytelling as context for this study. Regarding digital storytelling, several interpretations are represented in the literature. In a 2010 *Knowledge Quest* article, Leslie Rule, Producing Supervisor of the Center for Digital Media at KQED (a public television and radio network in Northern California), presents a definition that focuses on the media and communicative elements, with digital storytelling as,

“the modern expression of the ancient art of storytelling. Digital stories derive their power by weaving images, music, narrative and voice together, thereby

giving deep dimension and vivid color to characters, situations, experiences, and insights.”

Rule’s discussion of digital storytelling emphasizes the ease and accessibility of digital storytelling activities for school librarians, as well as the potential for digital storytelling to foster authentic, personal, powerful storytelling opportunities for students (Rule, 2010, p. 56).

In the ALA TechSource *Library Technology Reports* edition “Digital Storytelling in Practice,” Kelly Czarnecki also uses the word “narrative” to describes digital storytelling: “the act of using sound, images, and video to form a narrative,” with examples of digital storytelling as applied in public libraries, academic libraries, and museums. The University of Houston maintains a website with cross-disciplinary examples of digital storytelling as a teaching tool, and their site uses the word “stories” to define digital storytelling, with the additional of a point of view:

“the practice of using computer-based tools to tell stories. As with traditional storytelling, most digital stories focus on a specific topic and contain a particular point of view.” (“Educational Uses of Digital Storytelling,” n.d.)

Some ad hoc categories and formats of digital storytelling are as follows:

- In-person, live telling, recorded in a digital format, sometimes in front of a green screen (recorded on video and posted to Youtube or Vimeo)
- Digital book trailers (Animoto)
- Personal narratives (iMovie, Photostory)
- Storytelling via digital library resources (International Children’s Digital Library)
- Informational/content-oriented storytelling (Movie Maker)
- Text or audio-recorded narration of images, drawings, or photos (Voicethread, Storybird)

Personal narratives are a common focus of digital storytelling. The Center for Digital Storytelling, led by Joe Lambert, describes digital storytelling thus: “a short, first-person video-narrative created by combining recorded voice, still and moving images, and music or other sounds.” Educator, author, and consultant Bernajean Porter’s Digitales program also highlights the personal narrative (among other forms) in digital storytelling; her website (<http://www.digitales.us/>) features numerous categories and examples of projects with personal stories, reflections, and experiences as central components.

Turning now to the “storytelling” reference in the term “digital storytelling,” the National Storytelling Network (NSN), explains that storytelling is “the interactive art of using words and actions to reveal the elements and images of a story while encouraging

the listener's imagination." Further, NSN establishes that storytelling is interactive, and that "the responses of the listeners influence the telling of the story. In fact, storytelling emerges from the interaction and cooperative, coordinated efforts of teller and audience" (National Storytelling Network, n.d.). This interchange between audience and storyteller fosters immediacy and supports a dynamic, participatory story-listening and storytelling experience.

NSN maintains that the idea of "story" can vary across cultures, and within digital storytelling, the concept of story also varies widely. In *Story Proof: The Science Behind the Startling Power of Story* (Libraries Unlimited, 2007), storyteller and author Kendall Haven defines story as "a detailed, character-based narration of a character's struggles to overcome obstacles and reach an important goal" (Haven, 2007, p. 79). Haven differentiates stories from narratives in that stories can be narratives, but narratives are not necessarily all stories. Narratives may be plot-based or information-based accounts that leave the connections of context, meaning, and relevance to the reader (Haven, 2007). As described above and in the projects in this study, examples of digital storytelling reflect a range of story and narrative frameworks.

Two classic essays on storytelling as a live, social, interactive event shaped the storytelling context of this study. First, in a 1969 essay entitled, "Toward an Understanding of Storytelling Events," Robert Georges, Professor Emeritus in Humanities at UCLA, suggested that storytelling should be considered a holistic, "complex communicative event identified as a 'storytelling event'" (Georges, 1969, p. 317). According to Georges, storytelling is characterized by direct, person-to-person communication shared by encoders and decoders (at least one of each, which is not necessarily represented in digital storytelling). For Georges, each storytelling event is a unique, social experience, occurring only once in time and space in a setting of particular social relationships and influences. Georges rejected ideas that listeners are passive actors in storytelling events; that stories should remain static as they are reproduced from teller to teller and event to event; and that variations in stories represent accidental diversions, and asserted that the relationships and settings of each storytelling event meld into a moment that cannot be replicated (Georges, 1969).

Author and storyteller Jack Maguire presents benefits of storytelling in an essay about storytelling as an educational process. Maguire emphasizes that storytelling fosters direct, positive effects between human beings, and that storytelling gives knowledge a human voice that is distinct from the written word, which motivates listeners to think more actively and critically than when reading. Maguire explains that storytelling allows listeners to imagine stories through "the mind's eye," and writing in 1988, he expressed concern that a media-saturated world threatens the capacity to construct personal images, which Maguire believes supports students' interactions with subject-area materials in the school setting. Finally, Maguire finds benefit in the imperfect nature of live storytelling, because listeners can engage with the story actively in their

minds to fill in moments of hesitation or stumbles made by live storytellers (Maguire, 1988).

Considering Georges' and Maguire's storytelling characteristics, it seems possible that digital storytelling may not "hold up" in a test for essential characteristics of storytelling, particularly from the side of the listener or viewer. In digital storytelling "performances", the story is usually presented in a fixed, finished medium. As such, it seems that the audience involvement and response in digital storytelling would differ from the interactive, dialogic nature of oral storytelling as it is experienced live and as it is described in classic storytelling literature. With so much focus on the user, it seems that the role of the listener, so critical in traditional storytelling, may be overlooked in digital storytelling events.

In attempting to consider the elements of traditional storytelling as applied in the digital storytelling form, the strongest similarity seems to rest in the presentation of a story or narrative, though such frameworks are broadly interpreted, from digital versions of research projects to recorded tellings of folktales. The most apparent distinction is that, in most cases, traditional storytelling is presented via live teller or tellers in the same physical space as a live audience, and digital storytelling is presented via digital multimedia, and the teller, or author-creator, may or may not be present for the performance. In group viewing settings of finished digital stories, the storytellers do not typically have the opportunity to adjust the tellings to fit the audiences' responses, as would be possible in traditional storytelling. Likewise, if a story is "done" (or the file is closed to editing), the listener-viewers of digital storytelling aren't afforded the opportunity to participate or react, at least in a dialogic manner. There is a social orientation to many school and library-based digital storytelling activities, which often include a group "performance" of digital stories with the storyteller(s) in the room.

A summary of attributes of traditional and digital storytelling is presented in Table 2. Note the asterisk (*) in the description of storytelling as a "fixed, finished medium;" this is a characteristic that took on expanded dimensions through the course of the study, described further in the results.

Table 2. Comparison of traditional storytelling and digital storytelling.

Traditional Storytelling	Digital Storytelling
Storyteller and listener or audience	Storyteller/creator and listener-viewer
Length varies from approximately 4-5 minutes to 45 minutes-one hour	Length is usually 3-5 minutes, possibly longer
Includes story or narrative	Includes story or narrative

Presented by live teller	Presented electronically, on a screen
Performance occurs in group setting	Performance can be in a group setting or individual setting
Story is told through words, vocal inflections, gestures, body language, movements, musical instruments, and/or props	Story is told through images, photographs, sound, music, videos in a multimedia, electronic presentation
Audience can interact, participate, give feedback to teller; teller can adjust and change according to feedback received	*Story is presented in a fixed finished medium, teller and audience cannot change the course of the story during the story. Potential for exchanges between teller and audience during live screenings.
No technology skills or equipment required to produce or view	Technology skills and equipment required to produce and view
Teller provides verbal descriptions and listeners create images in mind's eye	Creator presents images directly on screen

Several research studies examine learning and social outcomes of digital storytelling with young people. Most research tends to focus on outcomes related to creating a story. However, Roche-Smith's study of an after-school digital storytelling program at the middle school level did show that one student who had previously exhibited only minimal efforts in his own digital storytelling project shared his writing, created detailed stories, and increased his concentration after seeing peers receive clapping and attention for screening digital storytelling projects in a group setting. The author reported that digital storytelling became a means for the students to construct and express new understandings of themselves and to communicate with each other (Roche-Smith, 2004).

In a study of an after-school technology program for adolescent girls, Hug found that although the girls became capable users of the digital storytelling technology, they did not identify themselves as expert users; rather, the technology was "invisible" and the story was the main focus (Hug, 2007). Hug's study also addressed students' cognizance of their viewers. In this after-school club, the group viewing was open to friends and family, and this "public" aspect of the viewing motivated some girls to present less personal stories; other girls elected not to have their stories included in the viewing (Hug, 2007).

Some research on digital storytelling relates to learning and outcomes related to confidence. Hathorn studied the same program as Roche-Smith (above) through a different lens: benefits for the African-American male. She studied elementary and middle school students in the after-school program, and concluded that the digital storytelling program helped students to gain language learning, technology skills, and technical skills vocabulary, in addition to self-confidence in technology use (Hathorn, 2005).

Carey studied digital storytelling in a second grade class in a year-long ethnographic research study, and she reported that, "multimodal instruction, based on a social semiotic approach to literacy learning, offered many modes of meaning making that fostered student engagement" (Carey, 2009, p. 146). Ochsner found that making didactic digital movies helped middle school students to learn science content (Ochsner, 2010). Stojke conducted a study of four middle school students at a summer writing clinic, and she found that digital storytelling helped the students to make substantial revisions in their writing, including "adding, deleting, and rearranging text" (Stojke, 2009, p. 84).

Professor Brian Sturm focuses on the listener in his research on the "storylistening trance." In participant-observation studies of storytelling festivals (in the traditional, live storytelling format) and interviews with listeners ranging from young people to the elderly, Sturm identified six categories to represent the listener's experience with a state he calls the "storylistening trance." This altered state of consciousness is characterized by realism, lack of awareness of surroundings or other mental processes, engaged receptive channels, control, placeness, and time distortion during storytelling experiences (Sturm, 1999, 2000). Sturm's research on responses to storytelling provides a theoretical foundation for this investigation of responses to digital storytelling.

Methods

This study incorporates several methods of qualitative research. The project was primarily an ethnographically-oriented, participant-observer study, applied in three intermediate and middle school classroom settings. Student surveys, focus groups, teacher and librarian interviews, and learning artifacts were the other means of data collection.

The study population was students from classes in three Pittsburgh, Pennsylvania-area schools in the intermediate and middle school grade levels. The three school sites were selected by convenience sample, a nonprobability sample in which the researcher selects from groups that are readily available for study (Babbie, 2007; Herek, 2009). The study focused on the students' activities in series of digital storytelling lessons or activities for intermediate and middle-school students, taught or facilitated by teachers and school librarians working in collaboration. The students in the study included students in grade 6, who were ages 11 and 12 (School 1), a mixed-grade level classroom of grades four and five, with students ranging from age 9 to age 11 (School 2), and grade 7, in which the students were 12 and 13 (School 3). The projects and scenarios are presented in Table 3.

I selected the groups to study based on my professional contacts and the teachers' and librarians' plans to facilitate digital storytelling activities during the 2010-2011 school year. In order to learn about how students listen and respond to digital storytelling in

the intermediate and middle school classroom and school library, I studied the events of the classroom in as natural and authentic a setting as possible, rather than via experimental design. As such, my role as participant-observer did not involve the development of the lessons, but rather the investigation of digital storytelling as it was currently being used in classrooms and school libraries. I had the opportunity to observe three very different digital storytelling projects.

At School 1, a classroom teacher and school librarian collaborated to teach 15 sixth graders to use Photo Story (a free download from Microsoft) for the first time in their library experiences. The students used images and music to accompany scripts that they wrote and narrated to present information about subjects in Ancient China, such as the terra cotta warriors and important inventions. This was the classroom teacher's second experience using Photo Story, and the librarian had facilitated several similar projects with different students. The library research process, including selecting and reading content from library books and from online databases and teacher-selected websites, took the place of reading the textbook chapter on Ancient China, with the exception of the geography section, which all students read.

Schools 2 and 3 used iMovie, an Apple movie-making product that the schools had purchased. At School 2, a mixed-grade level fourth and fifth grade technology class of 17 students made digital book trailers, also as a first classroom experience with movie-making software. Students self-selected groups of three to five classmates to develop book trailers on novels that they had read in their language arts class. The composition of the groups was based in part on what novels the students wanted to use, and some students chose their groups in order to work with friends. The idea for the project included some cooperation between the classroom language arts teachers and technology teacher, and the technology teacher taught the lessons.

At School 3, three seventh graders from a language arts class made an iMovie in a largely independent project. These students were part of a grade level "team" that made iMovie podcasts and projects quite frequently. For this particular iMovie, the students made a video about life on the "Green Team," their grade level team at school. The video was initially designed as a student-made component of a presentation that their teachers shared at a middle school conference, then later (for the part that I observed), the students edited and added sections to use the video to tell incoming sixth graders about their team. The classroom teacher facilitated a brainstorming session with one of her language arts classes to solicit ideas for the video, and both she and the school librarian provided technology support and resources, plus time in the school day and space in the library for making the video.

Table 3. Scenarios, participants, and number of days spent observing at each of the three school sites. "Observation Days" column includes digital storytelling project development and performance days.

School	Grades Levels and Ages	Subject Area	Activity	Students in Study	Educators in Study	Observation Days
1	Grade 6, ages 11-12	Social Studies	Ancient China Photo Story	15	1 teacher 1 school librarian 1 para-professional	13
2	Grades 4-5, ages 9-11	Technology/ Language Arts	Digital Book Trailers / iMovie	17	1 teacher	10
3	Grade 7, ages 12-13	Language Arts	Team Podcast/ iMovie	22	1 teacher 1 school librarian	6

With this type of study, largely exploratory in nature, with an aim to characterize the listener-viewer response and how it is represented in this type of classroom or library activity, there were advantages to studying three schools. These included seeing a range of independent and teacher-led projects, different ages and ability levels within the intermediate and middle school grade levels, varying levels of comfort and familiarity with technology, different software applications and computer operating systems, varied classroom structures and approaches to teaching and learning, diverse genres and purposes of digital storytelling, and distinct formats for the viewing of the completed digital storytelling projects. As Heath and Street describe, there is "immense variability as well as stability" across cultural contexts, and this was very true of these classrooms and libraries (Heath & Street, 2008).

A potential disadvantage to observing lessons that were already planned (and did not follow an experimental design) was that the three settings all used digital storytelling for a similar purpose: conveying information. The formats that students employed represented diverse techniques of sharing information – recording audio narration or scripts, acting out scenes, talking to the camera, live video recording of real events, improvising scripts, showing still images and photographs – but none of these "stories" reflected a literary version of digital storytelling. This distinction is addressed further in the Limitations and Lessons Learned section, below.

I observed the classroom learning environments for the duration of the three digital storytelling projects – not just the sharing of the finished products, although that aspect was initially my focus. Observing students throughout the whole activity helped to establish context and a sense of how digital storytelling functions in the classroom and school library. At each of the three schools, I collected field notes, administered a

survey of students following their projects, conducted focus groups of students, and interviewed the teachers and librarians. Additional data for the study included classroom handouts, such as logs and self-evaluations, and the digital stories.

Data Analysis

During and following my observation time in the schools, I read and re-read the field notes and survey responses, transcribed and reviewed the student focus group and teacher interview comments, viewed video of the performances, and imported the field notes and video into QSR NVivo qualitative analysis software for coding (Version 9, 2011). The organization and analysis of data were ongoing processes throughout the study, an approach that was supported by the staggered start of the three projects in the schools. Miles and Huberman explain that in qualitative research, "coding drives ongoing data collection." Coding is an iterative process, with repeated reviews of data and both deductive and inductive analysis (Miles & Huberman, 1994, p. 65). Because this study is exploratory in nature, there was not an existing coding scheme to apply to the data. I developed my own coding scheme for data analysis. I reviewed and coded the data in broad, "parent-level" categories first, such as "student watches digital story," then I developed more granular "child-level" codes, such as the following:

- Student(s) view completed stories (parent code)
 - Features of digital stories which draw student attention (first-level child code)
 - Relevant to student(s) (second-level child code)
 - Placeness, realism (second-level child code)
 - Images and special effects (second-level child code)
 - Friends, peers (second-level child code)
 - Boring (second-level child code)

I studied the coded data using several approaches. I marked relationships among the nodes (the NVivo term for a code); for example, engagement (how students attend and to what they attend) is related to actions (how students demonstrate attention) and emotions (what students say they feel when they are attending). In another example, in reviewing the nodes related to the creation of digital stories, I noticed that students called upon familiar or similar experiences and terminology when creating and viewing digital storytelling, such as a student who pretended to be a drive-thru restaurant employee when testing the audio equipment. Therefore, the nodes of student terminology and similar experiences demonstrated a relationship, and this connection is represented in the conceptual model, shown below in Figure 1.

I interrogated the data through repeated reviews and refining of codes (as coding shapes data analysis) and study of the relationship among nodes through code queries, as well as via text queries and word frequency queries, which I studied in several

formats (tag clouds, word trees, tree maps, and cluster analyses) as a way to find relationships and themes in the data.

Findings

In preparing to conduct this study, I anticipated that watching the “performance” part of the digital storytelling process would be the stage at which I could observe the students’ body language as they viewed the stories, where they turned their attention and why, what they were doing as they watched, and what they said during and after the digital stories. However, there were additional dimensions that I had not anticipated with regard to the students’ viewing, particularly in terms of their dual roles as both creators and audience in the digital storytelling process.

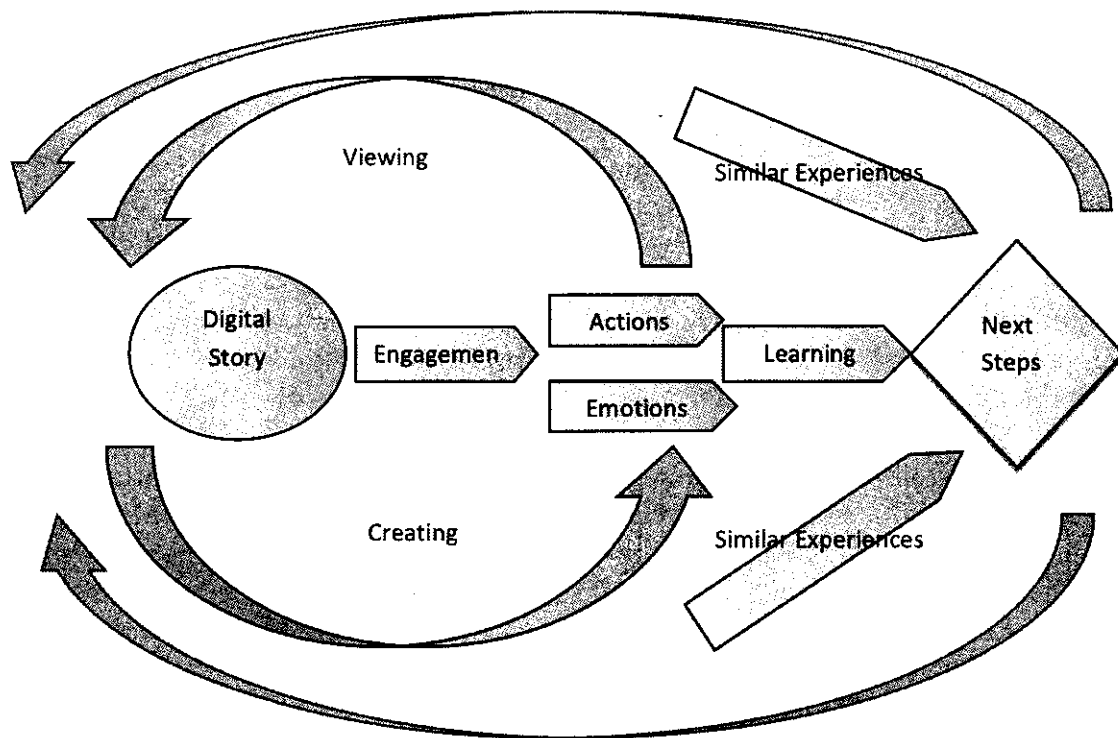
In classroom and library digital storytelling, the most frequent and important “viewer” or audience for digital storytelling seems to be the self, as shown by the students in viewing their works-in-progress and in the editing process. The line between creator and audience of a digital story is difficult to ascertain when considering the self as a viewer, and likewise, the processes of creating a story and viewing a performance of the story are also less defined and less separated than in traditional storytelling. Students viewed their stories and often, their peers’ stories, throughout the development process – not just at the “end.” It may be appropriate to designate two stages of the “performance” of digital storytelling: formative performance, or the work-in-progress viewing, and summative performance, the viewing of the story after the digital file has been converted from a project, or editable file, to a movie file, which can no longer be changed.

Upon review of the coded data, six categories of student responses to digital storytelling emerged, and these are as follows:

- What draws students’ attention
- What students do
- How students feel
- What students learn and get out of digital storytelling
- What experiences students think are similar
- What students want to do next

From these categories, I developed themes and a conceptual model that describes the essence of responses to digital storytelling in the school library and classroom. This conceptual model, presented in Figure 1 below, primarily represents findings about student response and engagement, and will be used to extract new study questions, to apply to practice, and to contribute to research on digital storytelling.

Figure 1. Conceptual model of responses to digital storytelling.



“Digital Story” forms the first piece of the conceptual model. This area of the model represents the story, which the students create and also view. The students’ dual roles of creators and tellers and the fluid nature of this process are represented in the model. “Engagement” captures students’ responses to such story characteristics as personal relevance, entertainment value, story, sound, images, and whether their friends appear in or made the video. Also included in the theme of engagement are those aspects that resulted in decreased engagement, such as featured they disliked and stories they described as boring.

Engagement is demonstrated by “Actions” - the students’ body language, comments, interactions with each other, and other observable ways of engaging in performances of digital storytelling. Actions reveal and represent “Emotions,” the part of the model which encompasses the students’ emotional reactions to viewing and, to some extent, creating digital stories, including pride, shyness, embarrassment, happiness, and social connections with peers. Actions and Emotions are related, and because they happen simultaneously, these two components of the model are presented in parallel positions in the model.

“Learning” represents the content knowledge and technology/information literacy skill development supported by engagement, as well as less tangible learning, such as the opportunity to experience visual and auditory modalities, establishing a sense of belonging, and having skills seen as valuable by peers. (It is important to note that

learning outcomes were not specifically tested or analyzed in the study; this component of the diagram comes from comments shared by students in the focus groups and surveys). Learning and the next stage of the model, "Similar Experiences," are processes which shape and inform one another in a fluid, continual way. Similar Experiences, which can originate within or outside classroom digital storytelling, demonstrate students' evolving process of understanding digital storytelling and how students relate digital storytelling to familiar activities, such as recording voices as part of video games and watching movie trailers, Youtube, and comedy shows, which seemed to inspire such techniques as "outtake" or "blooper" reels in Schools 2 and 3.

"Next steps" represents immediate and longer-term aspirations, such as the students' suggestions of new topics for digital stories, many of which were autobiographical in subject, and their hopes to - in the words of a sixth grader - "make it more advanc[e]" the next time they tried digital storytelling. In the model, Next Steps connects back to Digital Story, Viewing and Creating, and then to Engagement, as Next Steps lead to new digital storytelling experiences.

The most notable characteristics of classroom and school library digital storytelling are that the students assume two roles: author-creators and listener-viewers, and that a significant portion of viewing in this context takes the form of viewing one's own work during the editing and development process. This dual responsibility leads to increased opportunities for feedback, sharing, and learning, as evidenced by works-in-progress storytelling and peer teaching, both spontaneous and suggested by the teachers and librarians. Although the social context of the classroom seemingly creates an audience-at-the-ready for storytelling performances, the classroom and library also harbor a closeness, familiarity, and peer dynamic that can be supportive, scary, or embarrassing for students. The emotions - pride, shyness, and anxiety, for example - and personal relevance that students identify with their work and that of their classmates suggests the need to foster carefully a supportive, positive environment for sharing digital storytelling.

Limitations and Lessons Learned

There were numerous lessons learned regarding methodology and analysis in the course of conducting this study. Two lessons and potential limitations of note are the use of an original coding scheme and the importance of the "self" as a viewer of digital storytelling. Inter-coder reliability, in which "blind review coders . . . apply the definitions to data to check for consistency in meanings and application," could be implemented in future studies to ensure that the codes accurately reflect the events being described, and that consistent coding is being applied (Marshall & Rossman, 2011, p. 225). Additional research and exploration can be pursued to focus upon the specificity and functionality of the codes used to describe classroom and school library digital storytelling.

The importance of the "self" as a viewer of digital storytelling was not anticipated going into this study, and this is both one of the most intriguing findings of the study and a lesson to shape future studies, including the methods employed to study digital storytelling. Future studies may include focus group or survey questions relating to the self as viewer, the development of data codes about the self as viewer for analysis of data, and research methods that include the students in the data analysis.

Other limitations relate to the genre of the digital stories in this study. Because I worked with teachers and librarians who had already selected the digital storytelling activities, as the researcher, I did not serve a role in choosing the software or genre of the digital storytelling activity. In all three settings in this study, the teachers and librarians facilitated digital storytelling as an informational text, and not as a work of fiction, which is perhaps a more typical and familiar traditional storytelling genre. As such, the genre itself may be considered a limitation, in that all three study groups of students and teachers used digital storytelling as a platform for information. The results of the current research will support and reveal focal points for future studies, including potential experimental research designs which may encompass additional genres of digital storytelling.

Conclusions

In developing the background for this study, I found that most storytelling texts contend that a listener is a requisite element of a storytelling experience and that storytelling is a social process. In attempting to compare traditional and digital forms of storytelling, I aligned what I interpreted to be parallel components of watching and listening, without realizing at first that the "performance" in digital storytelling is actually a formative process, with viewing all throughout the story, and not just during a culminating storytelling "event" as is the case with traditional storytelling. Perhaps the dynamic interchange that happens between audience and teller at a live event can be compared to the dynamic process of editing a digital story in development, with a potential for an audience of one (the creator) or an audience of a few (peers and project group-mates). The social processes of digital storytelling can occur during the performance, as in traditional storytelling, but there were social interactions - such as peer teaching and formative viewing - throughout the development of the stories.

The conceptual model presented in this study will help to support further research of digital storytelling in library and classroom settings, including study of the purpose or genre of digital storytelling, and how genre may affect the formative and summative viewing and responses. The idea that the diverse projects I observed and those described in research and practice are all called "digital storytelling" is an area for additional discussion and perhaps research investigations. Having a narrative or story as part of the project is a common element of digital storytelling projects, but none of the digital storytelling projects in this study represented the elements of Haven's definition of story about a character's struggles to reach a goal (Haven, 2007, p. 79).

However, the projects here – the Ancient China Photo Story, the digital book trailers, and middle school team story – do seem to follow Joe Lambert’s belief that even when the objective of a digital story is to convey information, the personal voice of digital storytelling adds meaning, as the creator is describing her “version of events and realizations” (Lambert, 2006, p. 49).

As diverse as the stories and purpose of classroom/library digital storytelling may be, there are ways for teachers and librarians to support students’ listening and viewing processes in digital storytelling, across settings and intended outcomes. First, it is helpful to recognize, as I came to do during the course of this study, that creating and viewing digital storytelling are interactions that occur somewhat continuously and fluidly, and not separately as in traditional, oral storytelling. The following section suggests ways to support listening and viewing in classroom and school library digital storytelling.

Recommendations for Teachers and Librarians

In all three schools in this study, I observed a common model of concluding a class project: a sharing or “reporting out” day, which was likely supported by my research interests in the listener-viewers. There are obvious benefits to this design, from fulfilling lesson objectives to providing practice speaking in front of groups. Yet, there are some drawbacks to employing this approach in digital storytelling, in particular, that there is a lack of opportunity for meaningful feedback between teller and audience. During a performance or showcase, students can share what they liked or suggest ideas for new directions, but at that point in the process, integrating the feedback into the finished story is a challenge. Another aspect of the group performance setting is the students’ natural tendencies to laugh, comment, and react openly to seeing their classmates on video and hearing their voices, which for some students can be an embarrassing experience.

One approach to dealing with these considerations is to balance out the sharing throughout the projects in small, supportive pairs or groups. Librarians and teachers can encourage the viewing of works-in-progress and as appropriate, facilitate students’ responses to peers’ work with thoughtful, constructive feedback, which students could use (or not use) in their project development. Students in all three study settings did this naturally through casual peer sharing, and teachers and librarians can enhance and support this practice. Librarians and teachers can foster and model a safe, supportive space for sharing and responding during the development of the videos, and if it fits the project, during a showcase of finished work, but with appropriate considerations for group size, choice to participate, and format, according to the age and needs of the students.

Student interview and focus group responses indicated that in addition to any content knowledge or story experience that they might enjoy or attend to in a digital story, they

also wanted to know about the process of making the story, which was something not represented in studies of listeners in traditional storytelling. (Unless a listener had an affinity for storytelling technique, it is not likely that an audience member would question a storyteller about the methods after a tale). Yet, for students in this study, they expressed interest during and after the projects for techniques employed by their peers, including adding effects, editing music, and including photos or credits. Seventh graders at School 3 even reported watching Youtube videos of similar student-made productions to compare techniques. Librarians and teachers can take advantage of this curiosity and the power of peers to support skill development in the classroom, perhaps via peer teaching, which seems a rich area for more studies. Students who had knowledge of tools and tricks in iMovie and Garage Band at Schools 2 and 3 were sought after by their classmates for advice and instructions, and these students were also identified by the teachers as go-to people for help and assistance. Peer evaluation or feedback may also bring interesting dimensions into classroom and library digital storytelling, as well as studies of self-assessment.

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Play in the Learning Commons

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What if the door of the learning commons opened onto a playground? In place of bookshelves, there are monkey bars and a swing set. The hard tile floor has been replaced with sand, and the shouts and laughter of children at play fill the space. This is not a vision that many teachers and teacher-librarians are pursuing. Play has been viewed by many as “antithetical to the most stable pillars of learning in the twentieth century” (Thomas & Brown, 2011, p. 96). Criticism includes the observation that play is often frivolous. Without application it can amount to no more than daydreaming (Power, 2011). Students at play can be annoying and disturb others who are trying to be productive. In some situations students have been harmed while playing, which is one reason to shorten recess.

However views on learning are evolving and so are those regarding play. In the past the goal was to learn as much as possible as fast as possible. The learning process itself was not as important as what was taught (Thomas & Brown, 2011). But learning how to learn can be as important as or more important than learning content, because what is deemed important to know is changing so rapidly. Knowledge and the tools of discovery evolve in real time. The only certainty about the future is to expect continual change. Thus if the issue for learning becomes how to best prepare the mind to continue to learn, questions about how we know and how we come to know will be central to the curriculum (Claxton, 2002; Wells & Claxton, 2002).

Another outdated belief from the twentieth century is that intellect is a fixed entity. For decades it was assumed that students inherited a fixed amount of intelligence. Research in the last decade’s shows that intelligence is not fixed, but can be developed through appropriate learning activities (Pink, 2009; Resnick & Helquist, 1999). Research also shows that emotion plays a major role in the development of intelligence. “[W]hen people feel good, their thinking becomes more creative, integrative, flexible, and open to information” (Frederickson as cited in Power, 2011, p. 306). Play is a powerful tool for learning because it feels good. Play is particularly suited to a world in constant flux because it “provides the opportunity to leap, experiment, fail, and continue to play with different outcomes” (Thomas & Brown, 2011, p. 96). It is a way to engage with ideas, collaborate, and interact with others.

By incorporating play, the activities of the learning commons can be directed at increasing the capacity of students to learn, because it is the place in a school where teachers and students come to collaborate, experiment, and demonstrate learning. It is a space that houses the tools needed for knowledge building; including construction materials, information resources, and technology; and where change matches the pace of evolution in the post-industrial society. Learning is not limited to absorbing

information, but becomes a social cultural process for engaging with the changing world (Loertscher, Koechlin, & Zwaan, 2008; Thomas & Brown, 2011). Play is a way for children to make sense of the world they will inherit. When information becomes something to play with, they have a way to cope with the vast amount available. When educators care about experience, play, and questions; not efficiency, outcomes, and answers, the learning commons become a playground for the mind.

The next section presents a brief description of play. It is followed by a presentation of some of the ways play prepares learners for the twenty-first century. The final section looks at how play can be integrated into activities in the learning commons in a way that leverages students' interests and passions.

About Play

Play can expand the ability to think, ask questions, and find answers. It is uplifting, inhabiting a space between fantasy and reality, sense and nonsense (Power, 2011). It is never too easy or too hard. It is always fun and can incorporate cognitive companions like wit, humor, and laughter (Bergen, 2009; Power, 2011). During play, negative consequences are minimal and short lived, and failure is viewed as an ingredient of subsequent successes. Since play is based on autonomy, rewards have an adverse effect on performance by transforming play into work (Pink, 2009). Instead, play is its own reward, because while work tires, play energizes (Anderson as cited in Bergen, 2009).

It is a misconception that creativity is a gift of the few. It is actually widely distributed among students, but it needs to be developed, not squelched (Pink, 2009). Play is a route to developing creativity (Power, 2011). Creativity involves the generation of ideas, problem solving, innovation, and transforming the familiar into the unfamiliar (Bergen, 2009; Power, 2011). Five ways play affects creativity are (Bergen, 2009, p. 418):

1. It [exercises] imagination
2. It increases the capacity to continue to play
3. It enhances problem solving ability
4. It tests rule making and rule breaking
5. It [can bridge] the gap between personal and social imagination

Adults might not think they play, but they do. Like children, they enjoy exploration, which is a form of play. The playful propensity to "defamiliarize the familiar" by switching perspectives is a form of adult exploration that has led to valuable discoveries and solutions (Power, 2011). Adults are capable of more mental flexibility than children. They "play with the boundaries of their own thoughts and perceptions and with those of others" (Power, 2011, p. 298). Adults play when they use "creative techniques, accomplish risky or unusual feats, employ models to exemplify their mental worlds, and allow themselves to be truly comfortable and creative in their environment" (Bergen, 2009, p. 420). Professionals, particular those involved in the arts, math, and science rely on skills and habits of mind developed through play. "Certain kinds of complex predicaments are best tackled through a rhythmic combination of articulate,

purposeful 'hard' thinking, and relaxed playful reverie – learning through intuition” (Claxton, 2002, p. 30).

There are many kinds of play, but forms of play such as festivals, gambling, and sports, are not within the scope of this paper. Instead the focus here is on two types of play that have the best potential to enhance a learning commons. One involves organized, structured, rule-bound play, such as video games. The other is free play, which includes everything from playfulness and daydreaming to comedic turns. Both well-designed rule-bound games and free play provide the right amount of intellectual, continuous challenge to be suitable for the learning commons. Both offer “a tension between the rules of the game and the freedom to act within those rules” (Thomas & Brown, 2011, p. 18). They both also require cognitive stretching that is engaging and pleasurable (Pink, 2009; Prensky, 2006).

Rule-bound Games

Rule-bound games of the past were limited to board games and sports, but much changed in the computer age. The defining traits of a game have stayed the same. In a rule-bound game participation is voluntary and there are one or more goals, rules, a feedback system (McGonigal, 2011). However, developments in technology have transformed rule-bound game playing into a 54 billion dollar industry (Stude, 2008; Takahashi, 2009). Today's rule-bound games feature high quality sound and graphics that delight the player, adaptive challenges to keep players engaged, opportunities to practice skills, and adventures that engage imagination. These games appeal particularly to teenagers, 97% of teens played video games either on a computer, a console, a phone, a handheld player, or on the Web (PEW, 2008); but many adults over 30 are active game players too (Thomas & Brown, 2011, McGonigal, 2011).

Massive multiplayer online games (MMOGs) are the largest segment of the rule-bound game industry. MMOGs incorporate strategies and spaces for imagination and interaction between players who are located throughout the physical world. “Gamers learn through experimentation.” They play with the tools they have in the virtual world they inhabit, repeatedly making minor adjustments and recording the results” (Thomas & Brown, 2011, p. 86). To be successful, players must multi-task well and learn on the fly, and they must be comfortable dealing with the complexity of the game. Also they learn to appreciate the value of data collection.

Play in a MMOG involves understanding the thoughts of others and the player's own thoughts (Bergen, 2009). It requires cooperation and engages players' socio-emotional skills while it develops teamwork and builds loyalties (Power, 2011; Prensky, 2006). In addition, the rules of some MMOGs are adaptable. These games produce both intellectual and socio-moral development. Players who adapt game rules do so based on the strategy of the game and on their ability to negotiate changes with other game players. The latter provides an opportunity to listen and to learn how others think.

Often this results in new rules that are an amalgam of diverse ideas from many sources (Bergen, 2009).

The fun part of playing MMOGs is in overcoming the obstacles within the games boundaries. The games often involve a quest where players interpret and follow clues in the environment in order to find treasure of one form or another. *World of Warcraft*, the most popular MMOG today, involves storylines based on medieval life. Players form guilds and go on quests to destroy monsters and win battles. It is the anticipation of success that drives the game forward. The treasures are those that add stature to the player's reputation, help vanquish a foe, or help others in a dilemma.

Free Play

Free play relies extensively on improvisation. This might include reorienting familiar objects in the environment. For example a cardboard box becomes a train or a house. Free play can build on the imagination of others as expressed in video games, books, movies, websites, or other media. It has rules, but rather than binding the play, they are part of the imaginary domain under the control of the player and subject to continual adaptation.

Free play always involves the emotional state of playfulness, which has been linked to a number of cognitive benefits. Playfulness "is dynamic, interactive, enigmatic, lighthearted, humorous, imaginative, open-minded, and transformative" (Power, 2011, p. 298). Playfulness has had a major role in human evolution. Humans remain playful after reaching adulthood, which partially explains human adaptability, as playfulness is linked to flexible responses to situations, the capacity to deal with the unknown and to react constructively to novel solutions (Bergen, 2009). Children are socialized into their families and communities through play based on adult models of language and practice. It is through free play that children acquire the power and courage to explore their worlds.

Research has found that playfulness has cognitive qualities like the spontaneity and ingenuity required for humorous exchanges and the deep concentration found in games of fantasy. It can produce ideation, the ability to generate ideas that are novel and that pull together new connections (Power, 2011). Ideation comes from the free association, comfort with chaos and complexity, fluid thinking, and spontaneity. Ideation is essential to the creative process (Power, 2011). Playfulness also develops intuition, a form of ideation that combines spontaneity, information processing, and the ability to make connections. Moreover, playfulness is contagious (Power, 2011). "[T]he capacity for play has led to ideas, products, and behaviors that have served both as change adapters and as change agents" (Bergen, 2009, p. 414).

Characteristics of Play that Relate to Learning

In schools the boundary between work and play is artificial and is the result of entrenched educational practice. When this is recognized, it is possible to “take matters in hand and begin the difficult task of making life more livable” (Pink, 2009, p. 129-130). “[W]hen play happens within a medium of learning – much like a culture in a petri dish – it creates a context for which information, ideas, and passions grow” (Thomas & Brown, 2011, p. 18). It is a channel for communication and a scaffold for learners as they create ideas and meet goals they might not be considered ready for developmentally. This is because through play they can take risks without consequences. Playing, students learn as much from failure as success, as the negative outcomes are minimal and imagination is free and scalable.

Play can involve the use of materials, which lets students explore environments. Materials can be as simple as wood and clay or as complicated as computer programming tools. Using materials calls for high level thinking as players construct objects by repurposing resources at hand (Bergen, 2009). Play does not rely on the use of materials though. Players can use language to simulate social life, environments, and events. This provides an opportunity to practice using the adult language they have heard in their schools and communities (Mercer, 2002). The learning benefits of this are boosted when play is guided by adults who intentionally introduce and model patterns of the kind of language used for productive activity. For example, in play, students can be taught the ground rules for sharing knowledge, evaluating evidence, and considering options. They can be guided in consolidating their thinking and creating connections that can be transferred to other situations. When guidance in the use of language has been internalized, students are able to apply it internally (Mercer, 2002).

Play is motivating because it engages learners’ passions. This explains why they willingly exert themselves during play. Dweck suggests that it is effort that gives meaning to life (as cited in Pink, 2009). By exerting themselves in play, learners discover that deep learning is fun (Prensky, 2006). Play also opens pathways to tacit knowledge and exercises cognitive agility and flexibility, developing habits of mind that are valued in the learning commons (Bergen, 2009; Power, 2011).

Motivation

Self-determination theory (SDT) is an approach to understanding motivation that explores the design of environments that “optimize people’s development, performance, and well-being” (Ryan & Deci, 2000, p.68). SDT identifies three factors that combine to produce the persistent, proactive, and positive features that lead to motivation: competence, control, and connectedness. Competence refers to self-efficacy. Control refers to autonomy, which does not mean being independent, but having the ability to choose. Connectedness adds a social dimension, encompassing approbation and

belonging. Self-determination theory offers an explanation for why play is inherently motivating.

First, play is something at which students are particularly competent. Play generates a state of flow where time passes without awareness and consciousness dissolves (Csikszentmihalyi, 1997; Pink, 2009). This is because both free play and rule-bound games adapt continually to a player's level of skill, creativity, and imagination (McGonigal, 2011; Prensky, 2006; Willis, 2011). Because players are competent in rule-bound and free play games, they rely on their own judgment to assess their progress and outcomes. This self-assessment has lifelong usefulness and is the opposite of the learned helplessness that accompanies learning that is directed at achieving incremental goals set by others and designed to match the abilities of all learners indiscriminately (Pink, 2009).

Second, play is autonomous, which leads to engagement. Play extends the dimensions of choice as to what, when, and where to apply rules and boundaries. None of the boundaries in play are necessary (McGonigal, 2011). Play requires "internal control, internal motivation, and internal reality" (Bergen, 2009, p. 414). Students choose the activity, engage in it, and shape it. These three elements of autonomy are essential ingredients of play (Bergen, 2009).

Third, where play is a participatory activity, it is a way to build relationships with others. Play creates opportunities for "joyful social exchange" (Sutton-Smith as cited in Power, 2011, p. 302). In addition to connecting people during play, some games bring communities together to exchange knowledge outside of the game. Players in MMOGs, for example, share specifics about concepts, tools, and strategies for winning a game.

"All learning requires effort, and, like crime, people rarely do it without a motive" (Prensky, 2006, 84). Self-determination theory explains much of play's motivational appeal to learners. As players master and apply new skills, they inquire, learn, and extend themselves. A desired and expected outcome of learning through play is that, because they are highly motivated, learners' production goes beyond the demands of the curriculum.

Another motivating aspect of play is that it gives pleasure and is refreshing. It revives the sense that life is worth living. Playfulness transforms other emotions, fear can become exhilaration, sadness can become humor, and tension can dissolve into antics leading to an enhanced sense of well being (Power, 2011). Whenever humor is found in an otherwise serious situation, playfulness overrides other emotions (Bergen, 2009; Panksepp as cited in Power, 2011).

Tapping Tacit Knowledge

Humans know more than they can say. Since birth they absorb and accumulate knowledge, not only verbally, but through their eyes, ears, nose, mouth, and sense of touch. Every student has a vast amount of tacit knowledge, and play is an ideal means for accumulating it (Costa & Kollick as cited in Loertscher, Koechlin, & Zwaan, 2008; Thomas & Brown, 2011). Play takes the experiences and information absorbed and produces spirals of knowing that build on past experience, tacit understanding, ideas, hunches, and possibilities. The new information increases understanding, and through the process, meaning is transferred back into the tacit, and the spiral begins again (Wells, 2002).

The problem with tacit knowledge is that since it was not learned through language, it cannot be communicated easily. For example, if a student is asked what he or she did in school on a given day, the answer might be "Nothing." But if pressed to construct a detailed answer, a significant amount of high-level thinking is required. This is because encapsulating all that was perceived in the day entails an analysis of events, evaluation of the detail about what is useful and appropriate to share, and a synthesis that considers the interests of the listener. This is further complicated because tacit knowledge is private and lacks a means of expression. This is one reason why conducting a library reference interview can be challenging. The librarian draws out a searcher's information need by asking questions (Dervin & Nilan, 1986). Asking questions is a means for bringing tacit knowledge to the surface. However making private knowledge public is often a cause for embarrassment, because the searcher generally does not understand why so much effort is required.

Tacit knowledge is highly personal; each learner creates unique associations from new stimuli. For this reason, presented with the same content the same way, students learn, to a varying degree, different things. Traditional schooling has little tolerance for these differences. Also tacit knowledge is the ground on which imagination operates, and imagination can be viewed as problematic in a traditional classroom (Thomas & Brown, 2011). Furthermore every assessment technique used in school evaluates knowledge that has been made explicit. There are no means to measure tacit knowledge. For these reasons, in the tradition school environment, tacit knowledge has not been valued.

Yet tacit knowledge is the source from which inquiry arises. "Inquiry is an extremely powerful technique for learning because it produces stockpiles of experiences. Things that result in dead ends for one particular question may wind up being unexpectedly useful later on - even, perhaps, for completely different questions" (Thomas & Brown, 2011, p. 83). Play opens pathways to tacit knowledge through the use of imagination, ideation, and innovation. Play allows an opportunity to unpack the knowledge gained from experience and transform it, making and remaking it to fit new contexts. From this type of activity, students discover new possibilities and extend their view of what

they can accomplish. Best of all, they enjoy themselves in the process (Thomas & Brown, 2011).

Habits of Mind

Cultures transmit knowledge in both explicit and tacit means. As people work together, they pick up the habits, attitudes, and language that are useful for production from 'elders' in the community who have more experience. Productive habits of mind are not learned through explicit instructions, but are acquired from people who exhibit them. They are reinforced when there are supported and appreciated (Claxton, 2002). Habits of mind developed through play are: imagining, persisting, creating, innovating, thinking flexibly, responding with wonderment and awe, finding humor, questioning, thinking independently, applying past knowledge to new situations, and remaining open to continuous learning (Costa & Kollick as cited in Loertscher, Koechlin, & Zwaan, 2008; Pink, 2009; Power, 2011; Thomas & Brown, 2011).

With today's abundant resources and the motivation, it is not surprising that students persist in play, using their imagination to create and recreate the space around them (Thomas & Brown, 2011). Play develops imagination, which builds skills in inquiry planning, hypothesizing, and strategizing (Power, 2011). Imagination is a way to create a vision of what could be, and thus develops skills of prediction (Power, 2011). Through imagination students can transform their roles, the objects in their environment, and the themes with which they are familiar (Bergen, 2009). These transformations all involve creativity, because play builds mental fluency, enhancing the ability to see new possibilities and to make eclectic connections. Mental fluency and imagination lead to innovation.

When imagination leads to inquiry students can discover their own objectives and passions. When students feel passionate about their activities, they work hard and seek challenges. In play, questions tend to be intense, autonomous, and interest driven. What distinguishes this inquiry as play rather than work is its purpose. If asking is driven by curiosity, it is play. When it is driven by the need to find an answer, it is work. At play, inquiry leads to inquiry. The purpose of asking questions is not to find answers, but to find new questions (Thomas & Brown, 2011).

Inquiry can be part of a collaborative process where others can provide both feedback and challenges that further enhance understanding, expanding the inquiry spiral. It might appear, when students in the learning commons create products like videos, blogs, or game profiles, that their activity is highly personal. However, as their creations are examined, appreciated, adopted, and adapted (molded) by others, meaning and passions are shared. Through this collaborative inquiry process, students come to see themselves as legitimate members of the learning community; and they learn more about being with others in a world (Thomas & Brown, 2011).

Through playful inquiry inner resources are revealed. "With just a small shift, from answering questions to asking them, inquiry emerges as a tool for harnessing not only the passion of students, but also the stockpile of tacit knowledge that comes from a lifetime of experience doing the things that become second nature to them" (Thomas & Brown, 2011, p. 85). Playful inquiry is an adaptive process that freely and happily responds to changes in the environment and situation. Questions change and evolve in response to information encountered. The more questions asked, the more tacit knowledge is accessed and explored. Another reason playful inquiry is productive for revealing inner resources is because questions arise from imagination; and the more questions students ask, the better they become at delving into the imagination (Thomas & Brown, 2011).

Playing in the Learning Commons

Unlimited resources in a bounded environment create a space that requires imagination, and imagination is unleashed through play (Thomas & Brown, 2011). Play thrives in an environment where there is lack of threat and a tolerance of mistakes (Power, 2011). The learning commons can be that place because it focuses on questions not answers, and the act of seeking is recognized as a source of satisfaction and pleasure. In this space students determine what they want to learn, take the time they need to achieve mastery, and make connections to others who share their interests.

The learning commons has the potential to support expansive learning. Expansive learners "are involved in creating and implementing a radically new, wider, and more complex ... activity" within a school (Engeström & Sannino, 2010, p. 2). They are entering into unknown territory, which requires an act of collaborative imagination. Students learn expansively through play, using questions, models, and experimentation. As the school's information center, the learning commons' resources and inhabitants can be harnessed for this (Thomas & Brown, 2011). Then students acquire more than knowledge, they create new ways to learn and new tools to learn with (Claxton, 2002; Engeström, Engeström, & Suntuo, 2002). Expansive learning is possible because something bigger than the curriculum can be "addressed, built, created, and cultivated" in the learning commons (Thomas & Brown, 2011, p. 31). When students have control to playfully repurpose the learning commons in unexpected, unplanned, or innovated ways, expansive learning is possible.

The learning commons supports play because, while it is an environment where change is constant, it consistently provides structure through the resources, tools, and expertise available. It is a place where students scale up knowledge, participate with others, and evaluate their own performance. For example, students cannot expect another person to teach them to use the myriad of new tools available. Instead they need a sense of competence that encourages them to learn by playing with the technology and determining success or failure for themselves. Since many students do not have access to new technology at home, the learning commons is a space where new tools can be

made, found, and “messed around” with, and there are others with similar interests (Claxton, 2002; Thomas & Brown, 2011).

Teachers and teacher-librarians, the elders in the community, work together in the learning commons to organize activities that develop student intellects. Incorporating aspects of games into learning develops complex forms of learning and thinking, like strategizing, goal setting, and problem solving. During play, the elders suggest strategies that might prove effective; and provide recognition for contributions students make (Wells, 2002). Elders model playfulness with role-play fantasies and discussions of “what if” scenarios. They model the use of humor in social situations, particularly in diffusing tensions when conflict arises. When learners see the elders take risks and act silly, it helps them to worry less about their own prestige.

During play students, teachers, and the teacher-librarian are on equal ground, and learning becomes peer-to-peer. Roles are shared between mentor and mentee, elder and novice. The participants of this learning community listen to each other and behave as peer amplifiers. From others, learners discover there is strength in diversity. Play cultivates citizenship in the learning commons because everyone in the community learns how to learn from others and to see others as knowledge resources (Thomas & Brown, 2011).

Traditionally knowledge is told publicly by the teacher and received privately by the learner (Thomas & Brown, 2011). Now technology provides the means for everyone to tell publicly and, because time can be shifted in the medium, everyone can be heard. The learning commons facilitates the process, teaches about the process, and promotes the process. It offers both physical and virtual environments for sharing knowledge, and the act of sharing itself creates connections between players involved in similar tasks or with similar interests, whether they are elders or learners. Through this participation, a sense of belonging is created which forms an identity as members of the learning commons.

Because each member of the learning commons has different expertise, each contributes differently. This provides an opportunity for participants to collectively make meaning, then judge and evaluate it. The process draws attention to the positive and negative ways that information is shaped (Thomas & Brown, 2011). Also when players find the values and dispositions exhibited by others to be effective, they appropriate them (Wells & Claxton, 2002). Also during play, knowledge that is distributed throughout the group can be drawn together to tip the balance in a synergistic way that leads to the creation of new knowledge, new solutions, new processes, and new tools. Both the information environment and the social environment are enriched through this peer interaction, feedback, and knowledge making. In this way play makes it possible for imagination to be released and networked in the learning commons.

Because students have both support and opportunity in the learning commons, they are empowered to build on tacit and explicit knowledge, skills and abilities, and interests and passions (Loertscher, Koechlin, & Zwaan, 2008). A first person tour of the learning commons presented in this paper's opening vignette can be used to illustrate the central role of learning through play in a K-8 school. This fictional learning commons provides a scenario of types of learning that involve play. Many of the activities are familiar, but there are changes in the behavior of the teachers and teacher librarians. The students are doing what they do best, enjoying themselves.

The Scenario

Walking through the doors of the learning commons, I look over to the left where the shouting and laughing is loudest. The teacher-librarian is apparently the cause of it all. In front of her are 6th grade students sitting computer terminals, and she is rapping about how to use the *Student Research Center*, an EBSCOhost database. It was when she started dancing along with her rap that the laughter and shouting erupted. The students have quickly gotten into the rhythm and are now rapping the lyrics along with her.

I wonder how anyone can study in this environment, so I scan the room and see an area at the back of the library that is under a canopy. The canopy seems to be made from something that looks like a white parachute. It is raised about six feet off the ground and covers a circle around fifteen feet in diameter. Under the canopy there is a carpeted floor, upholstered chairs, and coffee tables with reading lamps. A girl who looks to be around 10 years old is draped over a chair. The table next to her overflows with books. I walk over to the area and see that the girl is intently reading fairy tales. She doesn't seem to notice me and is undisturbed by the sound.

As I turn around and walk back toward the entrance, two older girls walk in front of me. They pause and bend down over a table. I see one of them has an iPod Touch and is taking a picture of a Quick Response [QR] Code taped to the table leg. When I ask what they are doing, the girls explain they are on a scavenger hunt in the library and are using the QR codes to find clues. They show me how they keep track of their progress with an app on the iPod. They are working on creating a display of 20th Century French painting, and have to retrieve representations of several aspects of life. So far, using the clues in the QR Codes and library resources, they have found paintings of people at the beach, people using transportation, and dining at home. The next thing on the list is to find a painting of people dining out. The girls explain that they are working on becoming curators for the learning commons' Art and History Virtual Museum.

As the girls walk away, I recall that this area of the learning commons had sand on the floor when I walked in and there is no sand now. Standing in front of a tall cupboard against the wall on my left, there are four younger students. A boy has a broom and is sweeping up the last remnants of the sand while a girl pours it into a jar. A second girl

is stacking blue plastic measuring containers of various sizes on a set of shelves on the wall. Another boy stands nearby with a cardboard folder in his hand and a pencil. Seeing me, he comes over and asks me to check the figures he wrote down. The group wants to be the first to solve the problem of how much sand it would take to cover the Principal's desk. I ask them if it wouldn't be cheating if I helped. The boy said they can use any and all of the resources in the learning commons, and that other people can be resources too. So I took a minute to check their findings. They might just win.

I hear arguing over on my right and turn to watch a group of older students looking at a chart displayed on a smart board. They are all standing and moving continually, occasionally pointing to the chart and occasionally to what appears to be chess pieces on the table in their midst. One boy is standing to the side at the tall laptop table that controls the display. I hear him say, "But that doesn't fit in any of the categories. We need another row if we want that information." Several murmur disagreement, but another student takes up the argument and mentions a character from a television series, and everyone laughs. Then the discussion turns to whether the chart will work to gather the information they need, and different statistics are mentioned. It sounds a bit like they are discussing fantasy football, but they seem to be using criteria related to companies on the stock market. I don't know what the chess pieces are for. The discussion is over my head.

That's when I notice a flash of light to my immediate right where the circulation desk is. On the desk is a computer monitor and on the display are two cartoon creatures taking shelter from a storm. Creatures_{sm} are artificial life forms that live in a computer. These creatures are up to whatever it is that creatures do when no one is training or interacting with them. They make an ideal pet for the learning commons - no fuss and no mess.

I wonder if there is a teacher accompanying the students at the smart board and look around the room for an unaccompanied adult. I see a group of younger students sitting at tables about midway down on the right. They all have laptops, and there are two teachers standing nearby. So I wander down to see what they are doing. It turns out that each student is working on a different, curriculum related game. One student is playing Immune Receptors from the Nobel Prize website. Another is working through a game about the Revolutionary War. A third is working on a multiplication game with rockets and asteroids. The teachers are standing nearby at another one of the high laptop tables. I overhear one teacher explain to the other, "It is easy to find curriculum related games. All I do is type in my lesson topic and the word 'game' in the search bar. There are games on just about every topic. They come from all over the world. Fortunately most of them are in English. It is amazing that there are so many games available. I particularly like the ones from Australia."

I look around for more of the high tables and see one with a single student standing in front of it. I walk over to her to ask what she is doing. She explains that she is entering

a book review on the learning commons virtual site. She explains that she uses a website like Amazon to find a description of the book. She pastes that in first. She might have to shorten it though, because she can only enter 75 words. Then she writes a sentence or two on what she thinks of the book personally, what she likes about it, and what other books are similar. She shows me the site and I see there are entries for books, games, movies, comics, music, and even magazine articles. Some of the reviews have comments. All have the option to rate whether or not the review was useful. Most of the reviews are about entertainment products and fiction books, but I spot a review of the game SuperStuck, created by the Institute for the Future. The game is about the extinction of humans and calls on game players to solve global problems.

Hearing voices behind me, I turn around. In the center of the room three students are working on at a large table spread with paper. To the side are the racks I mistook for monkey bars. Now, hanging from the rungs, are paintings that are drying. The students are working on a collage that is mural size. I approach one of the boys and ask what the topic of the collage is. He tells me that it is a mural of the Civil War. I see he is painting a train, so I ask him what that has to do with the Civil War. He said he could work on anything as long as he could explain how it was related to the Civil War.

"I was looking at pictures from back then and I noticed they did not have cars, so I wondered how they traveled around. I looked that up and saw that people traveled a lot by train. The trains back then ran on steam, so this train I made has a steam engine. Steam engines are cool. I asked if I could make one in science class, but the teacher said we couldn't afford the safety gauges we'd need. I asked him if I could make a gauge and he said I could try. He said that could be my science project this year." That's inquiry set free.

In the back corner I see two teachers and two students sitting on chairs with green and grey-checkered upholstery. They've drawn the chairs close together. One of the students has a smart phone in his hand and he is showing the other students and the teachers something on the phone. As I walk closer, I can see it is an app of some kind with the picture of a planet displayed. They all move their heads still closer together to see the small screen. I walk over and stand behind them, craning my neck too. I see the app is displaying molecules, not planets. One of the teachers gets out his phone and the student takes it and fiddles with it. The teacher nods, and takes his phone back. The second student takes out a different phone and they continue their downloading.

Returning back to the front of the room, I listen in on the teacher-librarian who is still standing before the students at the computer terminals. She explains she will 'think aloud' while she navigates through her search results. She explains that finding a search term is often the easy part because the computer did most of the work, but that it might bring back lots of results. That is where the real fun begins. No one but the searcher can decide if a resource is right or not. She explained that she sometimes felt like a navigator on an ocean, sailing on the currents that she believes best fit her need.

Some results are selected, many are rejected, and the judge of this is the searcher and no one else. Thinking out loud she describes how she selects one because she remembers the author. She selects another because it has several words in the description that fit with what she has been thinking about the topic. She rejects a lot of the articles, because they are on a related topic, but not one she was interested in. Sometimes she enters a new term she finds that she thinks will help the computer bring back better results. She explained that she was skimming the results, not reading them and that she can make the decisions really fast. When this happens, she feels more like the pilot of plane than a navigator, zooming through the results to arrive safe and sound at the information destination.

As I leave the room, I realize this learning commons is much more than a place where resources are found. It is where teachers, teacher-librarians, and students are supported in a way that empowers them and builds on their knowledge, abilities, and passions; and where, through play they build and share their tacit and explicit knowledge. Technology lends itself to this creativity, but technology is not enough. The learning commons stimulates playfulness through the way its members interact. The decor and displays help because they are enticing and efficient spaces to work or lounge. They have abundant physical materials for construction like paper, paint, glue, markers, and scissors; and there are lots of books and magazines to spark ideas and imagination in addition to the vast treasury of digital resources at hand.

Conclusion

Creating an educational system that takes advantage of an abundance of information and tools calls for a novel approach. Reaching into the roots of human evolution, the historic medium of learning, play, emerges as a good fit in a world in constant flux. It is a way that humans come to terms with complexity, work over their heads, and embrace the process because of the pleasure it provides. Play allows complete autonomy, has few negative consequences, and is opens a path to tacit knowledge.

The learning commons is well suited for play. It is a bounded environment with vast resources. It has materials that stimulate imagination and adults who guide and empower learners. Incorporating aspects of play into activities in the learning commons helps students develop complex forms of learning and thinking, like strategizing, goal setting, and problem solving. Familiar activities are transformed through play. For example, when an adult playfully raps instructions, students' fears are relieved. Because play involves minimal risks, students can be left to solve problems own. But when they play together, ideation is amplified and synergies are created. Because play is interest driven, intense, and autonomous, asking questions becomes a playful activity and inquiry is adaptable and evolving. In these ways and more the learning commons is a playground for the mind where students discover their passions and are empowered to embrace change and the resources that drive it.

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The Work of the Learning Commons: An Ecosystem of Gifts

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The Learning Commons needs a new paradigm

What does it mean to work as a school librarian in a Learning Commons? Jenkins, Clinton, Purushotma, Robison and Weigel (2006) describe a “participatory culture” “with relatively low barriers to artistic expression and civic engagement, strong support for creating and sharing one’s creations, and some type of informal mentorship whereby what is known by the most experienced is passed along to novices” (p.3). They note that the new literacies required by this culture are almost all social involving collaboration and networking (p. 4). Clearly a participatory culture could define a Learning Commons and the focus on collaboration and networking speak to the work of school librarians. While this Learning Commons is an attractive paradigm, it would seem to be an uneasy match with our current climate of high-stakes testing and accountability where individual teacher bonuses are tied to student scores on standardized tests. The current testing paradigm aligns with a more market-driven model of education. One in which as Lave and Wenger (1991) warn “Test taking then becomes a new parasitic practice, the goal of which is to increase the exchange value of learning independently of its use value” (p.112).

Hyde (1979) suggests that a market economy does not provide equal access to wealth but that markets instead restrain movement rather than enabling sharing. Johnson (2010) defines a “fourth quadrant” that is non-market and networked as fertile ground for innovation. He suggests this fourth quadrant is best defined by the metaphor of an ecosystem. “The commons metaphor doesn’t suggest the pattern of recycling and exaptation and recombination that define so many innovation spaces” (Johnson, 2010, p. 244). In his book, *The Gift*, Hyde provides a framework for an alternative paradigm that captures many of the qualities of Johnson’s fourth quadrant based on an economy of gift exchange.

In this paper I will elaborate on Hyde’s gift economy as it relates to school librarianship. I begin below by lifting out a story from a year-long study that examined collaboration between a school librarian and a team of three second-grade teachers (Kimmel 2010; Kimmel 2011). The study employed a discourse analysis for a very fine-grained examination of the talk of collaboration and the roles of the school librarian in monthly planning meetings that was situated within an ethnographic perspective that looked for

patterns across a school year. Within this school year, it was also possible to find smaller storylines. The story told here occurred in a very particular historical time period beginning shortly before the presidential election and carrying through to the inauguration of our nation's first African American president. Given that the setting of this research and this story was an urban elementary school in a predominately African American community impacted by poverty, this was an exciting time of hope and promise for the students and the staff in the school. In the passages below, "Sue" refers to the author of the study; I was the school librarian at the time and I was the principal researcher engaged in the study for my dissertation. Teachers have been given pseudonyms and the reader will understand why Obama Elementary School was chosen as a pseudonym for the school.

A story from a year of research

Sue: And I thought of other books we have like Dr. Seuss, *If I Ran the Circus* and *If I Ran the Zoo*. Well your kids could write about, if I ran the city ((laugh)). I'm trying to think what other books I found. They're behind you.

Areyanna: See, I told you, you would come up with something.

Sue: And then, you know, those list books: *Twenty-One Uses for a Mother*, *Thirty Uses for a Dad*. We could do the same for Sixteen Uses for a Mayor. Every kid in your classroom do one of them. Put that together in a book. (October 28, 2008).

It was barely a week before the presidential election and the second grade team was in the midst of their government unit. Areyanna's comment referenced an earlier conversation we had had in preparation for this planning meeting. I had stopped by her classroom to ask what they would be planning so that I could pull some materials ahead of time. We talked about the social studies goal for elections and government and then I asked her what they were doing with writing hoping to find a meaningful library connection. Areyanna had told me they were using the work of authors as the models for their own writing and that pointed me to look for books that could be used both for the writing and social studies. In the planning session, about fifteen minutes pass while the teachers and I look through some of these materials and talk about the social studies curriculum before we returned to the discussion about which lesson we would like to do in the library.

Sue: Do you want to do like sixteen uses for a mayor? Use that model? Do it in here? Every kid does a page and I'll put it in a book?

Dianna: Um hmm.

Sue: Or seventeen or however many kids you have... Uses for a mayor. Or what else did you hear me say that sounded interesting? That you don't want to do. You want me to do.

Areyanna: The one about - the one you said about the dinosaurs.

Sue: Oh yeah, I think that would be kind of funny.

Areyanna: How do dinosaurs vote?

The comment "That you don't want to do" suggests that somehow I suspected that they wanted to use the list book idea in their classrooms and would like for me to present another model to their students. We decided to use Jane Yolen's dinosaur series (2000) as a model for *How Do Dinosaurs Vote* and scheduled that lesson for the library. We moved on to plan a library unit where their students would learn to use the library catalog to locate books by African-American authors and illustrators.

The next week Obama was elected president and bulletin boards popped up around the school with his picture. The mood felt full of hope and promise. One day I was walking down the hall and encountered a display of student work from Dianna's students: *Fourteen Uses for a President*. Each child had done a picture of Barack Obama as a reader, a father, a husband, a leader, and other roles. The work took my breath away as I saw our students viewing the new president as similar to them and to their families. I found out that the other two teachers had made class books with the work of their students. In December I found myself planning the annual school-wide program for the Martin Luther King Jr. holiday. This year's theme was obvious: the inauguration of the first African American president.

As second grade sat down to plan in December, they were planning what they would be doing the weeks after we returned from the winter holidays. The conversation turned to the Martin Luther King Jr. birthday.

Sue: We're going to have a program sometime that week. I'm still trying to schedule it for his birthday. And I have an idea for second grade.

Areyanna: What?

Sue: You know...

Areyanna: I saw that look. Go ahead.

Sue: You know you guys did that cool um *Fourteen Uses for a President*.

Areyanna: Um hmmm.

Sue: It would be cute to do that up stage. If the kids had a hat or a prop for each of the - however many we want to do - let's say we did twelve.

A discussion followed about how to do the skit and then we moved on to plan their sound unit for science. In January, the teachers prepared their students for the assembly that occurred the Friday before the inauguration. A reporter from the local newspaper attended the program and was especially struck by the work of the second graders taking numerous photographs and interviewing the teachers and their students. He recorded two students reading their class book: *Fourteen Uses for a President*. The school had plans to watch the televised inauguration school-wide on Tuesday but an ice storm canceled school that day. At home it felt like a holiday that allowed us to stay home and watch the televised inaugural events. As I opened the morning paper, I was

absolutely stunned to see the story about our school on the front page. An Internet link was also provided so readers could view the class book and listen to the students read the pages about the new president.

The next day when I returned to school I wondered how many of our students had the chance to see the newspaper. Many of the students I talked to were unaware of the story; a few told stories about a family member or neighbor going out to buy a copy in the bad weather. Teachers posted the article outside their classroom doors and other copies floated around the office. I posted to the district's school library listserv to ask if others would send spare copies of the paper to our school. With one of those fortunate coincidences, Tuesday was a day when many schools received class sets of the newspaper as part of a newspapers in education program. Since school was cancelled, the papers were unwrapped and unread. In the next few days our school was flooded with hundreds of copies of the paper. Every child received a copy, a stack of papers were available in the office, and another stack became part of the library's collection for future projects.

Gift Exchange in the Learning Commons

In many aspects this story was one of a Learning Commons or a Learning Ecology. A culture of participation and sharing developed as each student contributed a "page" that showed their own relationship and understanding of the work done by a president. They saw him as a leader and peace-keeper but also as a father, husband, dancer and follower. The vision of each individual student contributed to a holistic and broader understanding for all. Student work was shared either through a class book or a hallway display that caught the attention of the entire school community. The performance in front of the entire school and invited guests allowed students to further embody their understandings and to share that on stage. The newspaper feature catapulted their work to a wide audience both through the distribution of the newspaper and the Internet. Because the learning was based on current events it struck a chord of interest and meaning throughout the Learning Commons and beyond. I understood my work as the school librarian in the story above and in the Learning Commons as a small catalyst engaged in an exchange of gifts, and I find several aspects of a gift economy present including the small beginning, the way the gift traveled, the increase of the gift, the gift as establishing bonds of community and the role that new technologies played in the distribution of the gift.

The Beginning

In one sense, *Fourteen Uses for a President* began with a small gift: a book on the table during planning. Bourdieu theorized the value of these small gifts to create binding relationships, that "must be of modest value and hence easy to give and easy to match; but they must be frequent, and in a sense continuous" (Bourdieu, 1977, p. 7). But school librarians will recognize that as with other gifts, a bit of reconnaissance ahead of time

allowed for forethought and selection of the materials that would actually be at the table as well as ideas for their application to the curricular goals. "A gift should consider the recipient's personal needs and feelings" (Balkin and Richebe, 2007, p. 57). An important aspect of the gift as described by Hyde is that it must remain in motion; gifts may not be hoarded. In many small but everyday ways, a librarian keeps a collection in motion by providing access and in particular bringing materials to the attention of users. In this case, the books *31 Uses for a Mom* (Ziefert, 2003) and *33 Uses for a Dad* (Ziefert, 2004) along with an idea for their use with the curriculum were offered to teachers who left that month's planning session with these books in their hands. As with a gift, the relationship was a voluntary one; the teachers were free to take the books and do what they wanted with them.

Around the Corner

Another intriguing quality of gifts is that they often leave our sight and become transformed before they return to us. In a gift economy, one person may give something to a second person, who may then give to a third. The originator may expect to receive a return gift not in direct exchange but perhaps from the third, fourth, or nth person in the gift "circle." In this manner a gift may go "around a corner" and out of our sight before it returns to us. "When I give to someone from whom I do not receive (and yet I do receive elsewhere), it is as if the gift goes around the corner before it comes back. I have to give blindly. And I feel a sort of blind gratitude as well" (Hyde, p. 16). In the case of *14 Uses for a President* I had to leave the library and literally walk around the corner to find the gift transformed into a display about the newly elected president and available for anyone else who walked down that hall. As the school librarian, I have come to think of this in terms of assessment and to realize that often the results of our work in the Learning Commons are transformed and removed from us. Assessment may mean leaving our spaces, going around the corner, and bringing something back to our attention.

Increase

Because a gift has motion and the potential for transformation, it is alive and growing. A gift often is seen to increase once given away. Hyde points to several folktales as illustration of this phenomenon and we might think of the goose that continues to lay more golden eggs, the pot that keeps on cooking, or the conversion of straw into gold. In the story above, a book left the library and went into three classrooms where it was transformed into three more classroom books. The pages from one of those books moved to a hallway display and were viewed by many members of the school community. The school librarian kept the idea in motion by suggesting it become part of a school-wide performance and a newspaper reporter carried it to more people through a front-page feature. A request for copies of the newspaper kept the article in motion as schools across the county sent stacks of newspapers to Obama Elementary School and those were distributed to every student in every classroom. As the gift

remained in motion, it grew and grew. In one sense my sharing of the story here is another example of the motion and increase of the original gift.

Community

Of particular interest in the work of Hyde is his discussion of the "Gift Community." Throughout he talks about gift exchange as representative and reinforcing of social bonds. The acceptance of a gift creates a bond between the giver and the receiver leading Hyde to subtitle his book "Imagination and the Erotic Life of Property" using the sense of "eros" as union or attraction. As a gift moves through a circle it establishes a decentralized kind of unity among participants. Receipt of a gift creates a sense of obligation in the receiver that may have made it difficult for the grade level to say no when I came begging in December for them to perform *14 Uses for a President* on stage. Returning to the role of the librarian in the Learning Commons, this sharing and movement of the resources we have in our collections and knowledge banks binds us to the school community and the school community to us. In this scenario, it resulted in a reluctance to say no to my request for participation. In other scenarios such as budget and staffing discussions, the community bonds we build with what we give away may be a huge advantage.

Hyde (1979) talks particularly about the science community as a gift community. He notes that scientists share their work through "contributions" to journals or conference proceedings. Scientists receive prestige or esteem for their contributions but not payment. Hyde notes that science is such a huge undertaking that no one person could do it alone and so it requires cooperation and the free exchange of ideas. In *Wikinomics*, Tapscott and Williams (2006) talk about the "new Alexandrians" in a digital age working to share larger data sets with more collaborators in less time through new technologies. The kind of work that Hyde described for the scientific community is looking more and more like the work of the twenty-first century and thus more attuned to a gift economy. As Jenkins et al (2006) note, "Schools are still training autonomous problem-solvers, whereas as students enter the workplace, they are increasingly being asked to work in teams, drawing on different sets of expertise, and collaborating to solve problems" (p. 21).

New Technologies

The news media and technologies of email and the Internet played a significant role in the increase of the gift in the story above. The newspaper delivered part of this story and gift to numerous subscribers and readers across the region. In particular a link from that article to an Internet site allowed a reader with online access to enjoy the actual *14 Uses for A President* through the pictures and reading of two students. Yet paradoxically these might not have reached our population who likely did not have home delivery of the daily newspaper or Internet access. Jenkins et al (2006) describe this as one of the challenges of a participatory culture, "the participation gap" or those

who are potentially left out of the current gift circle created by new technologies. My email went to close to a hundred school librarians in the district; dozens responded with hundreds of copies of the newspaper. Through the library and classrooms, the newspaper and the Internet connection brought the gift back around the circle to the students. Gift exchange is a traditional practice studied by anthropologists, yet the implications for social media and new technologies seem far-reaching and worthy of our attention. How can we leverage new technologies in the Learning Commons to provide access to these gifts for all of our students?

Implications for the School Librarian in the Learning Commons

The Learning Commons begs for a new metaphor to counter the climate of high-stakes individual testing and accountability that treats students as test scores and rewards and punishes teachers based on purely quantitative measures. Libraries have worth in a community for what they give away both in terms of material items that circulate through our doors, or hits that can be counted on our websites and in the less tangible knowledge, skills and ideas that we bring to collaboration with other educational professionals. We have historically worked within our communities to widen the gift circle and provide access to our resources. No one who has ever witnessed new kindergarten students gleefully clutching their first library books can doubt that they consider those books as special gifts to be unwrapped again and again in their classrooms and homes.

Hyde talks about teachings as a particular kind of intangible gift where the gift and the acceptance of the gift provides an opportunity for transformation: "I do not mean schoolbook lessons, I mean those infrequent lessons in living that alter, or even save, our lives" (p. 45). Viewing education as imbued with moral purpose, Cooper (2004) suggests "Educational processes are fundamentally social and mutually interested phenomena, and are closer to gift exchanges than to commodity transactions" (p. 9). Mahn and John-Steiner (2002) talk about the "gift of confidence" to examine how providing caring support and attention to the affective domain of learning helps to build confidence in learners that scaffolds their learning. Summarizing the importance of considering the affective domain in education, Martin & Reigeluth (1999) say "The affective domain may be equally, if not more, important than the cognitive domain in promoting student learning, and the domain has overlapping dimensions of development that promote growth. These include emotional, moral, aesthetic, social, spiritual, and motivational development" (p.506). The *Standards for the 21st Century Learners* echo these authors with a focus beyond skills including dispositions and responsibilities. These standards position school librarians in the Learning Commons to create the kinds of transformative gifts identified by Hyde as "teachings."

Gift exchange (Hyde, 1979) offers a powerful metaphor that encourages us to lift out certain meanings about the Learning Commons and may suggest a more interdependent and ecological model such as Johnson's (2010) Fourth Quadrant for

innovation. An economy based on gift exchange is defined in stark contrast to an economy based on market exchange and helps us to articulate what might motivate educators beyond performance bonuses and higher test scores. The giving and receiving of gifts between participants creates a relationship or bond between them. When the giving and receiving of gifts is a community norm, these exchanges help to cement a community. "The giving of a gift tends to establish a relationship between the parties involved. Furthermore, when gifts circulate within a group, their commerce leaves a series of interconnected relationships in its wake and a kind of decentralized cohesiveness emerges" (Hyde, 1979, p. xiv). The motion of gifts, the creation and sustainment of interconnected relationships, the manner in which gifts may travel away from us and become transformed and the decentralized power of gift exchange suggest the complexity of an ecosystem rather than the open, shared fields of a commons.

The story I offer above began from a small, commonplace beginning. As the school librarian, I brought a book to the table and the teachers took it up and transformed the book and my ideas for the book. Leaving the library to walk around the corner I discovered the gift their students had created and was awe-struck by the meaning they had created from connecting their own lives to an historic moment. "You can infuse your work with purpose and meaning when you think of it as a gift" (Pink, 2005, p. 244). The teachers and I managed to keep the gift in motion with the help of a newspaper reporter and school librarians across the county. I would like to suggest that as school librarians, we view our work as an exchange of gifts. Viewing ourselves as open-handed by sharing the material resources of the library as well as our ideas and knowledge about those resources is a powerful means to encourage innovation in the Learning Commons. As we find ways to move around the corner and view the transformation of our gifts, we partake in a kind of assessment and work to keep those gifts in motion. Finding ways to keep gifts in motion serves to connect our community in an ecosystem of learning and innovation. Otherwise the Learning Commons is simply an open field that anyone may graze in rather than a complex of relationships and innovation.

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Taking the Learning Commons to a new level – Year 2

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It took a year of conversations and purposeful action for me to migrate from a “library media center” to a true learning commons. After a year of hard yet but energizing work, the Loertscher inspired experimental commons, the open commons, the virtual commons, and knowledge building centers were finally in place and my plan was to spend the year refining them. The Learning Commons sign was front and center and throughout the library were signs that said “Collaborate” “Think” “Create” and “Ask”. Google apps for education were in place for all of our students and the faculty to begin the year.

Laying the Foundation

I had analyzed database usage, patron usage, and collaborated with every department to conduct Common Formative Assessments for students. We had analyzed data from students finishing projects to see where Knowledge Building Centers could help them, as well as identifying areas where the Library Media Specialist could assist them with their research and production skills. I had provided Knowledge Building Center wiki page pathfinders for every teacher who brought his/her class to the Learning Commons, and watched the database usage increase while these projects were assigned. Students were adding knowledge to these pages through discussions and by adding links they had evaluated. Life in the Brookfield High School Learning Commons was good by all accounts. Truly all the pieces were in place... except nothing in education is truly in place. The pendulum swings all the time and this time it was skyrocketing toward Personal Computing Devices (PCD's). This time it seemed less like a swinging pendulum and more like a sky dive into the unknown.

In early October I found a PCD (an iPad) on my desk – shiny new in its box. I knew if I opened it at that moment I would neglect my teaching duties for the day, so I waited... not too patiently, and as soon as possible, I removed it from its packaging and immediately began syncing it with my computer to set it up. My visionary principal, Dr. Bryan Luizzi, the benefactor of my new iPad, knew where to go to find someone as curious about technology integration as he was. Although I knew the price for my new iPad would be the expectation that I would test out loads of new educational apps and that I would talk to him regularly about everything we could do with this new tool, I gladly agreed. Ultimately, I realized, our goal was to put these devices into the hands of every incoming 9th grade student for the 2011-2012 school year. He hoped to replace their textbooks with the iPad, to use it as an assistive learning device for Special Education students, to have it read aloud for English Language Learners, and to

supplement curriculum and research for everyone. In essence, he asked us to consider how the experience of teaching and learning changes when every student in the classroom has almost instantaneous access to all of the knowledge of the human race available on the Internet. How could anyone interested in technology for learning pass up such an opportunity?

He not only bought one for me, he also wisely purchased them for the technology specialist at our school, for the Director of Technology, and for himself. Equipped appropriately, each of us began experimenting and learning about the role iPads could play in our school. We each began doing our parts to lay the foundation for the ultimate rollout for our incoming ninth grade students.

Having an iPad in his hand propelled the Director of Technology to find dollars for this exciting initiative. Over the course of the year, our tech worked on the back-end and prepared the building for a glut of these wifi only devices. She found a cloud-based, robust wireless network and installed it throughout the building. She then researched, purchased, and installed a monitoring and distribution software system to deploy 250+ tablets to students. These two pieces in place readied our infrastructure for the hardware.

We met with our district's policy guru to outline what we felt could be significant changes to our policies and to open the door to other students using personal computing devices. Policy changes were reviewed with the district's attorneys and then presented to the Board of Education for their approval. This process took the better part of 6 months. We looked at other school's policies but when it was said and done, we really had redefined the way technology could be used in our school district by thoughtful discussion of what we expected students to know and be able to do in a digital world (1-1 Personalized). Through this conversation and several conversations at the Board of Education and community level, the parents of Brookfield voted to approve the budget with these devices included, despite the terrible economy. Our technology and business director found ways to make the purchase of the equipment revenue-neutral, so the only new costs associated with the rollout were those for the software. This, and the significant planning and consideration of the program, clearly convinced the parents to support the implementation.

In May the 9th grade teachers were given their iPads. There were some formal and informal PD sessions. Dr. Luizzi and I met with teachers and they quickly followed the "train the trainer" model as some of them became more proficient quickly. We had open hours on Mondays after school for interested and curious teachers. Additionally, at Brookfield High School, teachers meet for an 83 minute block every 4 days as a Collaborative Learning Team. These teams are organized by course, and provide teachers with an opportunity to learn in action. The Collaborative Learning Teams of the 9th grade teachers began using this time to develop units and assessments that integrated the iPad apps into their courses for the fall.

We also developed a new mini-course, "Skills 21", which would provide the foundation for our deployment and introduction of the use of the tablets to the students. This class will be taught by a certified Library Media Specialist. This 6 week mini course will have as its curriculum, digital citizenship, communication, and creation using the apps that would cross disciplines. In essence, the course will focus on helping students to become responsible producers and discerning consumers of information. All 9th graders are enrolled in this course and all 9th graders will have their tablets in hand by the end of week 2 of school.

Measuring

We expect that all students will be engaged, but we know there are no reliable ways to measure engagement. Besides, students could be engaged with their tablets playing "Angry Birds" when they were supposed to be otherwise and more academically engaged. We knew that we would need data to measure learning. One of the key people we consulted was Dr. Donald Leu, of the Center for New Literacies at the University of Connecticut. Dr. Leu and his staff were working on a new online reading assessment that would measure online reading and real world applications for 7th grade students. The test tracks the clicks and the mouse movements of students reading online by recording their screens as they take the assessment. Dr. Leu asked if he could use our 9th grade students as a test case for his test. We jumped onboard. This would give us some baseline information to measure our students reading achievement. We provided standardized test scores for his staff and are awaiting the results. We know this will be a key factor in our measuring student achievement as our initiative moves from its infancy. We will also continue to evaluate our 9th grade students with the TRAILS assessment as we move forward. We used this online assessment at the beginning and the end of the 2010 -2011 school year with our students and found growth in areas on which we focused, search strategies, and evaluating web sources. These skills and more will be needed in a one-to-one tablet world.

Pioneering

We spoke with other school districts that were also pioneers in the one-to-one tablet field to pick their brains and we found that there was not much information out there for us. Dr. Luizzi spoke with the superintendent of schools for Roslyn High School on Long Island, an early adopter. The Roslyn superintendent said, "It's not about a cool application. We are talking about changing the way we do business in the classroom" (Hu 2011). We were also forging this path as one of the leaders.

We tried different tablets but the spring earthquake in Japan slowed down production of many of the tablets that were expected to roll out in the spring, which left us with the innovative iPad tablet as our choice. Once we knew our platform, we met with some textbook companies. Some of our texts currently have web access and those are

available to our students. Other companies are just not there yet but hope that they will be there soon.

Apple brought their systems and development staff to a meeting with us to help us with our deployment. We asked how other schools were planning to use the iPads with their students and we heard what we already knew to be true (the very reason we chose to go with a tablet initiative). It is all about knowledge building. The classroom, like the Learning Commons, is a knowledge building center; the teacher is there to be a "guide on the side".

Will Richardson, in an interview with Education Week said that schools are "going to have to find ways to leverage the one-to-one technology environments they already have in most high schools right now, using the technology that kids have in their backpacks and pockets." We hope to open our environment this year to our students because as Richardson also says, "it's not about knowing this particular fact as much as it is about what you can do with it" (Rebero, 2010).

As I get ready to open the doors of the Learning Commons for the 2011 -2012 school year, I have a few apps up my sleeve to share with students for their PCDs. The Skills 21 teacher is now hired. Research, evaluation skills, and production tools will be taught in her class and in the Learning Commons and the iPad will open up the doors of the world to our students. There is not one particular app for teaching or learning, but the experimental learning commons, the virtual learning commons, and the knowledge building centers in the physical and virtual Learning Commons will all be enhanced by putting these devices into the hands of our students and watching them take their own skydive plunge.

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Part II

Student Needs and the Learning Commons



International Books and Reading in a Global Learning Commons

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International books can take students to the far reaches of the globe whether it's through the "picture" created while reading or from the treasure trove of information coming from nonfiction books about other places and cultures. Whether or not students are accessing library resources physically or digitally, the number of quality international books has never been greater and continues to increase. A Global Learning Commons needs to be an important segment of a virtual learning commons as it endeavors to "spread its wings around the world" (David Loertscher). How do we go about creating a global learning community using international books?

First and foremost, we need to be aware of quality books, not only set in other countries but written by authors from other countries and cultures. A valuable resource for building a quality collection of international books is the Mildred L. Batchelder Award presented by the Association for Library Services to Children (ALSC) of the American Library Association (ALA). The Batchelder Award is presented annually to an American publisher for an outstanding children's book published originally in a language other than English in a country other than the United States that has, then, been published in English in the U. S. In addition to the Batchelder Award, there are other resources for locating quality international literature.

The United States Board on Books for Young People, also known as USBBY, publishes a list each year of quality international books. The list, Outstanding International Books (OIB) is published each February in *School Library Journal*; the list is also available at the organization's website (www.usbby.org).

The Americas Award recognizes the importance of works of literature from fiction to nonfiction and spanning children's and adolescent literature that accurately portrays Latinos in the United States and in Latin America and/or the Caribbean. Sponsored by CLASP (the Consortium of Latin American Studies Programs), its purpose is to promote distinctive literary quality with cultural content that has potential for classroom use.

International literature as one facet of a learning commons, whether physical or virtual, may be most beneficial for high school students. Batchelder, Americas, and OIB books can entice students to explore other countries as they think about careers and increase their understanding of the world. News on television and the Internet has brought

reality of war and other foreign affairs into their homes and schools. Fiction, in particular, presents unique reading opportunities. Through a global learning commons students who read novels about other countries can 1) verify background information, 2) expand on factual information, 3) satisfy their curiosity about historical characters and places, 4) become immersed in the customs and beliefs of a culture different from their own, and 5) identify with universal themes but on a personal level through interesting characters.

Recognition of international books in English and in translation increases as our world shrinks and as international awards increase in stature. While students can search the Internet and databases for facts about countries, librarians and teachers rely upon quality books to communicate the cultural flavor, customs, history, and people of our world. Imagine the horror of life in Poland under Nazi occupation. Read *Once and Then* by Australian author, Morris Gleitzman for an understanding of how childhood ended for hundreds of thousands of children of Jewish descent as the Nazis began their occupation. *Between Shades of Gray* by Ruta Sepetys follows Lina, a teen whose family is taken by the Soviet secret police and sent to Siberia. John Boyne's *The Boy in the Striped Pajamas* takes a naïve eight-year-old named Bruno who travels with his parents to a new home in a camp, a camp his naïve mind believes is Camp Out With but is, in reality, Auschwitz. Y'Tin, age 13, wants to be a trainer of elephants in his native Vietnam, a plan interrupted by war in Cynthia Kadohata's *A Million Shades of Gray*. Mitali Perkins sets her novel in Burma. *Bamboo People* is the story of two young boys, one on each of the opposing sides of a conflict, both affected by the unrest in their country.

How do international books in the hands and minds of children and teenagers fit into a global learning commons? Since a learning commons should be a "giant collaborative of reading culture" (David Loertscher's term), we can encourage readers to participate in many different ways. During and after their reading of international literature, students can post to social networks such as Twitter, Facebook, and Goodreads (or Shelfari, Library Thing, Google+) about their new understanding of the culture of the story. They might create collaborative web sites for the different countries in which their stories are set, web sites that highlight various aspects of culture gleaned from their reading. Book trailers, designed to motivate others to read, could be created by students working individually or collaboratively. As the Global Learning Commons breaks from the tradition of American-centered works of literature, so too should the sharing of such books move beyond traditional book reports.

In summary, in a learning commons with virtual and physical expansions, as David Loertscher and other visionary educators describe the concept, there's room to focus on global learning. Access to quality international books in print, in audio, or online opens windows and doors to reading experiences that will enrich the lives of students whether they're reading in a comfortable chair in the library, at home, or in any other location.



Strengths and Opportunities School Librarians Serving Students with Special Needs in Central New York State

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Abstract

The programs and services offered at school libraries will be accessed by K-12 students with a range and variety of physical and cognitive abilities. School librarians must be equipped to provide information to and address the information seeking needs of all patrons including those with special needs. An electronic survey was conducted to collect data from school librarians working in Central New York State school districts with the purpose of exemplifying the strengths this particular group of library professionals has with respect to providing services to students with special needs.

This paper shares the answers to five research questions and presents opportunities for improvement that are suggested based upon participant's responses. Study results indicate that the respondents showed strength in several of the examined areas. Results also reveal that there are methods that the school librarians can employ to increase and improve library services for students with special needs.

Introduction

The once popular depiction of school librarians as stern, student-shushing, book-shelving, paraprofessionals has been replaced with a more appropriate understanding of their role in the school community. School librarians are certified information specialists who are also trained educators with the ability to reach every student in the school environment (Franklin, 2011). At one time, school librarians operated separately from classroom teachers and were generally only called upon to relieve them of their teaching duties during break time (Franklin, 2011). The expectation today is that school librarians will seek opportunities for instructional delivery by collaborating with general and special educators in order to meet all students' needs (Dow, 2010; Franklin, 2011; Zmuda & Harada, 2008).

Study Purpose and Research Questions

During the 2007-2008 school year (the most recent year for which statistics are available), there were approximately 6.6 million students in our nation's public schools with some type of disability (U.S. Department of Education, 2010). Because of the large number of students with special needs, school librarians must have an understanding of their unique education and information needs and be prepared to meet these needs through the library program (Allen & Hughes-Hassell, 2010). This study was conducted to collect data from school library practitioners in school districts in central New York State¹. The inquiry is a pilot test that replicates a Master's thesis study conducted by Kendra Allen (2008) and is intended to gather data that will guide the design of a broader national study. Study results will highlight the participants' current strengths and will show areas where reported challenges present opportunities for success regarding their interactions with students with special needs. Analyzed data can serve as a useful first step in discussing how school librarians might position themselves to meet the needs of all 21st century learners regardless of their cognitive or physical abilities.

Five questions are explored via the study:

1. How do school librarians rate their knowledge level of best practices for serving students with special needs?
2. What resources do school librarians use to become informed about best practices for serving students with special needs?
3. How do school librarians rate their knowledge level of the students with special needs enrolled at their schools?
4. What types of services and accommodations do school librarians offer to students with special needs?
5. What level of collaboration do school librarians have with special education teachers?

Literature Review

The Individuals with Disabilities Education Act (IDEA) was implemented to ensure that students with special needs would have the same opportunities to receive a free, appropriate education as their peers without physical disabilities, health impairments, or cognitive challenges (U.S. Department of Education, n.d.). IDEA's tenets do not apply only to the traditional classroom; they must also be present in all areas of the school environment including the school library. Numerous studies have concluded that students who attend schools with certified school librarians have higher achievement levels (as measured through standardized tests) than their counterparts

¹ The state of New York has the third largest population of K-12 students with disabilities enrolled in public schools in the U.S. (U.S. Department of Education, 2009).

who do not (some examples include Lance, 2002; Lance & Loertscher, 2005; Small, et al, 2009).

Concern about K-12 school library services for students with special needs is not a new topic. One edited book published almost three decades ago (Macon, 1982) included contributions from seven researchers about subjects as varied as "characteristics of the handicapped" and "selecting materials for the mainstreamed library." While much of the terminology in the book is outdated, the core purpose remains relevant: School libraries and librarians must play an active role in educating students with special needs.

Recent literature related to the school librarian's role in special education present sound practical perspectives. Allen (2008), for example, examined "the relationship between school library media programs and special education programs [in North Carolina] in the context of meeting the unique needs of students with disabilities" (Allen, 2008). Zambone and Jones (2010) provided an outline of the various types of learning challenges that might be present in a school environment. Brind'Amour's (2011) survey of school librarians and special educators in Western New York State exposed gaps in perception about the level and quality of library experiences for students with special needs. Franklin (2011) shared perspectives from pre-service school librarians that could be useful for shaping LIS curriculum in the area of preparing future practitioners for serving individuals with disabilities in K-12 environments.

The United States is not the only country where the relationship between school librarianship and special education has been examined. Using the library to serve students with special needs is a topic that with international implications. For example, in 1999, Murray considered the effectiveness of the training available to Australian school librarians to prepare them to serve student with special needs. Jouzatis (2004) contemplated best practices for serving students with specific learning disabilities in Canadian school libraries. Abrizah and Ahmad (2010) examined barriers to service provision to "special education needs" students enrolled in schools in Malaysia.

There are many opportunities for additional research around the extremely important topic of library services for students with special needs as is illustrated in the results of the third phase of a study conducted to by a team of researchers led by Ruth Small (Small et al, 2010). The study examined school librarians' impact on public school students in New York and found that respondents reported lower knowledge levels about serving students with special needs than any other topic about which they were asked. The study results were important for measuring the New York librarians' perception of their ability to serve students with disabilities. New research efforts and subsequent reports must facilitate dialogue about the various methods school librarians use to effectively teach students with special needs how to seek, manage, and use information. This study makes a step toward contributing to such literature.

Methods

Participant Recruitment

Study participants were recruited from one of the largest Boards of Cooperative Educational Services (BOCES)² in New York which provides services to the school districts in three counties in the central New York region. The librarians in one school district in the region that does not receive BOCES services were also contacted. Each school librarian in the BOCES and individual school district (a total of 157 individuals) was sent an email explaining the study's purpose; the message included a link to the electronic survey questionnaire.

Survey Instrument

The electronic questionnaire consisted of 20 items that allowed respondents to reflect upon their experiences related to providing library services to students with special needs. The survey instrument contained 15 multiple choice items, three open ended items, and two Likert-type scale items. While the survey was not timed, it is estimated that participants were able to finish the questionnaire within 10-12 minutes. To protect participants' confidentiality, no identifying information (such as IP addresses, personal contact information, or school district name) was collected. Demographic information collected pertained to such characteristics as respondents' work environment and years of service as opposed to traditional demographic descriptions such as gender, race/ethnicity, and educational level which were not necessary for the conduct of this study.

Study Limitations

A call for participation was issued during the last three weeks of the school year. The researcher believes this resulted in a low response rate. The responses represent a convenience sample of a very small section of school librarians in the specified school districts. Because of the low response rate, the results cannot be considered representative of the entire target population nor can they be generalized to make predictions about other populations (such as other New York State school districts).

Findings

What follows is information that describes responses from the questionnaire items that address each research question.

² New York's BOCES support schools by providing a broad range of "shared educational programs and services to school districts within the state" (BOCES of New York State, 2011).

Demographic Data

Fifty school librarians accessed the electronic questionnaire; 43 submitted responses that contained complete information (27% of the total possible participants). Eighteen respondents provided library service at elementary schools, seven at middle schools, twelve at high schools, and six respondents worked in other types of school settings. These settings include K-8 schools, 7th-12th grade schools, and schools that serve students in grades eight and nine. Two respondents "float" between two or more schools in their district.

Respondents represented a broad range of experience. Nine school librarians had been providing service for five years or less, ten respondents had been school librarians for six to eleven years, fourteen respondents had been delivering service for 12-17 years, and ten had been school library administrators for 18 years or more. None of the respondents had earned National Board Certification.

RQ 1: Knowledge level of best practices for serving students with special needs

The first research question asks 'how do school librarians rate their knowledge level of best practices for serving students with special needs?' To answer this question, the school librarians used a scale to rank their level of knowledge about best practices for serving students with special needs (a score of 1 indicated no or very little knowledge, a score of 5 indicated high knowledge). The majority of respondents (n=22 or approximately 51%) ranked themselves as having average knowledge (a score of 3) about how best to serve students with special needs. Eleven (approximately 25%) ranked themselves as '4' indicating that they had a moderate level of knowledge. Six respondents (almost 14%) indicated that they had a moderately low level of knowledge (a score of 2) and only four librarians (about 9%) reported having a high level of knowledge about the best ways in which to serve the unique needs of students enrolled in a special education program. No respondent indicated having no or a very low knowledge level. Figure 1 contains a table containing these responses.

Knowledge Level	# of Respondents	% of Respondents
1 (no/little knowledge)	0	0%
2	6	13.9%
3 (average knowledge)	22	51.2%
4	11	25.6%
5 (high knowledge)	4	9.3%
TOTAL	43	100%

Figure 1. Knowledge of special education best practices.

RQ 2: Resources used to inform best practices for serving students with special needs

Research question two is posed as 'what resources do school librarians use to become informed about best practices for serving students with special needs?' One of the goals of this study was to learn more about print, electronic, and other resources that school librarians consult in order to become more knowledgeable about best practices. With respect to print and electronic resources, an open-ended question was included in the survey questionnaire that allowed school librarians to share the names of the publications and internet resources they regularly peruse. The respondents indicated being readers of a wide variety of professional literature. Respondents frequently listed Booklist, School Library Journal, School Library Media Activities Monthly, and Knowledge Quest as publications read on a regular basis.

Study participants also indicated visiting a number of library related electronic resources such as Web sites, blogs, and wikis. However, the range of these resources was so large that a concise itemization could not be produced.

Survey respondents were asked to make a distinction between how they *actually* receive information about best practices for serving students with special needs and how they would *prefer* to do so. One questionnaire item allowed respondents to select multiple options from a list of nine potential information sources to indicate all of the ways they receive information about best practices. A second item presented the same list of information sources but allowed for only one selection so that each respondent's preference could be recorded. The top five ways school librarians actually received information were special education teachers (38%), other school librarians (30%), general education teachers (28%), professional literature (26%), and school sponsored professional development (26%). The top five ways school librarians would prefer to receive best practice information were similar. However, different from how they actually received best practices information, the respondents reported that in addition to receiving information from special educators (24%), other school librarians (9%), or general educators (9%), they would also like to have information presented to them from professional development activities offered through their school district or BOCES (9%) or by attending professional conferences (7%). Figures 2 and 3 present respondents' actual and preferred methods for becoming informed about special education best practices.

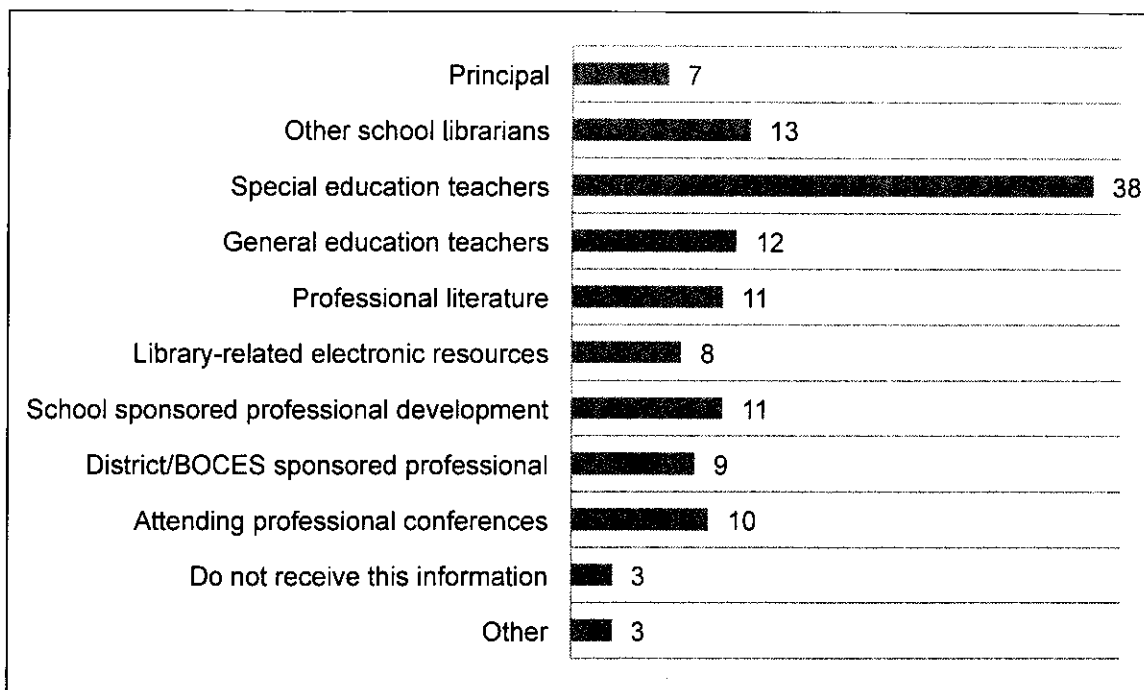


Figure 2. Resources used to receive information about general best practices for serving students with special needs.

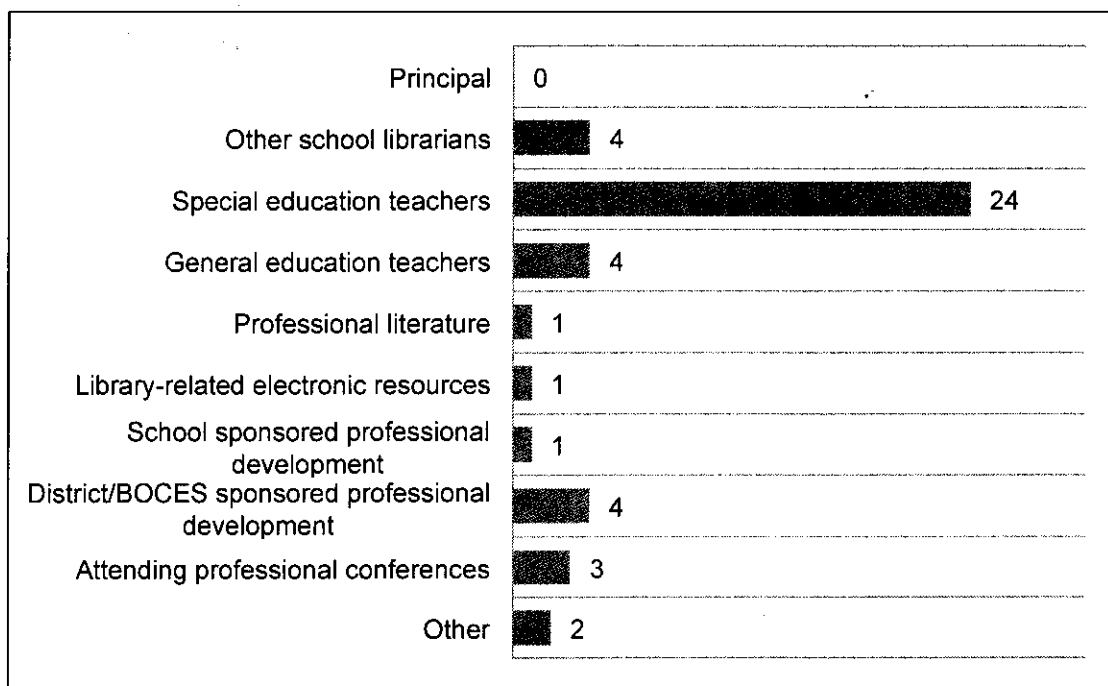


Figure 3. Preferred resources for receiving information about general best practices for serving students with special needs.

RQ 3: Knowledge about serving students with special needs

Research question 3 is posed as 'how do school librarians rate their knowledge level of the students with special needs enrolled at their schools?' Three questionnaire items addressed this question. First, study respondents were asked to rank their perceived level of knowledge about the students with special needs that access their library programs. The majority of the school librarians (n=20 or just over 46%) believe that they have moderate knowledge (a score of 4) of the special education students in their school environment. Twelve respondents (almost 28%) perceived themselves as having average knowledge (a score of 3) about their special education students. Six librarians (13.9%) reported moderately low knowledge level (a score of 2) and five (11.6%) believed they had a high level of knowledge concerning students with special education needs in their schools.

Similarly to the method used to determine information about best practices, two items asked respondents to consider seven options then indicate all of the ways they *actually* received information about students enrolled in special education programs in their schools. Respondents were then asked to indicate the one method they *most preferred*. The librarians reported receiving information via multiple means including special education teachers (79%), general education teachers (30%), individualized education plans (IEPs) (7%), the principal and parents (both 5%). When required to choose a preferred method for receiving this type of information, the majority of study respondents (36 or 84%) indicated that they preferred to receive information about the special needs students in their school from special education teachers. Only four respondents would prefer to receive information from their principals or from general education teachers, and three suggested attendance at meetings other than IEP meetings would be their preference. No respondents selected parent interaction or attendance at IEP meetings as preferred methods.

RQ 4: Services and accommodations offered

The fourth research question asks 'what types of services and accommodations do school librarians offer to students with special needs?' Survey respondents were able to select as many options as were applicable to indicate materials they purchase specific to educating students with special needs, modifications they make to the library, and modifications they make in instructional delivery. The school librarians surveyed for this study implemented a wide array of materials specific to meeting the needs of special learners in their respective school environments. Forty respondents (93%) indicated that they include books with high interest level and low reading level in their collection. Thirty three librarians (77%) offer audio books as selections for students. Thirty librarians (70%) select materials that accurately portray children and youth with special needs. Figure 4 contains a complete listing of responses to this item.

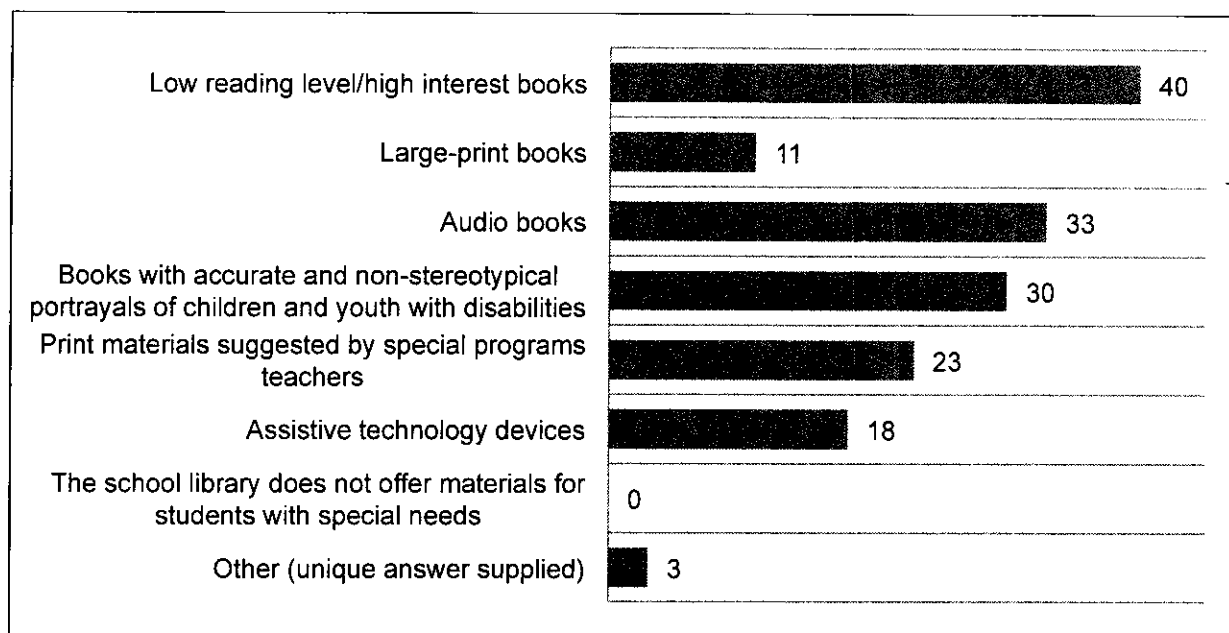


Figure 4. Library materials for students with special needs included in collection.

With regard to physical library space, 74% (n=32) of the responding librarians indicated that their libraries had wide aisles so that students with wheelchairs (and other ambulatory devices) could easily navigate the environment. Fifty eight percent (n=25) have libraries with computer stations built high enough to accommodate an individual using a wheelchair. Forty percent (n=17) of the respondents make sure to place frequently used materials on shelves that are easily reached by students with physical disabilities.

Some school librarians responding to the survey assisted students with special needs by including their family members in library services. For example, 13 librarians (30%) allow parents to check out materials from the school library. As well, seven respondents (16%) have information in their collections about specific disabilities; the same number include resources that address parenting and child development concerns.

One item allowed respondents to select all of the accommodations and/or modifications they make in delivering instruction to students with special needs; respondents were also able use their own words to include instructional modifications they utilize that did not appear on the list presented to them. The most frequently selected accommodation was repetition of instruction (n=32 or 74%). The same number of respondents (n=31 or 72%) indicated that they adjust the pace of their instruction and use visual cues to assist students. Twenty four librarians (56%) provide individualized instruction to students with special needs about how to use library facilities. Twenty three respondents (53%) pair students without disabilities with students who have special needs during library instruction activities. Figure 5 contains information about instructional delivery accommodations.

Accommodation Type	# of Respondents	% of Respondents
Guided or individualized instruction on how to use library	24	56%
Repetition of instruction	32	74%
Adjust pacing of instruction	31	72%
Adjust group size	16	37%
Use visual cues or reminders	31	72%
Pairing students with special needs with students who do not have special needs	23	53%
Use big books	5	12%
Use picture books with large, clear illustrations	13	30%
No accommodations made	1	2%
Other (unique answer supplied)	6	14%

Figure 5. Accommodations made for instructional delivery. Multiple selections possible.

RQ 5: Collaboration with special education teachers

The final research question examined through this study is 'what level of collaboration do school librarians have with special education teachers?' Twenty eight school librarians (65%) indicated having collaborated with special educators at some point during their careers. Collaborative activities almost exclusively occurred through instructional activities involving special education teachers; only two respondents had attended IEP meetings and only one had helped to create IEP goals.

Discussion

The data described above help to illustrate the strengths the survey participants. The following sections discuss what the collected data imply about opportunities for the respondents to expand and improve services for students with special needs.

Knowledge Levels

One encouraging finding is that no respondents indicated having no or very little knowledge of general best practices for educating students with special needs or the students enrolled in special education in their respective schools; very few indicated

having a moderately low level of knowledge in these areas. It is positive that the majority of respondents rated their knowledge in these areas as average to moderate. A goal to strive for is high knowledge level in both areas because understanding general issues related to special education and having specific knowledge about patron needs allows school librarians to design and/or modify programs and services to make the library welcoming and useful for all who enter.

Utilization of Resources

One way that educators can stay abreast of current and emerging issues related to students in general and those with special needs specifically is to read literature written by researchers and practitioners. Respondents listed a wide variety of print and electronic resources that informs their professional activities. These resources ranged from research inclusive journals (e.g. Knowledge Quest) to highly practitioner focused magazines (School Library Journal). None of the respondents indicated reading publications that were specific to special education. As was communicated by more than one respondent, a school librarian's schedule leaves little time available to read professional literature. However, in addition to the experience gained by actually working with students with special needs, school librarians can be exposed to important issues about this population by reading articles and Web based documents that inform them about library and special education practices.

Almost all of the school librarians who participated in this study are fortunate to be able to receive information about best practices and students enrolled in special education at their schools from sources such as general educators, special educators, professional development activities offered in their respective schools and districts, and attendance at professional conferences. However, a surprising finding was that only two respondents **actually** receive information about students with special needs at their schools from the children's parents and none **preferred** to get information from parents. Parents are not necessarily frequent users of school library materials but they can be integral members of a school library program (LaBoon, Salerno, & Meraz, 2010; Pipkin, 2009). Parents of students with special needs are particularly useful resources because they can share valuable first-hand insight regarding solutions to accessibility challenges (Copeland, 2011). School librarians can benefit from the knowledge parents have to offer by inviting them to contribute as library volunteers.

Library Services and Accommodations

The school librarians surveyed showed particular strength in the range of instructional accommodations they were able to implement. In fact, only one respondent did not adjust instructional practices in order to address any special educational needs. All of the school librarians who participated in the survey reported that they include materials in their collection that address specific needs and interests of students with disabilities (including, in addition to the listed options, Braille books). This finding is particularly

relevant because in order to fully serve library patrons, all students' needs must be taken into consideration (Copeland, 2011). These data indicate that the librarians are aware of the importance of providing materials for students of varying abilities.

Most of the respondents work in libraries that accommodate the needs of patrons with physical limitations by making adjustments to the library space. Apart from the options available for selection, three respondents also shared that the computers in their libraries offered touch screens and modified keyboards. However, ten respondents work in libraries with no existing modifications for students with special needs. It is possible that these librarians work in schools where no students need modified environments in order to fully access the library and its materials. However, it is important for school librarians to be vigilant about moving toward incorporating universal design principles to enable access to the largest range of patrons (Blue & Pace, 2011).

An area that is ripe for opportunity based upon survey responses is in library services offered to the families of students with special needs. While 13 librarians indicated that they allowed parents to check out library materials and 14 have resources in their collections that address parenting and child development issues as well as information about specific disabilities, most (n=25 or 58%) study participants do not offer services designed to provide information to families of students with disabilities. Including family members in library programs and services is not a state of federal mandate but creating an environment that is welcoming to and inclusive of parents and other family members who care for students with special needs helps school librarians to foster a sense of concern and mutual respect between the school librarian and the students' family members.

Collaboration with Special Educators

Another encouraging finding concerns collaboration school librarians have with special education teachers. Twenty eight respondents have worked collaboratively with special educators; 26 shared examples of these collaborative efforts which included such activities as preparing unit plans and consulting with special education teachers to so that needed materials will be available to their students.

Because special education teachers have been extensively trained to design instruction for students with special needs, it is imperative that school librarians seek their input when planning library programs and services (Farmer, 2009; Franklin, 2011). So while it is positive to note that a number of the librarians surveyed have been involved in collaboration with special educators, an opportunity for improvement in this area is readily apparent because the collaboration percentage is not closer to 100. School librarians must seek opportunities to align themselves with the educators who work with students with special needs so that they may draw upon their knowledge and

experience to assess and improve their own instructional design methods as well as accommodations that may need to be made to the library space.

Another opportunity for collaboration comes in the form of IEP construction. Only two school librarians indicated having attended IEP meetings and only one contributed to goals and objectives included in this important plan that guides a student's education. With the myriad responsibilities school librarians must constantly assume, it is likely not probable or even possible for them to be present at IEP meetings. However, school librarians – in consultation with special education teachers and administrators – should have the opportunity to contribute information literacy goals to IEPs so that students with special needs will be able to participate in the programs and services the school library has to offer to the fullest extent possible (Farmer, 2009).

Additional Opportunities

While this study has focused on the strengths a specific population of existing school librarians possess as well as areas where opportunities for growth might be considered, the responsibility for leveraging these opportunities do not rest solely with K-12 school librarians. Data collected in the study suggest several potential areas of opportunities for others with some level of involvement with school libraries and school librarianship.

More than one survey respondent indicated that he/she would have appreciated exposure to concepts related to serving students with special needs during matriculation through their Master's level preparation program. This idea was also conveyed in Franklin's (2011) article about the importance of preparing pre-service school librarians to serve students with special needs. Students enrolled in a school library certification program who served as study participants believed that school media programs should include a full course, or at the very least readings and assignments to specifically address methods for serving students with special needs in the school library. Data presented in the former study and current investigation indicate that an opportunity exists for the colleges and universities responsible for preparing school librarians to implement changes in curriculum to include education about the role that librarians will play in educating special learners in the K-12 environment.

A majority of the survey respondents both currently receive and prefer to receive information about best practices to use with students with special needs from special education personnel. Fewer librarians receive or prefer to receive this information through their schools or school districts. This presents an opportunity for building level administrators and school districts to offer professional development seminars led by special educators (from within or outside the school or district) that expose school librarians to best practices for strengthening their service provision to students with special needs.

Conclusion

School librarians are innovative information specialists who are capable of serving students of all ability levels. Data analyzed for this study were collected from a selection of individuals so small that the results cannot be generalized across populations. Additional research must be done to collect data from a statistically representative sample of school librarians. However, the results of this study can be used to infer potentially useful methods for assisting school librarians in ensuring that – in the words of one respondent – “students with special needs have equal access to materials and instruction.”

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iRead, iWrite, iLearn: Teaching Strategies to Facilitate Language Development with English Language Learners in the Elementary School Learning Commons

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ABSTRACT

The latest United States Census Bureau report shows a decade of rapid minority growth in all southeastern states. The numbers paint a compelling portrait of the metro Atlanta area and the state of Georgia becoming increasingly diverse. The number of foreign born residents increased significantly between 2000 and 2010, immigrants from Latin America, Africa and Asia making up the majority of new residents. In order to meet the needs of this special population schools should secure unique resources and creative teacher-librarians must consider modifying current professional practices. The presenter at the Treasure Mountain Research Retreat will share Georgia State University's Department of Library Media Technology's selected course components designed to prepare elementary school teacher-librarians to work with ELL students in an elementary school learning commons.

*"You better start swimmin'
 Or you'll sink like a stone
 For the times they are a-changin'"*

Bob Dylan

The 2010 United States Census revealed numbers showing impressive growth in both Hispanic and Asian residents in many states. In all, racial and ethnic minorities made up about 90 percent of the total U. S. growth since 2000, part of a historic trend in which minorities are expected to become a majority by midcentury ("Census", 2011). In recent years, English Language Learners (ELLs), students "who come to school

speaking a language other than English and who have little or no proficiency in English," have enrolled in U. S. schools in growing numbers (Cloud, et. al. 2009, 2). According to the U. S. Department of Education (2006), limited English proficient students represent the fastest-growing student population with 5.4 million currently in the United States. The number is expected to increase to one of every four students by 2025.

All told, the state of Georgia saw a surge in minorities: The Hispanic population grew 96.1 percent, followed by an 81 percent increase in Asian residents ("More Seats", 2011). Hispanic residents are now 853,689 strong in Georgia, 8.8 percent of the total population and the fastest growing demographic in the state. The increasing enrollment of students who do not speak English as their first language challenges schools to provide programs and materials to address the unique needs of this special population.

A growing number of children entering U.S. schools are experiencing difficulties learning to read and becoming literate because they are not native speakers of English. When addressing the specific educational needs of English language learners, educators have debated whether instruction should be primarily in the student's native language or in English and when to make a transition from bilingual to English-language-only classrooms. A more crucial issue, however, is how to merge English language instruction with subject matter instruction (Greenwood, 2001). The question is how to successfully design instruction that develops literacy skills in English while at the same time promoting second-language acquisition. Arreaga-Mayer (1998) describes features of effective instruction. These include implementation with heterogeneous groups, promotion of high levels of student engagement; activation of higher-order cognitive processes; opportunities for students to engage in extended English discourse; applicability to small and class wide groups; social acceptance by teachers, students, and parents; and respect for cultural and linguistic diversity. Consequently, combining effective instructional interventions with features of language-sensitive teaching appears to maximize opportunities for ELLs to become literate.

Rance-Roney (2010) notes that it is critical that we seek innovative and effective skill improvement approaches that increase the rapidity of content literacy development for ELLs while simultaneously developing the four language skills of writing, reading, listening, and speaking. Teacher-librarians are in positions within their schools that allow them to work collaboratively with teachers to address these language skills, playing pivotal roles in working to effectively meet the educational needs of the many linguistically and culturally diverse children in American classrooms. York (2008) observes, "Chances are good that the majority of school librarians and media specialists have worked with or will work with students who have limited or no English language background." (p. 26) The professional roles of elementary school teacher-librarians serving ELLs, suggested resources and programming for the school library and age-appropriate available technology applications to support English-language acquisition by this special population will be discussed in the conference presentation.

The role of the teacher-librarian in standards-based education

The American Library Association (ALA) and American Association of School Librarians (AASL) have made clear statements about the importance of instructing students, identifying student information needs, and fostering a community of lifelong learners. AASL's *Standards for the 21st-Century Learner* notes that today's learners must use skills, resources, and tools that equip students to do the following: 1.) Inquire, think critically, and gain knowledge, 2.) Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge, 3.) Share knowledge and participate ethically and productively as members of our democratic society, 4.) Pursue personal and aesthetic growth (AASL, 2007).

By addressing these important standards, the teacher-librarian can be instrumental in gathering the resources needed to not only provide direct support for immigrant students learning English, but to also work closely with ELL educators to help the students bridge the educational gap (Armour & Corona, 2007). American Association of School Libraries President Cassandra Barnet says, "With such high concentrations of ELLs in our schools, school library media specialists (teacher-librarians) are in the unique position to make significant contributions to this unique student population. Clearly resources, both in materials as well as certified and trained school library media specialists, can greatly impact the success of English language learners." (Barnet, p. 2)

The changing environment: From school library to learning commons

Rapidly evolving technologies have given rise to a debate among professionals about the very nature of a traditional school library. For generations, the school library has housed shelves and shelves of books to serve the reading and research interests of students. However, today's digital natives have grown up with laptops, tablets, smart phones, and a world of information only a click away. Students are increasingly expected to express their understanding using images, video, and animation in addition to plain text (Regan, p. 10).

The concept of a school library is evolving from a repository for books to a center for learning or "learning commons," an area within a school that serves the needs of the 21st-century learner. Why does our school need a library when we have access to so much information from our classrooms via the Internet? What does this new learning commons look like? Waskow (2011), notes, "These have been leading questions for almost a decade, and nationally recognized professionals have explained that it has yet to be defined, much less described" (p. 8). Architect Doug Westmoreland describes the new library for Glen Allen High School in Henrico, Virginia by saying,

The design committee's consensus noted that they wanted a space with a "Barnes and Noble" atmosphere where students wanted to be. The desire for more informal and casual functions is critical. A completely open environment

was required for supervision and flexibility, but the larger space in the library needed to be defined by the architecture to create smaller, different environments. Formal classroom instruction was created in one corner, with a less formal instruction area in the diagonal corner, separated by low book stacks. Informal areas are created in several locations – near the large windows in the center of the library and in the quieter area adjacent to the circulation desk. Four types of displays – laptop, LCD large screen monitor, interactive white board, and projection – are provided for group or individual learning opportunities. (Martin, Westmoreland, Branyon, 2011).

Cushing Academy in Ashburnham, Massachusetts sparked heated discussion within the profession when it dramatically redesigned its library into a radically different learning commons beginning in 2007 (Corbett, 2011). More and more schools and teacher-librarians have begun the discussion to transform the traditional library into a facility that better meets the needs of 21st century learners.

Georgia State University's Department of Library Media Technology's focus on training future teacher-librarians to work with ELLs in an elementary school's learning commons

Georgia State University's Department of Library Media Technology (LMT) has historically been a leader in training award-winning media specialists for service, not just in metro Atlanta's schools, but throughout the state. Faculty in the department annually conduct an internal review of required standards, course offerings, assignments and assessment procedures to ensure that each graduate is prepared to meet the needs of all students in public and private schools, PreK-12.

The following LMT course descriptions, assignments and examples provide the reader with some examples of the instructional methods and outcomes that specifically serve ELLs in the elementary school:

➤ Suggested resources for the elementary school library to assist ELLs

ELMT 7020 – Selection of Print and Non-Print Resources

Course description - The course focuses on the processes, services, and criteria for the selection of various material formats. The teacher-librarian evaluates and selects materials for the collection to support the academic goals of the school as well as provide access to materials for personal growth and pleasure.

Assignments - Students select from three very different school demographics to compile a bibliography of suggested materials. One of the fictional schools serves an immigrant population of sixth graders recently arrived from China, Korea and Japan. Students are given a budget of \$3,500.00 to compile an annotated list

of 50 fiction books (including ebooks), 30 non-fiction books (including 10 ebooks), 5 periodicals and 5 electronic resources/databases.

ELMT 7250 - Survey of Literature for Children

Course description - The course provides a survey of literature for children, including selection of multicultural resources and integration of literature into the curriculum.

Assignments - Students compile a database of 100 books, including bilingual picture books, multicultural/international fiction books and folklore/myths/fables and legends from other cultures. Students also play "Lingo," a self-designed game that introduces students to Spanish phrases to encourage teacher-librarian, Spanish-speaking child interaction.

Examples -

- Bilingual picture books - Barbieri (2002) notes that saturating students with bilingual literature, picture books, age-appropriate technology, and nonfiction texts, will make English acquisition more desirable, more joyful, and easier. Such books should affirm the student's culture and be reflected positively in both words and pictures. Dickinson & Hinton (2008) remind teacher-librarians to use valid and responsible vendors when buying international materials to ensure the materials are authoritative and accurate.
- Simple English language picture books - Muchisky (2007) observes that perhaps the most important acquisitions for the library collection are good-quality multicultural books, especially picture books. Moorefield-Lang, Anaya and Shirk (2010) concur, noting "With everything from low-level picture books to age- and grade-appropriate books, ELL students can choose books that fit their own levels of reading and move up as they are ready." (p. 23)
- Hi-lo books for older readers - Upper elementary students should have these books available as they are much more age-appropriate.
- Big books (www.teacherbigbooks.com) - Oversized books are important tools for emergent readers, shared readers and those learning a language.
- Wordless picture books - Help students who are just learning to read practice storytelling in their home language and in English.

➤ Programming for the elementary school library to assist ELLs

ELMT 7410 - Administration of Library Media Centers

Course description - The course focuses on the principles of management necessary for successful administration of a library media program.

Assignment – Students visit three different assigned media centers/learning commons during the semester. One school must be a Title 1 school serving a significant immigrant population. The subsequent written and oral reports include specific programming ideas the media specialist employs to work with this special group of children.

Examples –

- Literature-inspired creative expression - Hosli (2000) discusses the use of intermodal learning activities with limited English proficient children. The author encourages the natural use of the different art disciplines of visual art, music, dance, literature, and reader's theater. This also provides the teacher-librarian an excellent opportunity to work collaboratively with teachers of these special subjects.
- Parent/grandparent nights in the school library - Invite extended families to visit the school to see the progress their children have made. Showcase books, art, music, and technology the students have been using to learn their new language.
- Book clubs and literature circles - ELLs develop confidence through participating in a verbal exchange where they can discuss books in a relaxed setting. Encourage students to bring prewritten notes to meetings. This will give students practice writing in English and may make them more comfortable when speaking. (Blair, et al, 2011). When children and youth engage in conversations with peers and adults about texts they have read, they become more aware of their own beliefs, their learning, and the learning process. (Moreillon and Cahill, 2010).
- Morning announcements via closed-circuit TV - Include ELLs by having them tape book reviews, poetry readings, songs or mini-lessons about their countries. Taping in advance will lessen the anxiety to have perfect English and give them the opportunity to edit their final presentation.
- Student-produced materials - The teacher-librarian should consider working with the children to produce graphic novels or comic strips illustrating the story. Books can be cataloged and checked out to other students through the library's Online Public Access Catalog (OPAC).
- "Family Treasure" booklets - Using objects of cultural and personal relevance that the children brought from home, stories can be generated from the original telling in the student's native language into English in small-group contexts, transcribed, illustrated, and uploaded to a Web site for permanent sharing, rereading, and exchange. These booklets provide an opportunity for identity formation, pride of family and culture, and the acquisition of rudimentary technology skills, which all work to motivate and engage young learners in the development of early literacy (Roessingh, 2011).

➤ Technology applications for the elementary school library to assist ELLs

ELMT 7370 - Principles of Instructional Collaboration

Course description - The course assists students in the study and application of instructional collaboration with classroom teachers. The class also explores the role of the school media specialist in addressing required standards and in authentic assessment.

Assignment - Students are required to design a 21st-century learning commons. Part of the design includes a pathfinder of sites visited that both inspired and instructed the student in his/her subsequent project. Students submit not only a written paper and design concept, but also present the project to peers using creative technology.

ELMT 8390 - Principles of Video Technology**ELMT 7150 - Technology for the 21st-Century Media Center**

Course description (ELMT 8390) - The course provides students with the theoretical foundations and practical production experience in the utilization of video technology as an instructional tool

Assignment - Students work collaboratively with a classroom teacher to produce a video showing some aspect of cultural and /or multicultural awareness. For example, an immigrant student will interview his grandfather about his childhood in his home country. The videos will be edited and "premiered" at a special school open house in the learning commons.

Course description (ELMT 7150) - This course introduces the design and production of instructional materials as related to current theories of communication, and includes video, computer presentation, and production applications.

Assignment - Students present examples of new 2.0 learning technologies to peers and, using appropriate state standards, work collaboratively in class to produce lesson plans using a selected technology. The lesson plan is flexible and is designed to meet the needs of ELLs, gifted students, and/or students with learning disabilities.

Examples -

- DVDs in both the home language with English subtitles and in English with home-language subtitles - These encourage students to develop their literacy skills in one language while making connections to the other spoken language (Blair, et al, 2011).

- Mp3 players or other audio devices - *Playaways* (prerecorded mp3 players) are also valuable so that students can listen to all required texts while they read so that students can listen while they read since students can understand spoken English before written English (Adams, 2010).
- *iPods* and *iPads* - Using either of these devices as a delivery method is a natural fit for a teacher-librarian as they are tools for a collaborative venture with classroom teachers and provide an enticement to engage teachers with the library skills curriculum. Podcasts, pronunciation recordings and language exercise can then be used at any time by any user (Patten & Craig, 2007). Valuable free or inexpensive downloadable applications for the iPad include *TranslateIt*, providing one-click translations of text from one language to another and *Notes 'n More*, which allows students and teachers to generate to-do lists, notes, voice memos, pictures and videos and then collect the disparate file types into folders. Such a program can provide a valuable aid to serve as a digital graphic organizer.
- iMovie or Movie Maker - Students can write, produce and edit presentations by collaboratively using their English skills.
- Pathfinders or *Webquest* (www.webquest.org) - Lists of valuable websites can be prepared by the teacher-librarian and made available to the ELL for easy reference.
- *Flip* video - (www.theflip.com) - This relatively inexpensive, easy-to-use video camera will have ELLs and other students clamoring to have their voices heard.
- *Kindles*, *Nooks* and other e-readers - Allow for the easy download of e-books and, not only are searchable, but can provide read-along audio.
- *Doodle Buddy* and other computer-aided drawing programs - Bermudez & Palumbo (1994) discuss the importance of using emerging technologies and updated information to enhance literacy education for ELL students. The authors conclude that levels of fluency, knowledge, motivation, and interest can be addressed individually through the use of age-appropriate technology applications.
- *TeacherWeb* (www.teacherweb.com) or *Weebly* (www.weebly.com) - Add an ELL section with links to online translators, dictionaries, and foreign newspapers to the library's Web page. Create a link to the International Digital Children's Library (<http://en.childrenslibrary.org/>) where students can read books in more than fifty languages (Adams, 2010). The webpage can also allow students to showcase book reviews.
- *Animoto* (www.animoto.com) - Can be used instead of traditional book talking to hook ELL students by integrating media into language learning (Collins, 2010).
- *Prezi* (www.prezi.com) - Software that creatively goes beyond PowerPoint's presentation capabilities.
- *Moodle* (www.moodle.org) - Enables students to meld great literature and the power of Web 2.0. Using this site, ELLs can collaborate about content, research information, create online projects and converse with those from unfamiliar cultures.

- Glogs (www.glogster.com) and online posters - Integrate text, photos, audio and video encourage creativity while helping ELLs organize and present concepts in English.
- Skype (www.skype.com) - Allows students to connect various school communities using live communication through computer-to-computer phone calls. Encourages language exchange through a global community.
- Computer programs to be discussed and demonstrated in the IETC conference presentation will include: *Book Box*, *Tikatok*, *Sound Stories*, *Create Your Own Scenario!*, and *Bunny Stories for the i-Phone*.

Students need culturally responsive teacher-librarians who focus on 21st century skills for all students, including immigrant students learning English. Basic principles for culturally responsive leadership in school libraries are articulated by multicultural educators who know that social equity is more important than ever, as the number of diverse and underserved students increase each year. Ethnicity, race, disability, gender, language and socioeconomic status define diverse students who enter school libraries every day. Since teacher-librarians interact with *all* students within a school, it is a natural fit to look toward our school library personnel to model culturally responsive leadership for educators within their school and communities (Summers, 2010). Teacher-librarians must focus on enhancing their professional competencies and promote positive intercultural interactions between students in order to create the best learning environment in the 21st century. The faculty of the Department of Library Media Technology at Georgia State University is dedicated to training future teacher-librarians who meet the needs of all students in a school's learning commons.

At a recent National Council of Teachers of English (NCTE) conference in St. Louis, Maya Angelou spoke about teachers. "Unless we recognize that all children are our children," she said, "we are missing the point." The lives of teachers in the United States are enriched by working with students and families from diverse cultures. Immigrant children bring a rich cultural and linguistic heritage to American elementary schools. The elementary school teacher-librarian is in a unique position to provide resources, programming and appropriate technology to support English language acquisition by these special children.

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An Exploration of the Special Services that School Librarians Offer to Teachers of Students with Autism and ASD

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Abstract

The purpose of this study was to explore the type of special services school librarians provide to teachers of students with autism and ASD and the impact of different variables on the provision of these services. A mixed-method research design was implemented by using an online survey developed by the researchers. The study findings indicated that a majority of school librarians do not provide special services to teachers of students with autism and ASD. In addition, school librarians who are mentors, or have a graduate degree, or a degree in librarianship are more likely to provide special services.

Introduction

Thirty-four years ago, Eliza Dresang (1977) wrote an article entitled, "There Are No Other Children." This article, which discusses services to exceptional students, is considered to be a seminal work in the field of school librarianship. The content is over a quarter of a century old, yet the words remain timeless as their advice continues to be effective for today's school librarians.

In the article Dresang argues, "any type of educational program must be developed from an understanding of the needs of the children" (p. 20). Dresang further states that school librarians "must look at every child, at every need, and at every program in the school and then make across-the-board revisions in the library/media center program. They must be inventive and skillful managers of time and resources and learn to look at familiar programs in new ways" (p. 20).

Today Dresang's words are all the more relevant due to the increase in the number of children who are diagnosed with autism or autism spectrum disorders (ASD). Autism Speaks (2011) has reported disturbing statistics such as 1 in every 110 children in the United States has autism or ASD. Boys are more likely to have autism or associated disorders with the disease manifesting in itself in 1 in every 70 boys. At the same time, it is estimated that 1.5 million people in the United States have autism or ASD, while even more daunting is the report that 1% of the world's population or 67 million people have one of these disorders. This means that people with autism or ASD disorders outnumber the

combined occurrences of AIDS, cancer, and diabetes (Committee on Foreign Affairs, 2011).

In response to these statistics, the United States government has taken action to address the increase in autism by forming the bipartisan House Coalition on Autism Research and Education (CARE). The coalition recently held an international hearing to determine how experts throughout the world can collaboratively research the causes of the disease as well as how to increase awareness of its existence (Committee on Foreign Affairs, 2011). Promotion of autism awareness is essential because the symptoms of the disease can go unnoticed and even misdiagnosed.

According to the National Institute of Mental Health (2011), there are no two cases of autism spectrum disorders that are exactly alike. Since the disease has varying levels of severity, the dramatic variances in the cases can make it difficult to diagnose a child. Symptoms can include problems with communication, fascination with particular subjects, and repetitive behaviors. Special education teachers, regular education teachers, and school librarians should be aware of these potential indicators for autism when interacting with students. Understanding how to recognize the disease, communicating with diagnosed students, and collaborating to differentiate instruction for these students can mean the distinction between overlooking a growing population of exceptional students and empowering students with the foundational skills needed to be self-sufficient.

All of this would indicate that school librarians are undoubtedly in a position to provide services that can change the educational outcomes of students with autism and ASD. Yet, a crucial question remains. What are school librarians doing to address their ability to provide these services? It is realistic to believe that school librarians may not have extensive access to students with autism and ASD because of barriers such as time (McCracken, 2001), perceptions of school librarian expertise (Hartzell, 2002), and the inclusive environment in which students with severe cases of autism might be taught (National Center to Inform Policy and Practice in Special Education Professional Development, 2010).

However, a fundamental way to reach these students and impact their academic success is to build a relationship with their teachers. This research was designed to explore the type of special services school librarians provide to teachers of students with autism and ASD, and the impact of various variables on the provision of this service. The variables included years of experience as a school librarian, years of experience as a classroom teacher, the current grade level of a school, an earned graduate degree, an earned degree in librarianship, gender, and service as a mentor.

Literature Review

The Challenges of Special Education Teachers

In a brief provided by the National Center to Inform Policy and Practice in Special Education Professional Development (2010), it was posited that new special education teachers face a variety of challenges. Along with becoming acclimated to new school environments, novice special education teachers face challenges with inclusion and collaboration. This observation is supported by research (Gersten, Keating, Yovanoff, & Harniss, 2001; Pugach, Blanton, Correa, McLeskey, Langley, 2009).

In general, special education teachers are expected to build relationships with the school community. This includes parents, administrators, paraprofessionals, and other teachers. Most importantly, special education teachers must make sure that their students have access to the general education curriculum. This mission is legally mandated by the Individuals with Disabilities Education Act [IDEA] (U.S. Department of Education, 2004), which requires that exceptional students be educated in the least restrictive environment that meets their needs. However, special education teachers must first be accepted by the school community and negotiate with other teachers to promote inclusion (Buell, Hallam, & Gamel-McCormick, 1999). This can be daunting when regular education teachers resist the inclusion of exceptional students.

In addition to the attitudes of regular education teachers, special education teachers contend with communication challenges (National Center to Inform Policy and Practice in Special Education Professional Development, 2010). For example, isolation occurs when special education classrooms are placed in physical locations away from other classes. Communication is also hampered by heavy caseloads, because special education teachers are assigned to multiple teachers and students. These assignments make it difficult for such teachers to participate in meetings and professional development.

The multiple challenges experienced by special education teachers require multiple support structures to change school norms. Several types of support structures have been suggested. For example, regular education teachers with negative perceptions of inclusion can be provided with professional development (Monahan, Marino, & Miller, 1996). Similarly, special education teachers should be provided with ongoing learning opportunities to update their teaching and collaboration skills. Mentors are an effective way to acclimate them to their environments (Pugach, Blanton, Correa, McLeskey, & Langley, 2009). Finally, principals who support special education teachers are an essential part of creating positive environments for the inclusion of exceptional students (Gersten, Keating, Yovanoff, & Harniss, 2001).

The Similarities of School Librarians and Special Education Teachers

Based on the challenges faced by special education teachers, it is unmistakable that school librarians experience many of the same challenges as special education teachers. According to Downing (2006), both professions have experienced great changes in responsibility over the years because of the trends in education calling for the inclusion of special needs students in general education courses (U.S. Department of Education, 2004) and accountability in teaching practices (U.S. Department of Education, 2002). Because of this trend, special education teachers are required to collaborate with regular education teachers just like school librarians. Hence it is necessary for school librarians and special education teachers to embrace collaboration in a proactive manner.

School librarians are also similar to special education teachers, because they are required to work with multiple teachers, administrators, and parents. Both are required to exhibit exceptional communication skills to ensure the delivery of services. Hence their ability to successfully complete their jobs requires them to navigate multiple personalities, build relationships, and convince other teachers of the importance of their expertise. Like special education teachers, librarians must contend with immense workloads and scheduling issues that can impede their ability to communicate and collaborate with other teachers (McCracken, 2001).

The need for school librarians to communicate and collaborate is closely related to another characteristic that the fields share. School librarians and special education teachers have similar diversity goals. Both professions are advocates for equal rights. In general, all educators must support students because of laws such as IDEA (U.S. Department of Education, 2004). Additionally, school librarians follow guidelines such as the Library Bill of Rights (American Library Association, 1996) and Empowering Learners: Guidelines for School Library Media Programs (American Association of School Librarians, 2009), which support empowering individuals to ensure equal access to information.

The final similarity reflects principals who are able to influence how school cultures support diversity. Principals also play an important role in how school librarians are accepted in schools (Hartzell, 2002). As with special education teachers, principals can set the tone of how teachers, parents, and paraprofessionals interact with school librarians. This is because principals control school library budgets, scheduling, and ultimately the type of leadership roles that are assigned to school librarians. All of these factors influence the perception of how a school library program is valued.

Collaboration Between School Librarians and Special Education Teachers

It is evident that there is great potential for collaboration between school librarians and special education teachers because of the similarities between the professions. School librarian professional literature (Downing, 2006) and research (Farmer, 2009) support the notion. Yet Canter, Voytecki, Zambone, and Jones (2011) note that there has been a lack of collaboration between the professions. Murray (2002) remarked that there is also a need to improve the quality of collaboration between school librarians and special education teachers. In fact, it was reported that a considerable number of school librarians that participated in Murray's study did not offer extra service for teachers of students with disabilities.

In addition to extra services, Murray (2002) further noted that the participants of the study could have improved the quality of their services by communicating with special education teachers. Likewise, Murray asserts that school cultures and principals are a contributing factor to the lack of collaboration and communication between school librarians and special education teachers (Murray, 2000). When principals support collaborative cultures, school librarians are more likely to be informed of who special education students are and their needs. Knowledge of these students is vital; because school librarians can help special education teachers achieve a very important goal. School libraries provide an inclusive environment where special-needs students can access a variety of resources in an individualized environment (Zambone, Smith Canter, Voytecki, Jeffs, & Jones, 2009). "Nondisabled children, walking into the school library, see students with disabilities working with learning tools (a computer perhaps), and this creates a situation in which the two children may interact on an equal level, without the baggage that accompanies stereotypes" (Murray, 1995, p. 113).

Methodology

Population

The researchers solicited responses for the survey on school librarian state organization message boards and listserves such as LMNet and AASL Forum. In addition, an invitation to participate in the study was emailed to a list compiled by the researchers of 1,000 school librarians using online school directories. As a result, the purposive sample for this study is comprised of 508 current school librarians. See **Table 1** for a summary of the demographics.

Table 1: Demographics	
Variable	Percentage
Gender	
• Female	95
• Male	5
School Grade Level	
• Pre-K- Elementary	40
• Middle	19
• High	25
• Combination	16
Years of School Librarian Experience	
• 0-4 years	22
• 5-9 years	23
• 10-14 years	22
• 15 or more years	33
Years of Prior Teaching Experience	
• 0-4 years	20
• 5-9 years	19
• 10-14 years	11
• 15 or more years	12
• Not applicable	38
Currently Mentoring	
• Yes	10
• No	90
Have a Graduate Degree	
• Yes	81
• No	19
Degree in Librarianship	
• Yes	72
• No	18

Data Collection and Analysis

A mixed-method design was implemented by using an online survey. This methodology was chosen in order to gain a better understanding of the characteristics of school librarians who provide extra or special services to teachers of students who have autism spectrum disorders. The survey collected demographic data. In addition, the participants were asked if they provided special services to teachers of students with autism. Participants that answered yes were also asked to describe the type of special services they offer.

SPSS software was used for the quantitative analysis of Research Question 1. Chi-square tests were performed to identify relationships between the demographic variables and the provision of special services. Research Question 2 was answered by using the software Nvivo to identify themes in the types of services that the participants reported.

Findings

Research Question 1

The analysis for Research Question 1 revealed that 65% of the school librarians who participated in this study do not offer special services to teachers of students with autism. The chi-square tests that were performed revealed relationships between demographics and the provision of special services. For example, there were no relationships between the provision of special services and the following variables: years of experience as a librarian, school grade levels, years of teaching experience prior to becoming a school librarian, and gender. The following relationships between demographic variables and the provision of services reveal the characteristics of school librarians who provide extra services to teachers of students with autism:

- An association between the provision of special services and graduate degrees was found, $\chi^2(1, N=503) = 5.2, p = .02$. Participants with graduate degrees were more likely to provide special services than those who did not have one.
- An association between the provision of special services and mentoring activities was found, $\chi^2(1, N=499) = 13.9, p = .000$. Participants who engaged in mentoring activities were more likely to provide special services than those who did not.
- An association between the provision of special services and a degree in librarianship was found, $\chi^2(1, N=502) = 3.9, p = .04$. School librarians with a degree in librarianship are more likely to provide special services than those who do not have one.

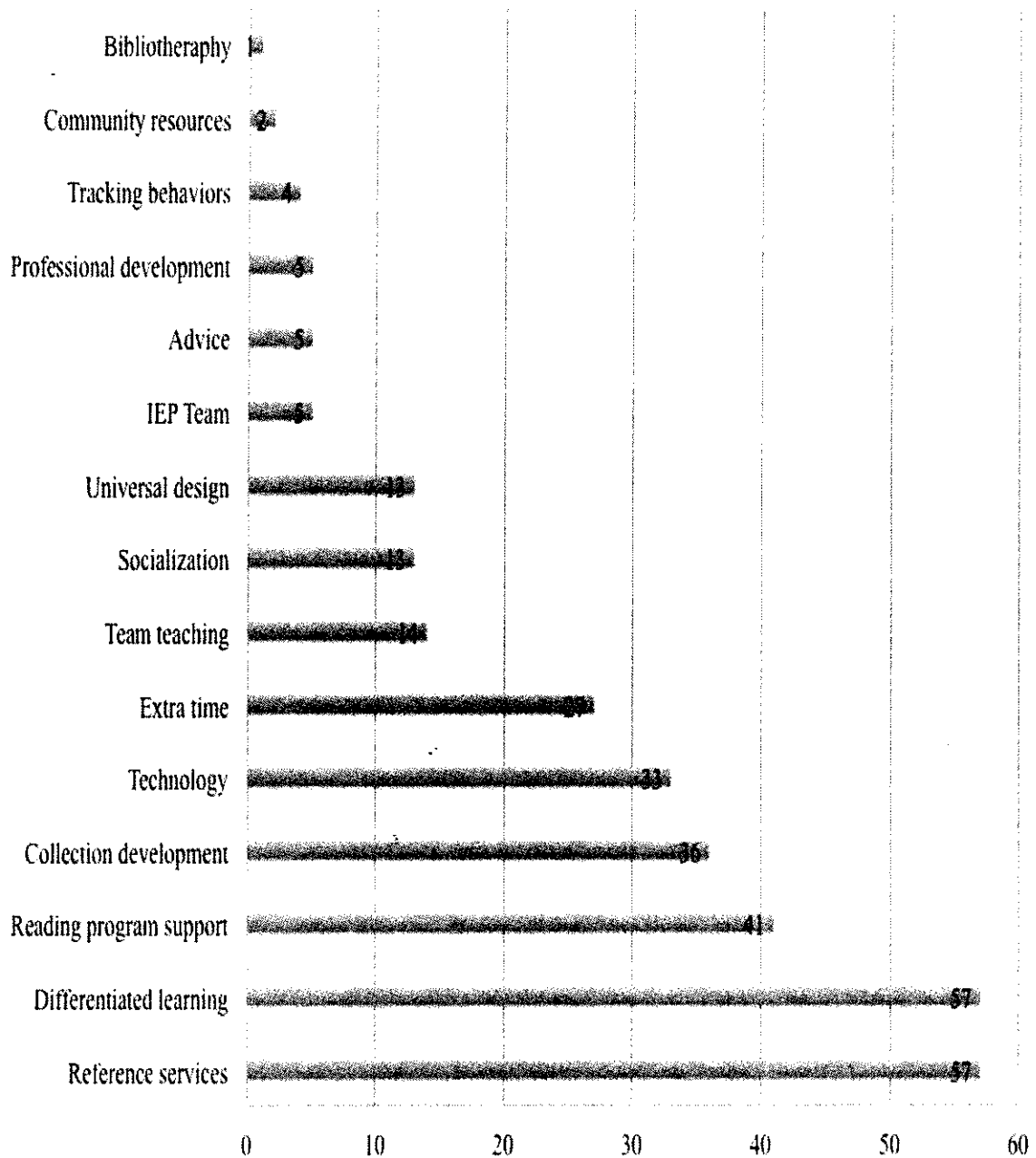
Research Question 2

One hundred fifty nine respondents shared information about the types of special services they provide to teachers of students with autism. Fifteen themes emerged from the explanations. Figure 1 is an overview of these themes. The themes were as follows:

- Reference services: conducting requested research to find print and electronic materials to support student learning
- Differentiated learning: adapting lessons and materials for the students in the library

- Reading program support: offering students books to check out and providing story times
- Collection development: choosing materials that will support student learning objectives
- Technology: providing technology that will assist teachers with delivering instruction
- Time: allowing the teachers and their students extended time in the school library
- Team teaching: collaborating with teachers to teach lesson plans
- Socialization: including students in learning opportunities, providing a safe haven, as well as allowing students to work as aids to practice work skills
- Universal design: designing the school library environment to be accessible for all students and providing a safe haven for them
- IEP team: participating on the Individual Education Plan (IEP) team and assisting with the implementation of the plan
- Advice: sharing strategies for adapting instruction
- Professional development: providing professional development about resources and technology to the teachers
- Tracking behaviors: assessing student behaviors and their learning outcomes to determine their progress towards learning objectives
- Community resources: sharing community resources that might assist teachers with instruction
- Bibliotherapy: using books as a form of therapy for students

Figure 1: Frequencies of Services Provided to Teachers of ASD Students



Suggestions, Recommendations, and Implications

The observations made in this study have yielded information about the relationship between demographic variables and the provision of services to teachers of students with autism and special education teachers in general. This paper offers suggestions regarding the services school librarians can provide to teachers of students with autism or ASD, the professional development of teachers of students with autism or ASD, and the professional development

needs of school librarians. Finally, there are implications regarding the school librarians' leadership role and how school librarians can improve collaborative relationships in schools.

Research Question 1

The norm for providing special services.

The findings of Research Question 1 have many implications. First, the variables that did not have a relationship with the provision of special services reveal just as much as those that do. When considered with the percentage of school librarians that report that they do not provide special services, there is an indication that the prevailing behavior among school librarians is to resist providing more services to special education teachers than regular education teachers. This might be the norm because many school librarians feel that all of their services are tailored to meet the needs of individuals. Therefore, there is no need to treat special education teachers differently. Other possible explanations for this behavior include a lack of time to engage in collaboration (McCracken, 2001), negative perceptions of the services school librarians can offer (Hartzell, 2002), and a general lack of communication between school librarians and special education teachers (Canter, Voytecki, Zambone, & Jones, 2011).

Therefore, these findings coincide with Murray's (2002) research that indicates that most school librarians do not offer extra services to special education teachers. The results also coincide with the assertion that better services need to be provided to support special education students (Murray, 2002). Naturally, one of the ways to support special needs students is to provide information and assistance to their teachers.

Highly trained school librarians.

The results of the analysis for Research Question 1 also concur with Baumbach's (2003) research that demonstrates that school librarians who are highly trained provide better support to their schools. While the school librarians without graduate degrees who participated in this study are likely to understand basic services, they may need additional training. This conclusion has been made because librarianship was offered as a Bachelor's degree for years. However, a graduate degree in librarianship has become the norm.

Many participants in this study have more than ten years of service and previous experience as teachers. These librarians may have obtained their degree before the norm was to have a graduate degree in librarianship. Furthermore, they may have obtained their undergraduate degrees before the diagnosis of autism and

ASD became prevalent. These librarians may find it difficult to determine how to provide additional services because of their lack of understanding of ASD.

Moreover, school librarians in states such as Florida are able to receive certification without obtaining a graduate degree or a degree in librarianship. These school librarians may not be aware of the extensive strategies for administering school library programs. Consequently it appears that school librarians who do not have a degree in librarianship or a graduate degree should be encouraged to participate in professional development to improve library services to special education teachers such as those assisting students with ASD.

School librarians as mentors.

School librarians who were serving as mentors were also more likely to provide special services to teachers of students with autism. One explanation for this finding is that mentoring is a leadership activity (Kouzes & Posner, 2007). Individuals who are leaders seek opportunities for improving their organizations. Leaders are also risk takers who are inclined to change norms (Conner, 2006; Kouzes & Posner, 2007). Therefore it can be concluded that the school librarians who are mentors see providing additional services to teachers of students with autism or ASD as a mentoring or leadership opportunity that will improve the overall success of their schools.

This study also indicates that school librarians can reduce some of the challenges of special education teachers by serving as their mentors. Many school librarians are qualified to serve as mentors for new special education teachers because of their previous experience as classroom teachers and the similarities in professional challenges that school librarians and special education teachers share. As former classroom teachers (Everhart, 2002), many school librarians are aware of the concerns of regular education teachers and strategies that might be used to collaborate with them.

Research Question 2

Community resources and collection development services.

The results of Research Question 2 also have numerous implications. For instance, the responses to this open-ended question indicate that school librarians naturally gravitate toward providing more detailed reference services to teachers of students with ASD. Though a smaller number of participants mentioned collection development, they are collection development experts because of the nature of their jobs. Perhaps one strategy to improve services to special education teachers such as those serving students with ASD would be to

embed information about community resources into online card catalogs, the physical collection, and electronic pathfinders.

It can be argued that providing this type of assistance is not beyond the scope of duties. The "Information and Knowledge" standard in the ALA/AASL Standards for Initial Preparation of School Librarians (2010) notes that school librarians should engage in research and knowledge creation in order to support diversity in learning. Distributing information about community resources falls within the guidelines of this standard; however, only two school librarians said that they connect teachers with community resources outside of the school.

Collaborative activities.

Some participants remarked that they differentiate instruction when students visit the library. Participants often solicit information from teachers about students in order to differentiate the lessons. Unfortunately, just fourteen of the participants said that they team-teach. Five said that they give advice to teachers about teaching strategies, and another five said that they participate on IEP teams. Four responded that they track behaviors. These are all collaborative activities.

These findings coincide with Canter, Voytecki, Zambone, and Jones' (2011) assertion that there needs to be more collaboration between special education teachers and school librarians because of the low frequency of responses in some categories. The results indicate two things. First, most of the participants do not use collaborative activities to display their expertise. It is fine to request information about students, but school librarians also should be able to give information to the teachers based on their own experiences and expertise. School librarians are not special education teachers. However, they do possess a skill set that can complement the activities that teachers offer inside of the classroom.

Next, the results indicate that there is still a need to emphasize the importance of collaboration during professional development and training programs for school librarians. This is important because the "Teaching and Learning" standard, which includes collaboration, is identified as the highest priority in the ALA/AASL Standards for Initial Preparation of School Librarians (2010). It is obvious that school librarians understand the need for differentiated instruction and can offer strategies for assisting students with ASD. Perhaps more school librarians and special education teachers would collaborate if they understood the similarities in their positions, the benefits of having an advocate within the school, and the skill set that is present within each area of expertise.

Bibliotherapy as reading program support.

Reading program support is an obvious way for school librarians to supplement classroom instruction. Bibliotherapy could work well with reading program support. Nonetheless, only one participant mentioned bibliotherapy. The researchers speculate that the lack of responses regarding bibliotherapy may be caused by a lack of time to engage in such services or a lack of understanding of bibliotherapy. School librarians should be provided with more professional development in this area that is closely related to reading program support. It is a service that all teachers may be interested in if school librarians are vocal about their ability to provide it. This service also coincides with the "Literacy and Reading" standard of the preparation standards (AASL, 2010) in which school librarians are encouraged to address the needs of diverse learners through various reading instruction strategies.

Technology and professional development.

A popular service offered to teachers of ASD students was connecting them with technology. Only five participants said they deliver professional development. These results imply that school librarians are adept at identifying new technologies, but a majority are not sharing their skills with the teachers of autistic students who may need to learn about Web 2.0, assistive technologies, and adaptive technologies. It seems that the school librarians who participated in this study assume that special education teachers are already aware of how to use the technology they present to them.

Since technology is an area in which school librarians are already informed, technology professional development is a way for them show leadership skills and connect with teachers (Smith, 2010). School librarians should provide technology professional development because there is evidence that students with autism, like many exceptional students, benefit tremendously from technology (Kroth & Edge, 2007; Myles, 2009). Consequently, instructing their teachers on strategies that incorporate technology has the potential to increase their information literacy skills and academic achievement.

The school library environment.

It is difficult to speculate on why only thirteen people said that they apply universal design principles to the school library. Perhaps it is because universal design has become an ingrained part of school buildings. Nonetheless, school librarians must actively ensure that proper shelving, assistive technology, and other aspects of design are incorporated.

These results indicate that an understanding of universal design principals might be an area of deficiency for practicing school librarians. Universal design was barely mentioned, but the participants were aware of the need to make the school library a welcoming environment. For example, twenty-seven participants responded that they allow teachers of ASD students to bring their classes for extended times. In addition, thirteen participants coordinated with teachers to improve the social skills of ASD students by letting them work as aids. If ASD students are highly functioning, allowing these students to work in the library as aids can benefit their teachers who need to provide inclusion activities, the students who need to learn social and work skills, and the school librarians who are always busy and need help.

Conclusion

The number of children diagnosed with ASD continues to grow rapidly. The United States is facing an epidemic, which must be addressed in the educational system. The results of this study indicate that school librarians have the potential to make an impact on how students with ASD are educated by partnering with their teachers to ensure inclusion. However, it is imperative for school librarians to be made aware of autism and the roles they can play as advocates, professional development providers, collaborative team members, mentors, and instructors. These roles are essential because the words that Dresang wrote in 1977 continue to be true: There are no other children.

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The library provides a place where the world can come to the student.

Gifted Readers and Libraries: A Natural Fit

REBECCA HASLAM-ODOARDI

Jenna, a fourth grader in Mrs. Sondberg's class loves the library. She thinks it is the best place in the entire school.

"Mrs. Wilcox [the teacher-librarian] helps me find the books I want to read," Jenna shares. "She knows I have already read most of the books the fifth and sixth graders read. So she always buys new books for me to read that are challenging and exciting!" And that's not all.

When prodded to discuss any other reasons why she likes being in the library, Jenna enthusiastically mentions that she likes to have "book discussions" with Mrs. Wilcox. "What are those?", I ask. "Well" she pauses, thinking, "Mrs. Wilcox understands that to keep me engaged in reading, I need to think deeper about what I read. She helps me do that by asking me questions that I have to think really hard to answer."

"Does she do this with all the students?" I ask.

"Yes, but with me and some of the other higher level readers, she asks us questions that are harder."

"How do you like that?" I continue.

"It's the very best part of being in the library. I love the "group think" time with Mrs. Wilcox because I love to read and reading shouldn't just be about hurrying through the book. It should be about taking time to study what the book is really about."

Not all advanced readers are as lucky as Jenna, who has a teacher skilled in challenging her reading abilities. Research has shown that the failure to provide appropriate reading instruction for gifted readers resulted in a decline in positive attitude toward reading, especially in the higher grades (Swiatek & Lupkowski-Shoplik, 2000). Gifted students need differentiated curriculum that is tied to their interests and abilities in order to be well-functioning in the school environment. Schools that do not attend to the needs of their students run the risk of the students becoming apathetic, disengaged, and perhaps even dropping out of school (Archambault, Westberg, Brown, Hallmark, Emmons, & Zang, 1993; Colangelo et al., 2004; Renzulli & Park, 2002; Reis et al., 2004).

Data from the Utah Advanced Readers At Risk (ARAR) program show that providing instruction to teachers about how to differentiate for reading instruction and the specific content to teach during that reading instruction made a difference both in the lives of the students as well as in the teaching abilities of the teachers (Hunsaker, Bartlett, & Nielsen, 2009). Advanced readers had the chance to read books that interested them and that were at an appropriate level

of challenge for them, and teachers learned the strategies to use with these students so they continued to grow in the area of reading.

THE ADVANCED READERS AT RISK PROJECT

Jenna's teacher was involved in a Jacob K. Javits Gifted and Talented Education Federal Grant. The purpose of the Advanced Readers At Risk: Rescuing an Underserved Population (Hunsaker, S.L., Odoardi, R.H., et. al, 2003) grant awarded to Davis County School District from the United States Department of Education (2003-2007), was to provide appropriately challenging reading opportunities to those students who read significantly above grade level. Teachers involved in the project were recruited from Utah school districts. They were divided into two cohorts: Cohort I participated in years one, two, and three, and Cohort II participated in years two and three. Cohort I began with 30 teachers who taught fourth, fifth, and sixth grades. The 31 Cohort II teachers also taught fourth, fifth, and sixth grades. The project included teachers from both Title I and non-Title I schools.

WHO ARE THE HIGH-ABILITY LEARNERS?

As the program began, the teachers naturally wondered who these students were. Were we talking about the child who read voraciously and did not want to do anything else? Were we talking about those students who tested

well? Were we talking about the students who said they "loved" reading? What we found was that all of the above could be said about advanced readers. They may be the students who come into the library, sit down, and read voraciously. They may be the students who wander around the library for the entire library time trying to choose a book to read. And, they may also be the students who continually ask questions about reading, about books, and about the library itself that seem more advanced than those asked by the other students in the class.

We know that gifted readers are early and voracious readers, have advanced vocabularies, and perform better on reading assessments than their age level peers (Vacca, Vacca, & Gove, 1991). In addition they use words easily, accurately, and creatively in new and innovative contexts and they perceive relationships between and among characters and grasp complex ideas (Collins & Kortner, 1995; Halstead, 1990). There is also strong evidence that they may not benefit from conventional reading instruction (Catron & Wingebach, 1986; Dooley, 1993; Levande, 1999). They need to be able to explore books that answer their many questions, books that tease and invite introspection, and they need to be encouraged to read what they love in order to continue to read. The teacher-librarian, central to all of these purposes, was an important partner in the Advanced Readers at Risk project.

THE FOUR COMPONENTS OF THE ARAR READING PROGRAM

The four components of the model are shown in Figure 1. *Learning to Read* and *Reading to Learn* have to do with the acquisition of advanced academic skills and *Reading to Serve* and *Reading for Leisure* describe what gifted readers do as they interact with what they read. Two of the components of the model—learning to read and reading to learn—are designated as "academic" reading because they are primarily applied for purposes of schooling. The other two components—reading for leisure and reading to serve—are considered "active" reading because they are used actively for personal purposes. There is also

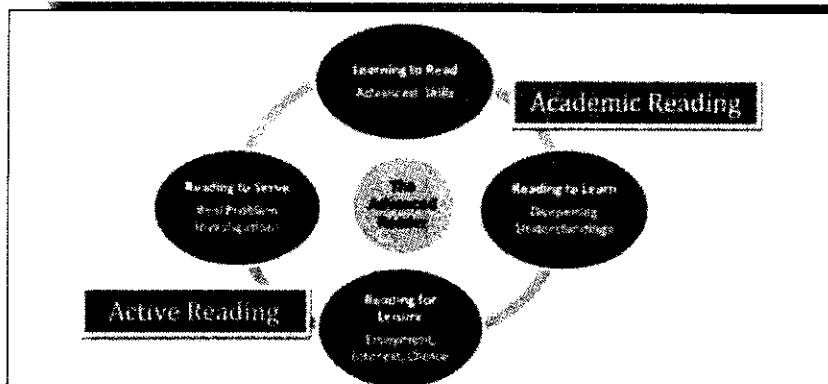


Figure 1. The Advanced Readers at Risk Program Explained.

a relationship among the components that exists along the diagonals where learning to read and reading for leisure are considered intrinsic because reading is for reading's sake, whereas reading to learn and reading to serve are more instrumental because reading is a skill for purposes other than reading itself (Hunsaker, 2002).

SELECTING BOOKS FOR ADVANCED READERS

How do we select books that have advanced vocabulary and content and yet are still appropriate for the student's reading level? Jenna, at age ten, was ready to read very complex literature, yet the teacher and teacher-librarian had to work in concert to be sure the literature she chose was appropriate. What then are the ideas teachers and teacher-librarians need to consider when helping advanced readers find books that are appropriate for them?

First, books for advanced readers should have strong characters gifted readers can relate to and/or characters they can admire and emulate. In the book, *The Watsons Go to Birmingham-1963* by Christopher Paul Curtis (1995), a Northern black family travels to Birmingham, AL during the height of the Civil Rights movement and witness one of the darkest events in American History. The book is an excellent example of courage, tenacity, and determination. The characters are strong and their virtues are those we would want students like Jenna to emulate. As an assignment, students could write biographical sketches of these characters or compare and contrast what they see in them

with their own life in today's world.

In the newly released, *A Season of Gifts* by Richard Peck (2009), the character of Grandma Dowell is intriguing. Her gutsy, no nonsense personality, fearless sense of right and wrong, along with her subtle sense of humor are fascinating. This book, the third in the series of Grandma Dowell books, is full of unique phrases and historical references that set the stage for excellent student- or teacher-led discussions. Questions about phrases such as "gray in the gloaming," "I'm techy as a bull in fly time," or "the silence fell upon the listening town" helps students explore the subtleties and nuances of language.

Second, when choosing books for advanced readers, the language used in the book needs to enrich the text as it challenges, stimulates, and stretches the reader. Vocabulary that is new and challenging asks the advanced reader like Jenna to think, to consider the context of the sentence, and to discover new words. In Michael Clay Thompson's *100 Classic Words* (2006) he suggests exposing students to words like traverse, repose, lurid, superfluous, sagacity, tremulous, wan, indolent, maxim gives them the background information they need to read more sophisticated texts. Jenna needs to be able to talk about the meanings of these words with her teacher and with her peers. She needs to use them in her writing and she needs to be encouraged to broaden her own vocabulary. The following from the classic book, *Call of the Wild* by Jack London (1903) is an example of language that is rich and vivid.

Third, books that are appropriate for advanced readers need to involve plot that

is complex. It is often the complexity of a book that makes it most challenging for the advanced reader. Important questions to ask would be:

- Does the story present a multiplicity of ideas or concepts?
- Does it warrant deep thinking about a topic that is interesting and important?
- Is the story predictable or does it lead the reader to wonder, to suppose, and to imagine?

One of the most intriguing things about the book *Tunnels* by Roderick Gordon and Brian Williams (2007) is that the reader always encounters the unexpected. The twists and turns in the plot keep the reader guessing, wondering, and yes, reading! Exploring these twists and turns, diagramming the rising and falling action, discussing the conflicts experienced by the characters in the story, exploring how the author brings resolution to these conflicts, and also noting the techniques used by the author to develop the climax are ways to not only improve gifted readers skills in reading but also help them understand and improve their writing skills.

Fourth, books for advanced readers need to employ a variety of literary devices. Onomatopoeia, alliteration, assonance, flashback, forecasting, satire, irony, and hyperbole are examples teachers can use with advanced readers. Because of their cognitive abilities, these students need these strategies so they will think more deeply about the connections they can make to the text. Exposing gifted readers to poetry and poetry anthologies are excellent ways to introduce them to literary devices.

In the rerelease of Robert Frost's poetry collection titled, *You Come Too: Favorite Poems for Young Readers* (2002), students have the opportunity to explore the literary devices found in his work. As gifted students read this book, they could be asked to:

- Identify the literary devices in the poetry;
- Create a new poem that expresses one of the key ideas in Robert Frost's poem; and
- Analyze the poetic form in one of his works and write a new poem using that form.

Fifth, advanced readers need to be encouraged to read all kinds of literature—fic-

tion and nonfiction. They need to explore the world through books about geography, science, and history. They need to be encouraged to question, to wonder, and to find the answers to their questions through the literature they read. Internet resources, blogs, and webcasts may prove to be the best resources for advanced content for these students; however, libraries also need to include books and materials that are more advanced. The award winning nonfiction book, *Freedom Riders: On the Front Lines of the Civil Rights Movement* by Ann Baumsum (2005) is the story of two young men, one white and one black who boarded a bus in the south to aid the cause of civil rights. The challenges they encounter, the attitudes they find in the people of the south, and also the heroism they display in a time of great political unrest not only exemplify courage and commitment but also provide gifted readers with opportunities to connect both fiction and nonfiction books to the history they are studying in school. Students can explore the theme of "conflict" by both analyzing and comparing the fictional book *The Watsons Go To Birmingham* with this nonfiction account.

Activities might include:

- Creating a multimedia presentation about the major events during the Civil Rights movement using examples from both books.
- Exploring the laws and court actions that we have today as a result of the Civil Rights Movement.
- Discovering how the political unrest of the 1960's led to today's election of an African American for President of the United States.

While activity differentiation with the same learning objective may require a teacher-librarian to provide appropriate information to the student's needs (in this case potentially beyond grade level), advanced readers need to have this support to freely explore their interests. They also need to be given credit for the curricular concepts they already know and be given opportunities to focus on in-depth study projects like those mentioned before.

Sixth, advanced readers need opportunities to read about events, situations, and circumstances going on in their world that

interest them. Because of their ability to read material that is more advanced, they may have questions about local, state, or world situations that other students either are not yet interested in or do not understand. The library provides a place where the world can come to the student. Reading materials that support their desire to know and understand are important for these students. As teachers and teacher-librarians consider books for the advanced readers in their classroom, a checklist like the one in Figure 2 might prove helpful.

HELPING ADVANCED READERS CONTINUE TO LOVE FOR READING

In the Advanced Readers at Risk project, we found that advanced readers do not always love to read.

Some strategies we have used with advanced readers either hold them back or do not help them to learn new things. Advanced readers need to be encouraged to read material that may appear difficult but will always expose them to something new. This also means they may need adjustments in when reading assignments are due so they can have the time they need to read more difficult selections.

For instance, accounting models for recreational reading—programs in which books, pages, minutes, or points are counted, especially where such programs limit students to specific reading lists, do not allow advanced students the opportunity to select literature that interests them and is appropriately matched to their ability.

Jenna's teacher used discussions, student interviews, and her own information on how Jenna responded to advanced questions to assess whether or not Jenna and the other advanced students were acquiring new reading skills. By using strategies that helped the students acquire new reading skills, Jenna's teacher was able to interrupt the declines in interest advanced readers typically show toward reading. By letting students have more choice in what they read, by eliminating accounting models, and, instead, finding ways to ignite the passion for reading, teachers and teacher-librarians in the ARAR project

Things to Consider When Selecting Books for Advanced Readers	
Strong characters advanced readers can relate to and/or characters they can admire and emulate.	
Language that enriches the text and challenges, stimulates, and stretches the reader.	
Complexity in plot structure.	
Variety of literary devices.	
Selected from a broad range of genres.	
Interesting to the student.	

Figure 2. Checklist to help in book selection

were able to develop and maintain students' love of reading.

The teacher-librarian partnered with Jenna's teacher to focus on the joy of reading. She read aloud to small groups of students who were grouped according to their need and ability. The teacher-librarian worked collaboratively with the teacher to pique their interest with various books by giving book talks, by encouraging questions about the books, and by guiding the students to choose appropriate books for successful, challenging reading. The book discussions were always on various topics of interest to the students and the higher-level questions like those shown in Figure 3, were used to encourage the advanced readers to think at a deeper level.

LIBRARIES AS HOME FOR GIFTED READERS

The library became Jenna's favorite place because her teacher-librarian encouraged and challenged her.

Through the ARAR project it became clear teachers, gifted and talented specialists, and teacher-librarians need to work together as a learning community to provide appropriate instruction for the advanced readers in the classroom. Together they need to talk openly about the materials, books, and information needed to meet the variety of ability levels in the classroom. They need to discuss how the time spent in the library could extend and enrich the learning for all students, but they also need to work collaboratively to guide and direct learning for the advanced reading student so that, like Jenna, advanced readers know the library as a friendly, open, engaging place where opportunities are limitless.

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Bloom's Taxonomy Level	FICTION QUESTIONS
Analysis	What would you infer is the author's purpose for writing the book? What ideas in the book validate the author's choice of the book's title?
Synthesis	Discuss the pros and cons of changing the ending of the book? What additional facts could you gather to help the author extend the story? How does the subject of the book connect to other books you have read?
Evaluation	What changes would you make to revise the beginning of the book? What criteria would you use to assess the worth of this book? What is the most important concept you think the author was trying to teach the reader? Share a choice that you would have had a character make that is different from the one the author chose.
Bloom's Taxonomy Level	NONFICTION QUESTIONS
Analysis	Infer what you believe is the most important information the author wants the reader to know about this topic. Survey your friends and family to find out why this topic is important for people to consider.
Synthesis	What projects can you suggest as a result of your reading about this topic? Make a presentation to the class about the effect this topic has or could have on them. Generate a poster or campaign dealing with some aspect of the topic you read about.
Evaluation	Make a list of careers or job opportunities you think could result from the topic of your book. How could you determine whether or not the information presented in the book is true or false? What resources or new ideas could the author have included in this book that seems to be left out? Prepare a debate to defend your position regarding some part of the book.

Figure 3. Sample Questions/Suggestions for Advanced Readers

17 Don'ts for Gifted Readers By Rebecca Odoardi

1. Don't challenge them to read difficult material.

2. Don't give them to read books that are too easy for them. On the other hand don't discourage them from reading books that are easy for them when comfort reading is the goal.

4. Don't make them count pages or time...doing this may lead to poor attitudes toward reading.

5. Don't use computer reading programs to track their progress or assess them unless you are willing to write a test for more difficult books they may choose to read. This may create a situation where they read an easier book just to accumulate points.

6. Don't be afraid to group for instruction...whole group instruction does not meet everyone's needs.

8. Don't be concerned if they sometimes make mistakes. Gifted readers aren't perfect.

9. Don't forget to involve them in sophisticated dialogue about what they read; use higher level Blooms taxonomy questions with them.

10. Don't always choose books for them to read. Gifted readers like to choose the books they want to read.

11. Don't just "assign" books; give them reasons to read books through book talks and other inviting book activities.

12. Don't feel they always have to defend their reading choices. Let them sometimes read something just because they want to read it.

13. Don't discourage them from rereading their favorite books.

14. Don't inhibit their quest for information. Gifted readers often want to find the answers to questions other students aren't mature enough to ask. Carefully guide them to appropriate resources for answers to their questions.

15. Don't forget they need time to discuss their ideas, insights, and perceptions with their *intellectual* peers.

16. Don't make them finish every book they start. Give them the right to decide that a particular book is not good for them.

17. Don't discourage them from rereading a book they love. Even adults sometimes reread favorite books.

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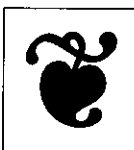
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An Examination of the Correlation of Research Information Literacy Competence and Social-Emotional Behavior Among High School Students

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Abstract

The purpose of this research was to investigate the degree of correlation of information literacy competency and social-emotional behavior of high school students. Specifically, three assessment instruments were administered to a sample of ninth and eleventh grade students in Orange County. Respondents indicated the relative degree of their information literacy competency and social-emotional behavior. Sample research reports of those students were rated by their teachers. Correlation statistics tested hypotheses linking literacy and behavior. Persistence and "getting along" were the best predictors of information literacy and research success.

Introduction

K-12 library media programs are trying to establish correlations between well-implemented library service and student achievement. In terms of curriculum, school librarians tend to focus on information literacy. In attempts to measure information literacy competency, professionals are examining student research processes, and developing corresponding rubrics. School librarians are using those rubrics more specifically to assess student work, although such work is difficult to generalize and extrapolate or do on a large scale.

These assessments tend to focus on cognitive skills, with little regard to student's social-emotional-motivational competence. The main seminal work in this area has been conducted by Carol Kuhlthau, who tracked students' emotional status during their research process. However, little research has been conducted in the area of emotional readiness with respect to information literacy. Just as with reading readiness, there may be a developmental and psychological aspect that influences student success with regard to information literacy.

Ellis and Bernard have led the research in social-emotional behavior therapy, which examines student's affective-motivational characteristics as contributing independently from students' cognitive characteristics to student achievement. On a broader scale, the Collaborative to Advance Social and Emotional Learning have identified key social and emotional competencies, which include several that align with information literacy: problem identification and solving, communication skills, and social skills of

cooperation and help-seeking. Thus, as students exhibit positive social-emotional behavior, they may be more likely to achieve information literacy competency.

Based on these premises, this research investigated the correlation of social-emotional behavior and information literacy competencies of sample high school students.

Research Questions

Based on the statement of the problem, the guiding research questions were:

- 1) To what degree does a correlation exist between students' social-emotional behavior status and students' research information literacy competence?
- 2) To what degree does a correlation exist between students' social-emotional behavior status and students' research project quality?

If a significant correlation exist, then the next step in social-emotional behavior therapy may be investigated. Specifically, school librarians would focus on critical affective and behavior competencies within the information literacy framework, and provide effective interventions so students would be given opportunities to learn and practice these behaviors during the research process.

This research builds on the research that AASL is doing to insure high-quality library media programs that support the mission of ensuring that students and staff are effective users of ideas and information. It also builds on Farmer's research regarding the perceptions of school community members towards the AASL factors. The project also links to various research correlating information literacy standards and student achievement.

Methodology

The strategy for answering the research questions consisted of administering three assessment instruments to 72 ninth graders and 41 eleventh graders in an Orange County high school. The ninth grade classes were designated as gifted and talented, while the eleventh grade classes were not so designated. One instrument consisted of a research process rubric adapted from Colorado's and Grover's work on information literacy competency. A parallel rubric, measuring the quality of a research product, was also adapted from these sources and the American Association of School Librarians. The instruments were used and validated by the investigator for the Tamalpais Union High School District. The research product instrument was used to analysis sample student research reports as a cross-validation of student self-assessment of research information literacy competency. A third instrument measured student social-emotional behavior: Students' Foundation for Achievement and Social-Emotional Well-Being (Bernard and Laws), which has been validated for 10 to 17 year olds.

Specifically, at the beginning of a research project, four ninth grade classes (all with Teacher A) and two eleventh grade classes (both with Teacher B) self-completed the Students' Foundation for Achievement and Social-Emotional Well-Being Student Form (Bernard, 2003) and the Research Process Rubric (Tamalpais USD, 1999). At the end of the research project, the teacher completed the Research Product Rubric (Tamalpais USD, 1999).

The scores were coded and entered into an Excel spreadsheet. The process rubric was coded from 1 (emerging) to 4 (exceptional), and the product rubric was coded from 1 (unsatisfactory) to 6 (exceptional); these scores were treated as ordinal numbers. Grade level and gender were also coded and entered. A code number was generated for each student to link the three instruments while insuring confidentiality. The data were then imported into SPSS version 12 (2003).

Exploratory statistics were generated to reveal potential patterns. It was suspected that gender and grade might be significant factors, so additional tests were conducted.

Findings

Social-Emotional Well-Being

Before determining the degree of correlation between social-emotional well-being and research processes or products, the investigator examined patterns within this 25-factor set of measurements. Bernard (2003) statistically analyzed the 25 factors, dividing them into five distinguishing attributes: confidence (A1), persistence (A2), organization (A3), getting along (A4), emotional resilience (A5).

Initially, an independent samples T-test was conducted to these five attributes to determine if boys and girls represented the same population, which they did. When the data for the two grades were compared, it was found that ninth graders rated themselves significantly higher/more mature than eleventh grades for persistence (7.82 vs. 7.29 with .033 significance) and organization (8.16 vs. 7.51 with .026 significance), which was entirely accounted for by the ninth grade girls' responses. Initial data analysis of the five attributes did not reveal enough differentiation, so individual factors were analyzed.

Gender

An independent samples T-test was conducted to determine if boys and girls represented the same population. For each gender as a whole, there was no difference in process and product. Three social-emotional factors were found to be significantly different:

- F11: I make sure I understand the teacher's instructions before beginning to work.

- F17: I listen and do not interrupt when someone else is speaking.
- F18: I am sensitive to the feelings of others and I volunteer to help others in need.

In each case, girls indicated that they exhibited these behaviors more than boys.

Factor	Girls' Mean	Boys' Mean	Significance*
11	8.10	6.47	.002
17	8.23	7.65	.018
18	8.60	6.58	.000

Correlation is significant at the 0.01 level (2-tailed) or significant at the 0.05 level (2-tailed) for this and the following tables.

When the data for the two grades were treated separately, results were different.

Among the eleventh graders, there was no significant difference in social-emotional well-being factors. However, the girls exhibited significantly more mature behaviors than boys along seven factors:

- F6: I continue to try, even when schoolwork is hard.
- F11: I make sure I understand the teacher's instructions before beginning to work.
- F13: I write down assignments and when they have to be completed.
- F15: I am organized in doing schoolwork.
- F18: I am sensitive to the feelings of others and I volunteer to help others in need.
- F22: I am good at controlling my temper.
-

Factor	Girls' Mean	Boys' Mean	Significance
F6	8.53	7.26	.045
F11	8.50	6.94	.000
F13	8.39	5.53	.007
F15	8.37	6.76	.041
F18	8.53	7.15	.015
F22	7.68	6.76	.003

Research process behavior self-assessment and teacher-assessed research products were also analyzed using independent samples T-tests. In terms of gender, 11th grade girls out-performed boys in terms of adhering to the assignment (3.45 girls' mean vs. 3.16 boys' means with a .036 significance). Among the ninth graders, there was no significant difference in process or product.

To see if grade level made a difference in the findings about gender, independent samples T-tests were performed for boys and for girls. There was no significant difference between ninth grade boys and eleventh grade boys. Between ninth grade girls and eleventh grade girls there was no significant difference in social-emotional

attributes, but in terms of products, ninth grade girls performed significantly better (correlation at the .01 level of confidence) for research product indicators. Additionally, they self-assessed their research process skills significantly higher (correlation at the .01 level of confidence) than eleventh grade girls in terms of:

- determining information need,
- developing search strategy,
- assessing an comprehending information, and
- interpreting and organizing information.

Grade

Seeing these results, the investigator used an independent samples T-test to determine if there was a significant difference between ninth graders and eleventh graders in terms of the measures of the three instruments.

The following individual social-emotional factor means differed significantly between the two grades:

- F1: I volunteer to participate in a new activity/experience.
- F6: I continue to try, even when schoolwork is hard.
- F7: I concentrate well when working.
- F9: I put in the effort necessary to complete difficult class and homework assignments.
- F10: I am persistent in doing schoolwork.
- F11: I make sure I understand the teacher's instructions before beginning to work.
- F17: I listen and do not interrupt when someone else is speaking.
- F19: I understand that by following important rules, I help make my world a safer and better place to live and learn.
- F20: I get along well with others.
- F24: When I get upset about something, I am good at being able to calm down quickly.
-

In each case, the ninth graders rated themselves more positively than the eleventh graders.

Factor	9th Graders' Mean	11th Graders' Mean	Significance
F1	6.68	5.41	.024
F6	7.93	7.22	.023
F7	7.28	6.44	.050
F9	7.96	7.05	.002
F10	8.22	7.10	.010
F11	7.76	6.59	.004
F17	8.25	7.46	.037

F19	8.20	7.49	.000
F20	8.42	8.20	.006
F24	6.72	6.34	.018

In terms of research processes, eleventh graders self-assessed their skill significantly higher than ninth graders for:

- Process 1: Determines information need
- Process 2: Develops search strategy
- Process 5: Interprets and organizes information.

Ninth graders self-assessed their skill significantly highly than eleventh graders for Process 7: Evaluates product and process.

Process	9 th Graders' Mean	11 th Graders' Mean	Significance
1	3.29	3.90	.011
2	3.31	4.00	.008
5	3.32	4.07	.012
7	3.31	2.95	.004

The teacher evaluated the students' work using the research product rubric. For three of the five target indicators, ninth graders outperformed eleventh graders to a significant degree:

- Indicator 1: Adherence to assignment
- Indicator 2: Organization .
- Indicator 3: Proof and justification

Indicator	9 th Graders' Mean	11 th Graders' Mean	Significance
1	4.31	3.32	.046
2	4.64	3.10	.000
3	4.78	3.05	.001

Well-Being and Research

On the face of it, it appeared that older students were less mature, conducted research more effectively, and produced poorer research results. However, the differences in research product may be attributed to differences in the assignment and differences in the teachers' scoring of the product.

Thus, a follow-up Kendall Tau test was used to determine the degree of correlation between:

- social-emotional well-being and research processes,
- social-emotional well-being and research product, and
- research processes and research product.

First, the five social-emotional attributes were correlated to processes and product indicators. There was a significant positive correlation between social-emotional well-being and the research process overall:

Attribute	Correlation Coefficient	Significance
Persistence	.141	.034
Getting along	.247	.000
Emotional Resilience	.175	.009

Among eleventh graders, the correlations were as follows:

Attribute	Correlation Coefficient	Significance
Persistence	.290	.012
Getting along	.300	.008

In contrast, the correlation between social-emotional well-being and the research process overall (using Kendall-tau test) generated these findings for ninth graders:

Attribute	Correlation Coefficient	Significance
Self-confidence	.256	.003
Persistence	.191	.024
Getting along	.307	.000
Emotional Resilience	.253	.003

Next, the seven research processes were analyzed separately to determine finer distinctions in the correlations. Overall findings were:

	Process 6: Communicate	Process 7: Evaluate
Attribute	Correl. Coef. / Significance	Correl. Coef. / Significance
Self-confidence	.297 / .001	.236 / .002
Persistence	.345 / .000	.273 / .000
Organization	.013 / .890	.225 / .003
Getting Along	.389 / .000	.231 / .002
Emotional Resilience	.315 / .001	.256 / .001

Grade level seemed to be a significant variable, so a follow-up Kendall's Tau test was used to analyze the data. For ninth graders, the results were:

	Self-confidence	Persistence	Organization	Getting Along	Emotional Resilience
Process Indicator	Correl. Coef. / Signif.	Correl. Coef. / Signif.	Correl. Coef. / Signif.	Correl. Coef. / Signif.	Correl. Coef. / Signif.
ID task	Not signif.	.205 / .027	NS	.206 / .026	.237 / .011
Strategize	NS	.188 / .044	NS	.215 / .021	NS

Comprehend	.330 / .000	NS	NS	.289 / .002	.217 / .019
Interpret	.268 / .004	NS	NS	.289 / .002	NS
Communicate	.203 / .031	NS	.240 / .009	.245 / .009	.236 / .012
Evaluate	.197 / .037	.244 / .010	.200 / .033	.228 / .016	.273 / .004

For eleventh graders, the results were:

	Persistence	Getting Along	Emotional Resilience
Process Indicator	Correl. Coef. / Signif.	Correl. Coef./ Signif.	Correl. Coef. / Signif.
Communicate	.332/.008	.287/.023	.284/024
Evaluate	.300 / .018	NS	NS

To determine if individual social-emotional behaviors correlated with research processes, follow-up Kendell tau tests were administered. The most highly correlated behaviors were:

- 1: Confidence: I volunteer to participate in a new activity/ experience.
- 6: Persistence: I continue to try, even when schoolwork is hard.
- 8: Persistence: I check my work when finished to make sure it's correct.
- 9: Persistence: I put in the effort necessary to complete difficult class and homework assignments.
- 10: Persistence: I am persistent in doing schoolwork.
- 15: Organization: I am organized in doing schoolwork.
- 16: Getting along: I am good at working cooperatively with my classmates on projects. (only for eleventh graders)
- 23: Emotional resilience: When I get upset about something, I am good at being able to calm down quickly.
- 24: Emotional resilience: I am good at bouncing back from something that happens that upsets me.

Behavior	Overall	9 th Grade	11 th Grade	Girls	Boys
1	C6: .187/.016 C7: .273/.000		C7: .399/.002	C6: .227/.033 C7: .292/.007	C7: .245/.032
6	C6: .201/.011 C7: 209/.009		C6: .304/.021 C7: .276/.007		C6: .284/.014
8	C6: .183/.017 C7: .269/.001	C6: .197/.042 C7: .264/.007		C7: 258/.019	C7: .272/.016
9	C6: .227/.004 C7: .264/.001	C7: .249/.013	C6: .442/.001 C7: .262/.047	C7: .350/.002	C6: .345/.003
10	C6: .249/.002 C7: .239/.003		C6: .400/.002 C7: .285/.031	C7: .301/.007	C6: .316/.006
15	C6: .208/.008 C7: .273/.002	C6: .259/.009 C7: .272/.006		C7: .273/.015	C6: .233/.040 C7: .202/.023

16	C6: .270/.001		C6: .438/.001	C6: .293/.009	C6: .242/.036
23	C6: .300/.000 C7: .265/.001	C6: .226/.021 C7: .241/.014	C6: .426/.001 C7: .306/.020	C6: .352/.001 C7: .283/.010	C6: .275/.017 C7: .290/.011
24	C6: .266/.001 C7: .252/.001	C6: .271/.006 C7: .244/.013	C6: .263/.045 C7: .272/.038	C6: .221/.040	C6: .307/.007 C7: .288/.011

C6=Process 6: Communicate; C7=Process 7: Evaluate
(Correlation Coefficient / Significance in terms of level of confidence)

Next, to determine to what degree there was a correlation between social-emotional attributes and research product, a Kendall tau test was used. The attribute average in relationship to the research product average resulted in a .228 correlation coefficient (significance at the .020 level of confidence). By separate attributes in relationship to the research product average, only persistence was significantly correlated (.312 correlation coefficient with significance at the .01 level of confidence).

When the data were examined by grades, the differences emerged. For ninth graders, there was no significant correlation between:

- overall well-being and research product average, nor
- between any one attribute and research product average.

In contrast, for eleventh graders, the findings were as follows. The attribute average in relationship to the research product average resulted in a .275 correlation coefficient (significance at the .017 level of confidence). More specifically:

Research Product Indicator	Persistence	Getting Along	Emotional Resilience
Average	.242 / .036	.325 / .005	.247 / .033
Organization	.285 / .085	NS	NS
Proof & Justification	NS	.335 / .009	.338 / .007

(Correlation Coefficient / Significance in terms of level of confidence)

The most highly correlated research product indicator was proof /justification. Again, Kendall tau tests were used to determine to what degree correlations existed between individual social-emotional behaviors and research product indicators. It was found that examining correlations by gender and grade level was more informative than obtaining correlations for the entire population, particularly since each subgroup had unique correlations that crossed research product indicators. The most significant individual behaviors were:

Behavior	9 th Graders	11 th Graders	Girls	Boys
Confident meeting new people	D1: -.226/.017 D3: -.242/.012 D4: -.249/.011			
Check work when finished to make sure it's correct		D1: .304/.020 D2: .322/.014 D3: .297/.023		D1: .292/.008 D2: .290/.008 D3: .250/.018

				D4: .234/.034
Put in effort needed to complete difficult assignments		D1: .344/.011		D1: .423/.000 D2: .280/.012 D3: .352/.001 D4: .378/.001 D5: .270/.015
Work cooperatively on projects	D2: -.278/.004 D3: -.280/.004	D2: .278/.039 D3: .340/.011 D4: .274/.043		
Follow important rules for safety and have better world				D1: .231/.037 D2: .239/.031 D3: .324/.003 D4: .313/.005 D5: .310/.005
Get along well with others	D1: -.245/.012 D3: -.283/.004 D4: -.271/.007	D1: .300/.026 D3: .340/.010	D2: -.275/.012 D3: -.231/.029 D4: .251/.020 D5: .236/.029	

D1: Adherence to Assignment; D2: Organization; D3: Proof & Justification; D4: Language & Strategy Use; D5: Spelling & Grammar
(Correlation Coefficient / Significance in terms of level of confidence)

However, the most surprising findings were with regard to the degree of correlation between the research process (which was self-assessed) and research product (which was assessed by the teacher). Overall, there was no significant difference between the research process and product average. However, when individual indicators were compared, the findings were significant for most:

Process Indicators	Adherence to Assignment	Organization	Proof & Justification	Language & Strategy Use	Spelling & Grammar
ID Task	-.257/.001	-.366/.000	-.341/.000	-.365/.000	-.361/.000
Strategize	-.333/.000	-.449/.000	-.422/.000	-.438/.000	-.411/.000
Locate	-.223/.000	-.277/.001	-.294/.000	-.273/.001	-.252/.002
Comprehend	-.352/.000	-.432/.000	-.433/.000	-.411/.000	-.408/.000
Interpret	-.308/.000	-.444/.000	-.452/.000	-.484/.000	-.462/.000
Communicate	NS	NS	NS	NS	NS
Evaluate	.190/.020	.261/.001	.272/.001	.210/.010	.251/.002

For ninth graders, there was a significant *negative* correlation between the process average and the product average: -.321 with .000 significance. More specifically:

Process Indicators	Adherence to Assignment	Organization	Proof & Justification	Language & Strategy Use	Spelling & Grammar
ID Task	-.210/.038	-.222/.029	-.220/.032	-.267/.010	-.249/.015
Strategize	-.251/.014	-.271/.008	-.281/.006	-.306/.003	-.244/.018

Locate	NS	-.224/.031	-.288/.005	-.261/.013	MS
Comprehend	-.363/.000	-.336/.001	-.396/.000	-.355/.001	-.333/.001
Interpret	-.215/.034	-.235/.021	-.286/.005	-.373/.000	-.322/.002
Communicate	-.213/.037	-.228/.007	-.251/.016	-.281/.007	NS
Evaluate	NS	NS	NS	NS	NS

In contrast, for eleventh graders, most correlations were either not significant or were positive:

Process Indicators	Adherence to Assignment	Organization	Proof & Justification	Language & Strategy Use	Spelling & Grammar
Communicate	.418/.003	NS	.467/.001	.337/.020	.333/.019
Evaluate	.341/.018	.559/.000	.570/.000	.506/.001	.337/.019

When gender was taken into effect, it was found that by and large, girls' scores accounted for the results, particularly for ninth grade girls (in contrast, for ninth grade boys the only significant correlation between process and product was Interpreting and Language/strategy use, which had a $-.374$ correlation coefficient and $.016$ significance).

Discussion

This study intended to answer the following research questions:

- 1) To what degree does a correlation exist between students' social-emotional behavior status and students' research information literacy competence?
- 2) To what degree does a correlation exist between students' social-emotional behavior status and students' research project quality?

It also examined the possible correlation between students' self-perceptions of their ability to follow a research process and teachers' perception of students' research products.

It was found that gender and grade made a significant difference in terms of self-perceptions and teachers' evaluations relative to these behaviors and products.

Instrumental Inner-correlations

Social-Emotional Well-Being. Before looking at the correlations, it was useful to examine students' self-perceptions about their social-emotional well-being. Ninth graders tended to rate their behaviors more highly, mainly for the attributes of persistence, organization, and getting along; in particular, ninth grade girls rated their behavior higher than their male peers as well as their eleventh grade female counterparts. The factors that were found to be significant followed the expected behavior styles of females: waiting to understand teachers' instructions, not interrupting, and being sensitive to others' feelings. However, by eleventh grade, boys'

and girls' self-perceptions of behaviors did not differ significantly. When comparing *all* girls and *all* boys, though, girls self-reported more mature social-emotional behaviors in terms of trying hard, being organized, and self-regulating emotions. When these results are examined in light of the students' research product as assessed by teachers, it appears that the study's eleventh graders self-assessed their behaviors more accurately and realistically than did the ninth graders. Since the ninth graders were designated as gifted and talented, they may have a elevated sense of well-being. Alternatively, eleventh graders may find their studies more challenging than in freshman year and so self-assess themselves less optimistically. It would be useful to have parallel classes to test this hypothesis.

Research Processes. In terms of research processes, eleventh graders self-assessed their skills significantly higher for the steps of determining information need, developing a search strategy, and interpreting/organizing information. Ninth graders that that they did a better job of evaluating product and process. Gender did not seem to be a significant factor in self-reporting of research processes, but between ninth grade and eleventh grade girls, ninth grade girls thought they were more capable in determining information needs, strategizing, comprehension, and interpretation of information. Again, ninth grade self-perceptions could have been accounted for by their gifted/talented designation, or it could be due to perceptions shaped by experience in high school courses that were more difficult and nuanced than middle school work.

Research Product. The ninth grade teacher assessed the students' research product significantly higher than the eleventh grader teacher relative to adherence to assignment, organization, and proof and justification. However, since the two assignments were different, is it difficult to determine the relative complexity of each aspect of the product let alone the teachers' differences in assessment. What *can* be examined, however, is the relative level of performance within each grade.

Social-Emotional Well-Being and Research Processes

A significant positive correlation was found between social-emotional attributes and self-perceptions about the ability to conduct research. Overall, getting along and emotional resilience were found to be significant at the .01 level of confidence, and persistence was found to be significant at the .05 level. The two research process indicators that correlated most closely with social-emotional well-being were communicating findings and evaluating the process / product; for the population as a whole, all attributes but organization *as a whole* were found to be significantly correlated positively at the .01 level of confidence. The subgroup that reflected the highest correlations for several of the attributes and processes was ninth grade girls. Overall, the data seem to indicate that research can be a frustrating process, so being able to deal with obstacles emotionally and intellectually, and to revise the work to a satisfactory conclusion, are important social-emotional skills across grades and gender.

Communicating the Information. Persistently putting in the effort to complete difficult work was a significant factor to communicating the information, particularly for eleventh grade boys. For ninth graders, being organized in doing schoolwork was also clearly correlated with communicating. For eleventh graders, working cooperatively with classmates on projects was another highly significant factor, particularly for girls. Being able to calm down quickly and bounce back when upset was significantly correlated for all subgroups.

Evaluating Product and Process. For eleventh graders, particularly girls, evaluating the research process and product correlated closely with risk-taking (willingness to participate in new activities and to try even when schoolwork is hard). Since girls in general are less likely to take risks, helping them develop this willingness will "pay off" in the research process. Checking work when finished to make sure it is correct appears to be more important for ninth graders. Being able to "bounce back" when upset is another significant factor, particularly for ninth graders.

Thus, teachers of ninth graders can help their students with basic study skills of organization and checking over completed schoolwork to make sure it is correct and adheres to the assignment. Teachers should also help students become more accurate in their self-evaluations by taking "reality checks" of their work habits, and reflecting on the impact of their behaviors to their final work. They can also help them with emotional skills of getting back on track when upset or frustrated. I-search research projects are a good way to incorporate this kind of emotive-metacognitive approach to learning. For eleventh graders, teachers can help them take more intellectual risks and keep trying as part of a general strategy to aim for high-quality results.

Social-Emotional Well-Being and Research Products

The potential correlation between social-emotional well-being and research project is particularly interesting because it compares students' self-assessment of their personal behaviors and the teachers' assessment of their academic work. For this population, the most highly correlated research product indicator relative to social-emotional well-being was Proof and Justification.

For ninth grader, the behaviors that correlated negatively with research product indicators clustered around human relationships. Thus, those students who were more social tended to adhere less to the assignment, were less organized, had less substantial proof and justification, and exhibited less sophisticated language and search strategies. It could well be that they were distracted by their peers, or asked peers for advice rather than the teacher. Eleventh graders, on the other hand, leveraged their social skills to improve their research project.

For eleventh graders, persistence behaviors of checking over work correlated highly with adherence to assignments, and putting in the needed effort to complete difficult

assignments related to organization, proof and justification, and use of language and strategies. Interestingly, these behaviors were positively correlated with the evaluation step of research processes for ninth graders, but they didn't translate into significant correlations with research product indicators. Still, the finding indicates that all high school teachers would do well to reinforce behaviors of persistence, revising, and checking final work to make sure all directions are followed.

There was one social-emotional behavior that boys exhibited that correlated significantly across all research product indicators: following rules. This finding would indicate that teachers should help boys in particular see the benefits of such behavior, that it has a good "pay off."

Research Processes and Products

It was anticipated that students who were competent in research processes would produce high-quality research projects. For eleventh graders, strong positive correlations exist between the research processes of communication and evaluation and research products. However, significantly *negative* correlations between research processes and products tended to apply to ninth graders. In a follow-up communication with the school library media teacher, these ninth graders tended to over-estimate their abilities. Indeed, the more highly they rated their research process expertise, the more likely that their work would be considered lower quality by their teachers. Thus, as mentioned before, teachers of ninth graders need to help them learn how to self-assess accurately by objectively linking their research behavior with their output *as they conduct research projects*. Since boys' behaviors tended to remain stable over the grades, particular attention needs to be made to ninth grade girls' self-perceptions. This finding aligns with Competency Theory as researched by Dunning, et al (2003). They posited that incompetent individuals do not self assess themselves accurately, and do not improve by seeing models of competency. They need to be explicitly taught the skills that render them competent.

Conclusions

This exploratory study examined students' social-emotional well-being, and its possible correlation with research processes and products. Because it is limited to one site, it can control to some extent school expectations, but the students studied in this investigation represent two different curricular "tracks," which limits comparisons. Additionally, having one teacher per grade also compromises the data. Still, the investigation unearthed some interesting patterns, and suggest some directions to take.

At the very least, this study shows the correlation between social-emotional well-being and information literacy: research processes and products. Basically, library media teachers and classroom teachers should pay attention to the social and emotional skills of students. Teachers need to explicitly address and teach skills of listening to

assignments and checking work to make sure it adheres to the teachers' directions. Both library media teachers and classroom teachers should encourage students to persist in their research efforts; classroom teachers can emphasize the benefits of revising research questions, interpretation and manipulation of information, and communication of findings. Library media teachers can help students rethink key words, broaden their research strategies, and recycle the research process to refine questions and answers. Both classroom and library media teachers can help students by telling them frankly that conducting research can be a frustrating experience for students as well as information professionals, and that students should try to think of different approaches when they "hit the wall" and to keep on focusing on finding satisfying solutions to research questions.

On the positive side, the American Association of School Librarians included social skills (i.e., collaborative work) in their information literacy standards. What needs to be addressed, as revealed in this study, is the need for teachers to help students differentiate between social interaction and academically-centric collaboration. While it appears that this issue is resolved by eleventh grade, teachers can recognize freshmen's developmental behaviors and facilitate their actions to align more closely to academic demands. In addition, ninth grade teachers can help students think about how their behaviors impact their academic performance by using metacognitive exercises that concretely show the relationship between social-emotional behavior and research processes. This reality check can help students become more objective and accurate in their self-assessments. Peer review of these self-reflections can offer a socially acceptable and developmentally appropriate way to examine research efforts.

Particular attention should be made to gender-specific issues. For example, girls should be encouraged to take intellectual risks, and boys should be encouraged to follow directions, both to the goal of producing more on-target and substantive work. These issues can be expressed to the entire class since the ones who need that particular encouragement can apply that information and those who already follow those ideas will be affirmed in their behavior.

This study raises several questions, which call for further research:

- How do different populations (gifted, average, at-risk) reflect different social-emotional well-being as well as research processes and products?
- Do other high schools exhibit similar behaviors and performances?
- How do other teachers assess research products; what roles can library media teachers play?
- Other theories of social-emotional well-being and self-determination should be examined (e.g., Wehmeyer) in light of research processes and products.
- What impact would interventions play, as noted above, in students' research processing and products?

In the final analysis, conducting research is an emotional and social process as much as it is an intellectual one. Therefore, library media and classroom teachers should pay

attention to these dynamics in a pro-active way so students will be more successful in each of these developmental domains.

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Part III

Organizational Concerns and the Learning Commons



Principals' Knowledge and Understanding of School Library Programs and School Librarians: Perspectives of Supportive School Administrators

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Note:

This paper focuses primarily on the first two phases of a project intended to identify what principals should know and understand about school library programs and what school librarians should do to garner their support. Findings for phase two of the project are described. Data collection and analysis are currently underway for third phase of the project.

Introduction and Background

Research has revealed that principal support is critical to the success of a school's library program (Hartzell, 2002a; Haycock, 1999; Oberg, 2006; Todd, 2007). As the school's instructional leader and manager, the principal shapes the school culture, sets expectations for the school's staff, and usually has the final word in budget decisions (Donham, 2008). According to Hartzell (2002a), these activities influence the size and quality of the library collection, the level of collaboration between teachers and the librarian, and the opportunities the librarian has for leadership responsibilities beyond the library. For these reasons, the principal's impact on the school's library program is difficult to overemphasize. Principal and school librarian collaboration is essential to the development of an effective library program.

Although there is evidence that successful school librarians enjoy principal support (Baldwin, 1995; Farwell, 1998; Morris & Packard, 2007), many school librarians believe that principals do not understand or appreciate their role (Campbell, 1991; Lewis, 1991). A consistent finding across studies of principals' perceptions of school librarian roles or competencies indicates that they consider activities related to materials provision and reference assistance as more important than collaboration, planning with teachers, and curriculum development (Dorrell & Lawson, 1995; Kolenick, 2001; Marcoux, 2005). The relatively low priority principals have for the instructional and curricular leadership role of the school librarian stands in contrast to the findings of several studies which show that collaboration between classroom teacher and librarians can have a positive impact on student achievement (Haycock, 2007; Lance & Loertscher, 2005; School Libraries Work, 2008). Unfortunately, little attention is given to the role of the school librarian or the school library program in principal preparation programs and in the journals read by most school administrators (Hartzell, 2002b; Kaplan, 2006; Wilson & McNeil, 1998).

Past studies of principal perceptions of school librarians and school library programs have targeted principals from a particular state or region (see, for example, Alexander, Smith, and Carey, 2003; Dorrell and Lawson, 1995; Kolencik, 2001; Marcoux, 2005; Shannon, 2009). This project draws on data from two groups: (1) principals who have received national recognition, recognition from one of AASL's state affiliate organizations or who have been nominated by a school librarian for having shown support for school library programs and (2) a panel of national school library leaders.

Purposes of the Project:

- To determine how school principals come to know and understand the role of school library programs and their impact on student learning.
- To identify those elements and concepts related to school library programs and school librarians important for school administrators to know and understand in order to support school library programs in realizing their potential to impact learning and teaching.
- To articulate "best practices" for school librarians to employ to garner the support of their school principal.
- To develop a module to include in a course for prospective school principals to inform them of the potential role of school library programs and school librarians and provide ideas for how they can support the library programs in their schools.

Research Questions/Administrators

1. How do school administrators who understand the potential of and work to support school library programs attain such knowledge and understanding?
2. What elements do these school administrators identify as important for principals to understand in order to support the library programs and school librarians in their schools?
3. What recommendations do these school administrators have for how the SLP should be evaluated?
4. What competencies do these administrators think are important for SLs to possess?
5. What recommendations do these school administrators have for SLs who want to gain the support of their school administrators and educate them about the potential impact of SLPs?
6. What recommendations do these school administrators have for what should be included about SLPs in preparation programs for principals?

Research Questions/School Library Leaders

1. What recommendations do school library leaders have for ways principals can support SLPs?

2. What recommendations do school library leaders have for SLs who want to gain the support of school administrators?
3. What recommendations do they have for how the school principal should evaluate the SLP?
4. What recommendations do they have for what should be included about SLPs in preparation programs for school administrators?

Methods and Data Collection

Project Phase One

The first phase of the project entailed developing the principal and school library leader surveys, identifying a national sample of school principals and school library leaders, piloting the surveys, and revising them.

Project Phase Two

The second phase of the project entailed conducting the principal survey and analyzing the data from the survey.

Project Phase Three

During the third phase of the project, school library leaders are being surveyed and data from the survey will be analyzed. This part of the project is currently underway.

Project Phase Four

During the final phase of the project a course module for prospective principals will be developed and piloted.

The Surveys

Surveys were created using Qualtrics online survey software. Before the surveys were finalized, they were reviewed by three LIS faculty members whose area of expertise is school librarianship. In addition, three school principals reviewed and made suggestions for revisions to the survey for school administrators. Their comments were used to make revisions to the survey. Pilot surveys were then administered. "Head" principals in the South Carolina Association of School Administrators membership database were emailed a link to the survey for school administrators and a link to the school library leader survey was posted to the South Carolina Association of School Librarians listserv. Revisions to both surveys were made following analysis of the results of the pilot surveys.

School Administrator Survey

In addition to demographic questions related to job title, years of experience, and school level, administrators were asked in the following sets of closed-ended questions:

- (1) to identify how they came to their knowledge of school library programs,
- (2) to rate the importance of specific actions a school principal might employ in support of the school library program in his/her school,
- (3) to rate the importance of specific tools or strategies school administrations might use to evaluate the library program,
- (4) to identify the three most important competencies for SLs to possess,
- (5) to rate the importance of specific actions a school librarian might take in order to gain the support of the principal for the SLP, and
- (6) to rate the importance of specific topics related to school library programs for a prospective principal to learn about as part of his/her pre-service preparation program.

Following each closed-ended questions, respondents were able to add to the lists of actions, tools, strategies, etc. or make other suggestions.

School Library Leader Survey

In addition to demographic questions related to job title, years of experience, and school level, school library leaders were asked in the following sets of closed-ended questions:

- (1) to rate the importance of specific actions a school principal might employ in support of the school library program in his/her school,
- (2) to rate the importance of specific actions a school librarian might take in order to gain the support of the school principal,
- (3) to rate the importance of specific tools or strategies school administrations might use to evaluate the library program, and
- (4) to rate the importance of specific topics related to school library programs for a prospective principal to learn about as part of his/her pre-service preparation program.

Following each closed-ended questions, respondents were able to add to the lists of actions, tools, strategies, etc. or make other suggestions.

Samples

To identify a national sample of school administrators for this study, AASL members were asked to submit the names of and contact information for K-12 school administrators who have received national or state awards in the past five years for their support of school library programs or administrators they know who have been supportive of school librarians and school library programs in their states. This resulted in a sample of 96 school administrators who were emailed a link to the online survey.

The target sample for the survey was school library leaders made up of AASL officers, Affiliate Assembly delegates, AASL directors and directors-elect, and AASL committee chairs from the past two years. Their names and contact information were obtained from the AASL webpage. This resulted in a sample of 198 school library leaders.

School Administrators

Of the 96 principals who received a link to the questionnaire, 30 (31%) started the survey and 27 (28%) completed the entire survey including 17 building level principals, 6 superintendents, and 4 district office administrators (other than superintendents). Of the 27 respondents who completed the entire survey, twelve reported having more than 20 years experience as a school administrator, three had between 16 and 20 years of experience, six had between 11 and 15 years of experience, two had between 6 and 10 years of experience and four reported having up to 5 years of experience. Respondents came from 23 different states.

Research Question One

How do school administrators who understand the potential of and work to support school library programs attain such knowledge and understanding?

Respondents were presented a list of possible sources of their knowledge and understanding of school library programs and asked to check all that apply. The list of sources was "randomized" so that the items did not appear in the same order for all respondents. In a follow-up question, they were asked to indicate which one was most important. In a third question, respondents were given the opportunity to offer additional factors that have contributed to their knowledge and understanding of school library programs.

Twenty-eight of the thirty respondents indicated that working with a school librarian in their role as a school administrator contributed to their knowledge and understanding of school library programs while only five indicated that they learned about school library programs as part of their pre-service preparation program. It is interesting to note that two-thirds of respondents reported that reading the professional literature was one of the ways they learned about school library programs. [See Table 1.] Seventeen of the thirty respondents offered additional factors that influenced their knowledge and understanding of school library program. Of those, just ten responses suggested factors other than those included in the checklist:

- Working with district level library program supervisors (three respondents)
- Working with other librarians
- Conversations with teachers about the school librarian's contribution to the instructional program
- Familiarity with information literacy

- Serving on a media technology advisory committee
- Reading listserv information shared by the librarian.
- Personal love of libraries from childhood

Table 1 Factors influencing knowledge and understanding of school library program
[N=30]

	Number of respondents	% of total number of respondents
Working with a school librarian where I am/was an administrator	28	93
Reading professional books and journals in education and/or librarianship	20	67
Becoming familiar with state and national standards and guidelines for school library programs	19	63
Working with a school librarian in a school where I was a teacher	17	57
Exchanging ideas with other administrators	15	50
My experience as a K-12 student	12	40
My child's experience as a K-12 student	8	27
Professional development or in-service sessions	8	27
My school administrator pre-service preparation program	5	17
Other	5	17

In a follow-up question, respondents were asked which factor contributed most to their knowledge of school library programs. Twenty-eight of the thirty responses were judged to be relevant. Twenty-one of those respondents said that working with a librarian was the most important source of their knowledge of school library programs. Of those, twelve responded that "working with a school librarian where I am/was administrator" was the most important factor. Two identified "working with a school librarian in a school where I was a teacher" as the most important factor. Seven others also responded that working with a librarian was the most important factor in their knowledge of library programs but did not specify whether this was in his/her role as a teacher or administrator. None of the respondents indicated that a pre-service preparation program was the most important factor in their knowledge and understanding of school library programs. Respondents were also asked to answer the closed-ended question "How important is it for prospective school principals to have exposure to topics/issues related to school library programs included in their pre-

service preparation program?" Options included "Very Important," Somewhat Important, "Not Too Important," and "Not At All Important." Of the thirty respondents, twenty-four (80%) indicated it was "Very Important" and five (17%) indicated it was "Somewhat Important" and only one answered that it was "Not Too Important." So, although the school administrators responding to this survey had not been exposed to school library programs as part of their pre-service preparation, they think it is important to include.

Research Question Two

What elements do these school administrators identify as important for principals to understand in order to support the library programs and school librarians in their schools?

Respondents were presented a list of strategies that principals might employ to support the library program or school librarians and asked to rate them as "Very Important," "Somewhat Important," "Not Too Important," or "Not At All Important." The list of strategies was "randomized" so that the items did not appear in the same order for all respondents. It is gratifying to note that over 90% of respondents indicated that it is "Very Important" for principals to communicate the importance of the library program to teachers and students and to encourage planning between the school librarian and classroom teachers. But all strategies with the exception of "Provide adequate support staff" received a rating of "Very Important" by a majority of principals. Given the importance of adequate staff to ensure that the school librarian is able to have time to collaborate with other school staff, this result is disappointing. [See Table 2.]

Table 2 [N=29]

4=Very Important 3=Somewhat Important 2=Not Too Important 1=Not Important At All

Please indicate the importance of each of the following strategies a school principal could employ in support of the school library program in his/her school	Mean rating	% of "Very Important" ratings
Communicate the importance of the library program to teachers and students	3.97	97
Encourage planning between the school librarian and classroom teachers	3.93	93
Feature library program events and activities at parent-teacher association meetings or other community gatherings	3.90	90
Provide financial resources necessary to operate an excellent library program	3.86	86
Communicate vision for the school library program to the school librarian	3.79	79
Allocate time for planning between the school librarian and	3.79	79

classroom teachers		
Appoint school librarian to school leadership teams such as grade level or department head groups and other key school committees	3.79	79
Encourage school librarian to join professional organizations	3.76	76
Encourage the school librarian to lead professional development sessions for other educators in the school district	3.72	72
Encourage the school librarian to make visits to schools with exemplary library programs	3.72	76
Support school librarian attendance at professional conferences	3.69	69
Encourage school librarian to lead professional development sessions for members of the school community	3.69	69
Evaluate school librarian with an instrument specifically designed for assessing the work of the school librarian (rather than using one designed for evaluating classroom teachers)	3.66	69
Promote library program activities to local media, in school or district newsletters and on the school website	3.62	66
Include collaboration with the school librarian as an expectation during classroom teacher annual evaluation review	3.52	62
Provide adequate support staff (such as a library aide or some other form of clerical assistance)	3.38	45

Of the twenty-nine respondents, fifteen offered additional strategies asked for in a follow-up, open-ended question. Some of the themes that came through in these responses were related to scheduling student access, scheduling time for collaboration with teachers, principal participation in sharing books with students, and encouraging the librarian to teach research skills.

Research Question Three

What recommendations do these school administrators have for how the SLP should be evaluated?

Respondents were presented a list of possible tools or strategies school administrators might employ when evaluating their school's library program and asked to rate them as "Very Important," "Somewhat Important," "Not Too Important," or "Not At All Important." The list of strategies was "randomized" so that the items did not appear in the same order for all respondents. It is interesting to note that "Informal visits and observations" were rated as "Very Important" by all twenty-seven respondents who

answered this set of questions and that "Standardized test scores" received the least number of "Very Important" ratings. [See Table 3.]

Table 3 [N=27]

4=Very Important 3=Somewhat Important 2=Not Too Important 1=Not Important At All

Please rate the importance of the following tools/strategies for school administrators to use when evaluating the school library program	Mean rating	% of "Very Important" ratings
Informal visits and observations	4.00	100
Reports of library use	3.74	74
Formal observation of school librarian	3.70	74
Faculty surveys	3.33	52
Librarian lesson plans	3.30	41
Student surveys	3.26	33
District or state developed evaluation form/process	3.19	41
Student interviews	3.11	30
Faculty interviews	3.11	33
Teacher lesson plans	3.11	37
Standardized test scores	2.85	26

Of the nine respondents who answered a follow-up question requesting suggestions for other ways to evaluate the library program, three reiterated what was already on the list and six offered some additional methods:

- "...meetings and informal discussions..."
- "...ongoing, daily observation and conversation is the mainstay of evaluation..."
- "...feedback from stakeholders..."
- "Observation of collaboration meetings with media specialist and teachers. Observation of collaborative lessons..."
- "Personal PD [professional development] plans"
- "...a simple report at the end of the year where the librarian would self-evaluate their program and provide evidence of achievement of goals. The librarian should provide a growth plan for the program at the beginning of the school year....to be shared with teachers and administration for additional suggestions/ideas and general supportive approval."

Research Question Four

What competencies do these administrators think are important for SLs to possess?

In an open-ended question, administrators were asked to list the three most important competencies they look for when hiring a school librarian. Twenty-seven respondents answered this question. Responses were analyzed for specific hiring criteria and then

categorized after reading, rereading, and sorting the data. Most responses fell into one of two general categories: (1) affective skills and dispositions or (2) knowledge and skills. A few responses were too general to categorize. For examples, two respondents listed "qualifications" as one criterion for hiring; another listed "experience."

Affective skills and dispositions. Of the 27 respondents, 23 included one or more competencies in this category. Subcategories included (1) interpersonal/people skills, (2) communication skills, (3) collaboration skills, and (4) other personal dispositions. Interpersonal/people skills were mentioned 11 times. Examples include:

- "great people skills"
- "works well with people"
- "approachable"
- "ability to work with other professionals"

Specific mention of communication skills by five respondents included:

- "ability to communicate with teachers and students"
- "great communication skills"
- "ability to communicate with teachers and students"
- "ability to communicate with a variety of audiences for a variety of purposes"

It is interesting to note that six respondents specifically used some form of the word "collaborate." For example:

- "ability to collaborate with others toward a common goal"
- "... understand the importance of collaboration and have a plan for collaborating"
- "willingness to work with teachers to design and implement collaborative lessons/units"

Other competencies identified by respondents that relate to dispositional characteristics or skills included "organized" (mentioned twice) and the following each mentioned once: "attitude," "creativity," "disposition," "flexibility," "innovative," "initiative," and "strong work ethic."

Knowledge and skills. The second category into which open-ended responses to this question fell were knowledge and skills specifically related to the work of school librarians. Of these, statements related to general knowledge of the job was mentioned most often (nine times) followed by technology (eight times). See Table 4 below for a summary of the areas mentioned by respondents. In addition to these, one respondent included "instructional leader," one included "familiarity with 21 century teaching and learning," and another included "foster connection between living and learning."

Table 4 Knowledge and Skills Competencies Subcategories

Knowledge and Skills subcategories	Examples of responses
General knowledge of the job	<ul style="list-style-type: none"> • "Knowledge of library programs" • "Administrative knowledge of running a library" • "Knowledge base" • "Professional knowledge"
Technology	<ul style="list-style-type: none"> • "Background knowledge and willingness to stay abreast of the developing technology and systems" • "Technological proficiency" • "Technology expertise" • "Knowledge and ability to use instructional technology for instruction"
Curriculum and standards	<ul style="list-style-type: none"> • "Knowledge of media curriculum" • "Knowledge of instructional program" • "Knowledge of Core Standards"
Vision	<ul style="list-style-type: none"> • "Visionary" • "Ability to speak about their passion for the use and purpose for the school library and how it supports students and teachers"
Books and reading	<ul style="list-style-type: none"> • "They can get kids excited about reading" • "Knowledge of current literature/trends"
Resources	<ul style="list-style-type: none"> • "Knowledge and appreciation of a wide range of resources" • "Commitment to on-going training/use of electronic resources"
Information literacy/Research skills	<ul style="list-style-type: none"> • "Knowledge of research skills" • "...strong grasp of information literacy skills and how they will teach them to students"
Teaching experience or teaching skills	<ul style="list-style-type: none"> • "Teaching experience" • "Experience as an educator"

Research Question Five

What recommendations do these school administrators have for SLs who want to gain the support of their principal for the SLP?

Respondents were presented a list of strategies that school librarians might employ to garner the support of the principal in their schools and asked to rate them as "Very Important," "Somewhat Important," "Not Too Important," or "Not At All Important." The list of strategies was "randomized" so that the items did not appear in the same order for all respondents. Most respondents rated each of the strategies as "Very Important" or "Somewhat Important" with the exception of "Meet regularly with a library advisory committee." Only 39% rated this activity as "Very Important." Activities judged most important were: (1) articulating goals and objectives for the library program, (2) sharing a vision for the library program, (3) engaging in systematic evaluation of the library program, (4) meeting with the principal on a regular basis, and (5) submitting a written budget request. [See Table 5.]

Table 5 [N=28]

4=Very Important 3=Somewhat Important 2=Not Too Important 1=Not Important At All

In order to garner support from the school principal, how important is it for school librarians to engage in each of the following activities?	Mean rating	% of "Very Important" ratings
Articulate goals and objectives for the library program	3.89	89
Share vision for the school library program with stakeholders	3.82	82
Engage in systematic evaluation of the library program	3.82	82
Meet with the principal on a regular basis to discuss the library program	3.79	79
Submit a written budget request to the school principal on an annual basis	3.79	79
Meet regularly with grade level chairs or subject area department heads to discuss the role of the library program	3.75	75
Articulate policies and procedures for use of library services and resources	3.71	71
Make regular reports related to the use of library services and resources to the principal	3.64	68
Share strategic plans for the library program with members of the school community	3.64	64
Share and discuss national and state standards for school library program with stakeholders	3.57	61
Meet regularly with a library advisory committee (that includes representatives from all school community stakeholder groups including a school administrator) to discuss the library program	3.29	39

When asked to suggest additional strategies a school librarian might employ in order to garner the support of the school's principal, four respondents made suggestions and a fifth included a comment.

Suggestions:

- "Include specific stakeholder friendly information during parent nights"
- "Encourage the administrator to observe classes, events, etc. regularly. (Schedule it on the principal's calendar.)"
- "Sponsor schoolwide activities (EcoArt, Teacher Work Day, ReUKnighted with Reading. Displays of Student/Teacher work) and teach."
- "Communication and follow through on programs is a key to gaining support from the principal. The principal needs to see the librarian as more than just an itinerant. The librarian needs to discuss the library curriculum, activities, events, successes and needs with passion. The librarian must take pride in his/her program. They must do the best with what they are given and make the library (regardless of size) an inviting and comfortable environment that is pleasing to the eye and the spirit."

Comment:

- "These questions appear to relate more to a library program that may not be well-established or have a need to engage all stakeholders. My experience is that once an exemplary program is established, the need to continually promote, justify, etc. is not needed because all stakeholders see the benefits of a strong program."

Research Question Six

What recommendations do these school administrators have for what should be included about SLPs in preparation programs for school administrators?

Respondents were presented a list of school library related topics (in the form of questions) that might be included in a course for pre-service school principals and asked to rate them as "Very Important," "Somewhat Important," "Not Too Important," or "Not At All Important." The list of topics was "randomized" so that the items did not appear in the same order for all respondents. Encouraging collaboration between classroom teachers and the school librarian received the highest rating followed closely by how to hire a top notch school librarian, the role of the school librarian in instruction, and more specifically the role of the school librarian in teaching information literacy, critical thinking skills, and the ethical use of information. Those topics not considered as important as the others were related to handling challenges to library materials and the role of the librarian in student assessment. [See Table 6.]

Table 6 [N=27]

4=Very Important 3=Somewhat Important 2=Not Too Important 1=Not Important At All

Think of these questions as possible topics that might be included in a module in a school principal's pre-service preparation program. How important is it for school principals to be able to answer each of them?	Mean rating	% of "Very Important" ratings
How can I encourage collaboration between classroom teachers and the school librarian?	3.96	96
How do I go about hiring a top notch school librarian?	3.93	93
What is the instructional role of the school librarian?	3.93	93
What is the role of the school librarian in teaching information literacy and critical thinking skills?	3.93	93
What is the role of the school librarian in teaching students and teachers about the ethical use of information?	3.93	93
What does an exemplary school library program look like?	3.89	89
How does the school librarian develop a relevant collection of materials and resources in a variety of formats to support the curriculum and student interests?	3.81	81
What is the role of the librarian in the school's reading program?	3.81	85
How do I determine an adequate annual budget for the library program?	3.78	78
What impact can the library program have on student achievement?	3.78	89
How does the library program ensure equitable physical and virtual access to library services and resources?	3.70	70
What is the role of the school library in teaching technology skills?	3.67	67
What do I do if a parent or other community member objects to a library book or other library materials?	3.52	52
What is the role of the school librarian in assessment of student learning?	3.37	44

Respondents were then asked to add any topics related to school library programs they thought should be included in the pre-service preparation program of school principals. Four respondents offered additional topics:

- "In times of budget cuts, why this is the program that should not be cut"?
- "What is the role of the librarian as a school leadership team member?"
- Making sure the school librarian knows the demographic make up of the student population. For example, our school, the alternative school, has its own set of demographics and student needs that are completely different than any other school in the county. Match needs with materials/programs."

- “How to involve parents and community members in school library programs and in reading programs to support general student success.
- “State and national standards.”

Significance of the Study

Effective school library programs will not be realized without strong collaborative partnerships between school principals and school librarians. Results of this study will inform the practice of individual school librarians, district school library directors, and school library educators who are preparing the next generation of school librarians. Findings can also be used by school librarians and school library educators to approach colleges of education and those who are responsible for school administrator preparation programs to integrate information related to school librarianship into their course work. Administrators are critical to the success of school library programs. Therefore, it is important to develop ways to inform and educate them about (1) the potential positive impact of school library programs on student achievement, (2) the role of the school librarian in support of teaching and learning, and (3) what they can do to support school library programs and school librarians in their schools and districts.

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Sustainability and Usability Issues for 21st Century Library Book Collections

The Case of New Jersey School Libraries

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Abstract

A study of the book collections of New Jersey school libraries presents issues of size and currency that impact the sustainability and usability of these collections. Data originate from the state-wide study, *One Common Goal: Student Learning*, commissioned by the New Jersey Association of School Librarians and conducted by the Center for International Scholarship in School Libraries. The analysis includes the book collections of 298 New Jersey school libraries that use *TitleWise* software created by Follett Library Resources, Inc.. The results of *TitleWise* analyses performed by each participating library are aggregated to present a detailed profile of the size and currency of the book collections in New Jersey school libraries with respect to school type and socioeconomic status schools, as designated by the New Jersey Department of Education. Findings point to the need for a paradigm shift from isolated to collaborative strategies for developing sustainable print collections. Usability issues indicate a user-centric, rather than institutionalized, library-centric approach to selection and acquisition of print materials.

Background to the Study

School libraries are an integral part of the educational landscape in New Jersey. The earliest national research on the impact of school libraries on student learning was undertaken there. Mary Gaver, a professor in the Graduate School of Library Services at Rutgers University, led a major research study, *Effectiveness of Centralized School Library Services in Elementary Schools* (1963), involving 271 schools in 13 states. In this tradition successive school library impact studies present an extensive body of research that shows school libraries are factors in student achievement. Some of these studies present a statistical correlation between school library collections and student achievement (Burgin and Bracy, 2003; Lance, et al., 2000; Smith, 2001). This article presents data from a statewide study school library impact study, "*One Common Goal: Student Learning*" which took place in New Jersey from 2009-2011. Commissioned by the New Jersey Association of School Librarians, the study was conducted by the Center for International Scholarship in School Libraries at Rutgers University. The study aimed to capture the status of New Jersey's school libraries and to understand the contribution of quality school libraries to education in New Jersey. Since data for Phase 1 of the study

were collected during the 2009-2010 school year, these data represent the status of the libraries prior to school library budget cuts that have been in effect since the fall of 2010.

Purpose of the Study

The underlying question of the study is whether print collections, particularly book collections, can be sustained in a digital age. While it may seem a forgone conclusion that print materials are endangered, they dominate library collections located in schools where the prevailing mode of instruction is print-based. The questions that this study addresses are:

- 1) What is the status of print collections in school libraries in terms of their size and currency?
- 2) What do the data indicate about the sustainability and usability of these collections?
- 3) What are the implications of these findings for the future of school libraries in a digital age?

Literature Review

A focused retrospective review of the collection development literature provides points of reference for the interpretation of this study's quantitative data. The review is historical by design: It captures the emergence of seminal issues in school library collection development that are relevant to this study.

Sustainability and usability issues are implicit in research on school library collections for the last three decades. The idea that circulation of library materials is restricted to local patrons has been challenged for several years. There have been undercurrents of concern about the sustainability of discrete and comprehensive school library collections that are duplicated across and within school districts. Overlap studies report that school libraries have unique titles suitable for sharing with public libraries, and that there is a great deal of overlap among schools in the same district (Altman, 1971; Doll, 1983; 1984; 1985). Doll (1983) reported that the overlap of school and public library collections approaches 50 percent. In the wake of rising costs of print and digital resources and declining budgets, models of cooperative collection development have been gaining momentum in specialized libraries (Dominquez and Swindler, 1993). In all kinds of libraries interlibrary loan is well-established as an essential library service. Walker (1982; 1983) reported that when interlibrary loan is provided and promoted, it is used extensively by high school students, teachers, and administrators. Libraries have adopted the concept of shared resources, and even shared responsibilities. Current research looks at how shared resources raise the profiles of libraries in a community and the characteristics of successful partnerships (Brown, 2004).

In libraries collection mapping is a well-known tool that facilitates communication about collections holdings and resources and facilitates dissemination of collection content to potential library users and to the broader community of public libraries, other schools, and local curriculum committees (Ho and Loertscher, 1985; 1986). Mapping the collection encourages collection review and weeding, facilitates collection goal setting that supports curriculum, and leads to long-range acquisition plans (Ho and Loertscher, 1985; 1986). Cooperative purchasing is a less popular option for spreading the library budget. Weeks' study (1992) reported when this strategy was implemented between school and public libraries it was rated as a low need. Outsourcing of the librarian's material selection function to vendors raises the question of material selection as a core function of librarianship (Wallace, 1997).

Another trend in the literature shows reflects concerns about the usability of school library book collections, particularly with regard to user participation in collection development. Mosher (1979) found that surveying users to improve collections was not part of the collection development process. Prior to 1985 almost half the nation's collections were developed without a written collection policy (Woodworth, 1976; Kamhi, 1981; 1984; Kamp, 1986). By the mid 80's a majority of school librarians had a selection policy in place (Miller and Moran, 1985-86) which ensured that standards common to all school libraries guided the selection of print materials by library professionals. Collection development policy grew in importance so that now it is considered a management tool (Woolls, 1986) that accommodates school mission and curriculum, criteria for selection, and identification of user needs (Doll and Barron, 2002). Several studies in the 1970's found that teachers exert a strong influence in the selection process (Callison, 1990). Blazek (1971) found a high degree of teacher influence in acquisitions although a majority of school librarians reported that they had no systematic process for involving teachers.

Despite this high reliance on experts and professionals in the selection process, Callison (1991, 119) notes:

Although there is a great deal written about 'how we provide good materials for the low achiever' or 'special reading collections for individuals whose second language is English,' very little appears in the school library research concerning methods for development of collections to meet the special information needs of various minority groups.

The issue of user input and usability of school library collections in terms of their appeal to young readers has been an issue in the literature.

Concerns of sustainability and usability are implicit in the emergence of evaluation criteria for school library collections, as well as other library functions.

Studies conducted in the 1960s and 1970s that attempted to evaluate the quality of school library collections centered on the use of quantitative measure. The basic

assumption was 'more is better' This reflected the context of the times and the need to grow, to invest, and to collect extensively to demonstrate the potential of media center programs supported with a wide variety of materials." (Callison, 1991, 117)

The annual longitudinal study of the American Association of School Librarians (2007) and *School Library Journal* spending surveys closely monitor the ebbs and flows of school library budgets, staffing, book collections, and even the price of books. The surveys identified size and currency as primary benchmarks for collection evaluation using quantitative methods.

A major flaw of quantitative measures is that administrators place too much emphasis on counting things with little regard to quality... collections may meet an arbitrary number count but be out of date, in poor condition, or of no value to the current curriculum. (Woolls, 1994, 207-8)

Two early studies in Michigan used qualitative measures. A checklist in one study compared Biology titles listed by experts to the collection. This measure was compared with the total number of books and the number of books per student (Jones, 1965). A second study used copyright date to add currency to the criteria. Use studies were based on bibliometrics and citation analysis (Schmitz, 1966). Mancall and Drott (1983) took a user-centric approach to analyze students' sources and references. Findings showed students used books from home and other libraries that tended to be dated or inappropriate sources Callison (1988) used citation analysis to identify specific titles students selected from online databases and from collections outside their local school. Aversa and Mancall (1989) and Callison and Daniels (1988) documented methods for maintaining a record of students' material use rates. "Such data must be maintained for several user groups on a variety of projects and over several semesters in order to be meaningful." (Callison 1988, 118) In other studies the record of what the researcher used became a map for selecting purchases. Academic and research libraries are adopting the conspectus methodology of collection analysis and evaluation that applies qualitative measures (Jakubs, 1989). The model establishes levels of service from a minimal information level to a comprehensive level, with varying degrees of basic instruction and research support. Collection depth indicators from 0 to 2 rate the collection in terms of levels of service. The shift to qualitative evaluation in the past two decades has been controversial: School librarians express a need for concrete standards to support their advocacy for better funded book budgets.

Issues of sustainability and usability are becoming less transparent as school library budgets are strained to include digital resources and the attendant equipment that provides accessibility to information at a time when substantial cuts are being made in librarians' jobs and in school libraries themselves. These events have precipitated discussion about the future of school libraries, but no substantive discussion is underway in the school library literature that addresses how school library collections can improve sustainability and usability. The focus is on raising the profile of school

libraries through a defensive approach that re-iterates traditional concepts of collection management. This study examines what typical school library book collections look like, in terms of size and currency, in order to better understand the issues of sustainability and usability, and to identify assumptions and traditional practices in collection development and management.

Methodology

Data were collected from an online survey of 765 school libraries in Phase 1 of the study to determine the status of school libraries in New Jersey with respect to their infrastructure, personnel, resource and information technology provision, and instructional and administrative work. An advisory board of experienced school librarians participated in the selection of fifteen school librarians who beta-tested an online survey developed by CISSL researchers. This group included elementary, middle, and high school librarians from rural, suburban, and urban school districts in the state of New Jersey. The survey was administered to the group, followed by discussions that guided the revision of the survey. This survey included questions about non-book collections. One survey question established that 474 libraries from the original sample size of 765 libraries used *TitleWise*, a database that provides comprehensive statistics on the size and currency of individual school library collections for those librarians who elect to use it. Of the 474 *TitleWise* users, 71 percent, or 335 respondents granted CISSL permission to access and use their *TitleWise* accounts. Of those records, 298, or 89 per cent, were complete and usable. The total percentage of usable *TitleWise* accounts that supplied data for analysis of school library collections was 39 percent of the total number of survey respondents comprised of *TitleWise* users and non-users. The *TitleWise* records of these school libraries were merged to create an aggregated record for analysis.

TitleWise is an open source collection analysis tool created by Follett Library Resources in 2003. All school librarians with automated library management systems can access *TitleWise* from the Follett website, where they upload MARC records from their electronic library catalogs. The program generates reports that help librarians identify strengths and weaknesses of their school library or district collections. The intent of the collection analysis using *TitleWise* in this study is not to analyze and evaluate individual school library collections, but to aggregate the 298 usable *TitleWise* accounts to generate a snapshot of New Jersey school library collections. The reports generated from these individual accounts were compiled in Excel spreadsheets and the data were "cleaned" to eliminate duplicate records or records with no or little data. Each school in the sample was designated by school type (i.e., elementary, elementary middle, middle, middle high, and high school libraries) and by socioeconomic categories adapted from District Factor Groups (DFG) created by the State of New Jersey Department of Education. The database was sorted by school type and DFG for analysis. When the school type or DFG were not available the schools were deleted from the sample. The

analysis is limited to *TitleWise* accounts that contain richly detailed data about school library collections.

Overview of the Collections

An overview of the collections in the sample was calculated by counting the total number of books in the aggregated collection, with a breakdown of non-fiction and fiction books. Table 1 summarizes the basic features of the aggregated collection. This overview reveals data from *TitleWise* on size and currency.

Total number of books in the aggregate	3,918,667
Non-fiction	2,420,983 (62%)
Fiction	1,497,684 (38%)
Total enrollment of sample schools	248,947
Mean number of books per student	15.7

Average non-fiction copyright date	1989
Average fiction copyright date	1989
Average copyright date of book collections	1989

Table 1: Overview of the Collections of New Jersey School Libraries
n = 298

While the total number of books seems healthy, the number of books per student is slightly under what is considered adequate. The first issue of size is the uneven distribution of fiction and non-fiction, which is analyzed across school types. Figure 1 summarizes a breakdown of 62 percent of the aggregated collection that are non-fiction books.

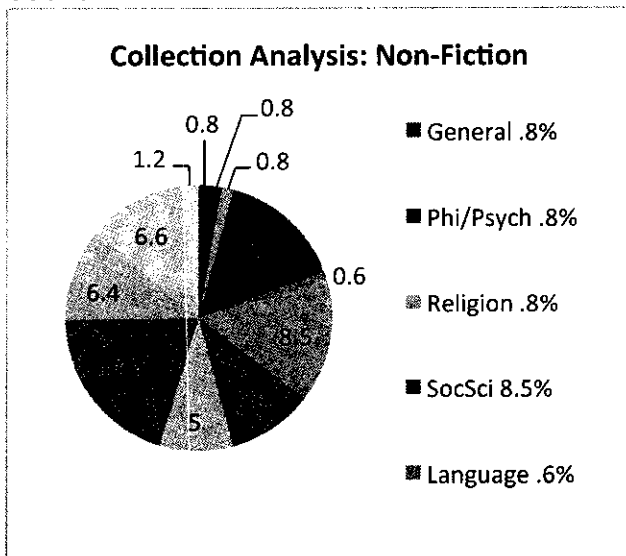


Figure 1: A Summary of Non-Fiction Books by Percentage of the Collections
n=298

In keeping with the instructional program of middle and high school libraries, the percentages reflect the volume of library use for class assignments and projects. Geography/History and Social Sciences have the highest percentage of books, which accommodates the traditionally high usage rates of Social Studies classes. The disparity between the numbers of fiction and non-fiction books reflects a long-standing assumption that school library collections should support school curriculum. The low percentage of Reference books (6.4) may be attributed to librarians' adjustment for digital access to non-fiction materials on the world-wide-web and in electronic databases.

Figure 2 summarizes a breakdown of the 38 percent of the collections that are fiction books. "Custom cataloging" refers to a miscellaneous pool of material types specific to an individual collection, e.g. Graphic Novels.

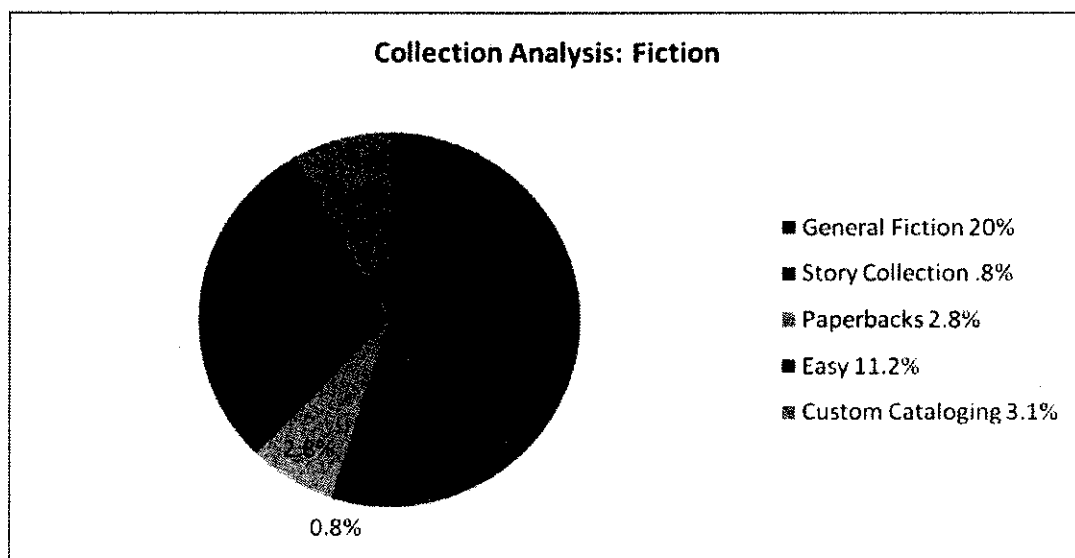


Figure 2: A Summary of Fiction Books by Percentage of the Collections
n=298

General Fiction is comprised of hard cover, usually library-bound volumes that favor classic titles. However, most readers in secondary schools prefer paperbacks and young adult novels that are relevant to the problems and issues of adolescents. While boys prefer non-fiction, most girls prefer to read fiction. In addition, the low number of Easy Reading books does not support the needs of struggling and reluctant readers. An analysis by school type distinguishes between elementary and secondary collections with regard to the fiction-non-fiction gap.

Analysis of the Size of Collections by School Type

The size of fiction and non-fiction collections is reported in the sample collection in three ways: 1) The actual number of fiction and non-fiction books in the 298 school libraries; 2) The mean of fiction and non-fiction books calculated from the sum of all

books in the 298 school libraries; 3) The percentage of books in the sample collection that are fiction or non-fiction.

Figures 3 and 4 show the actual numbers of non-fiction and fiction books across five school types that indicate the grade levels served.

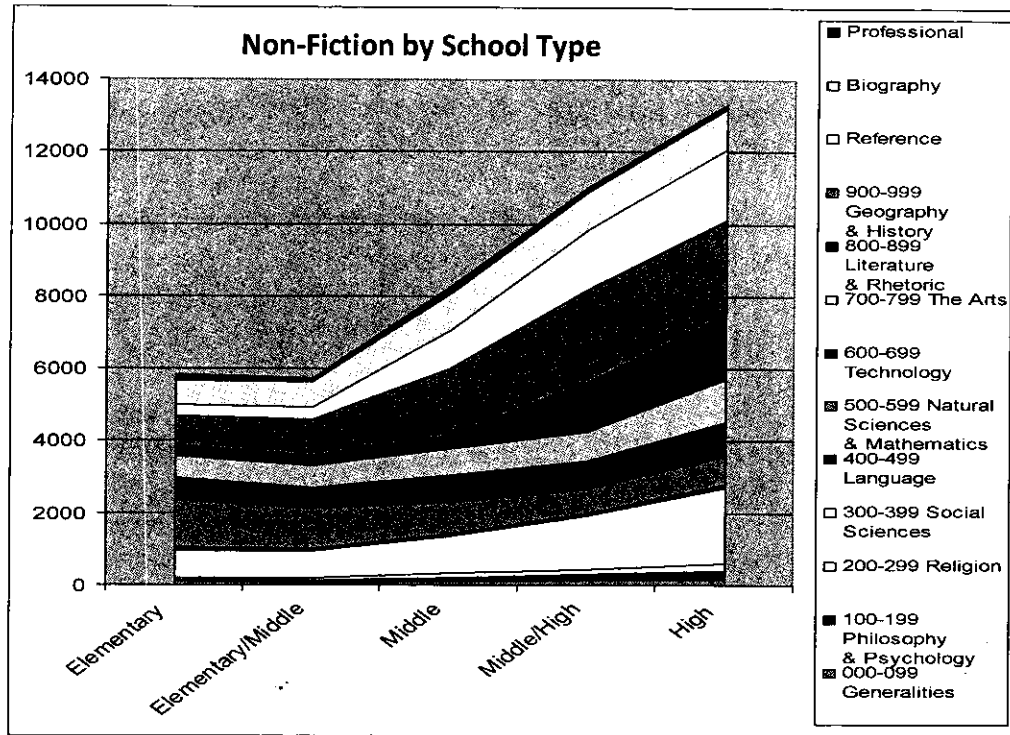


Figure 3: Non-Fiction by School Type
n=298

It is evident in Figs 3 and 4 that fiction collections decline steadily as non-fiction dominates high school collections. This is a steady trend that begins in middle school collections. Fig. 3 also shows how the non-fictions collections are balanced across the Dewey Decimal areas that match school curricula, with emphasis on those Dewey areas that lend themselves to inquiry and resource based learning. Figure 4 presents the average number of fiction books in the same collections across school types.

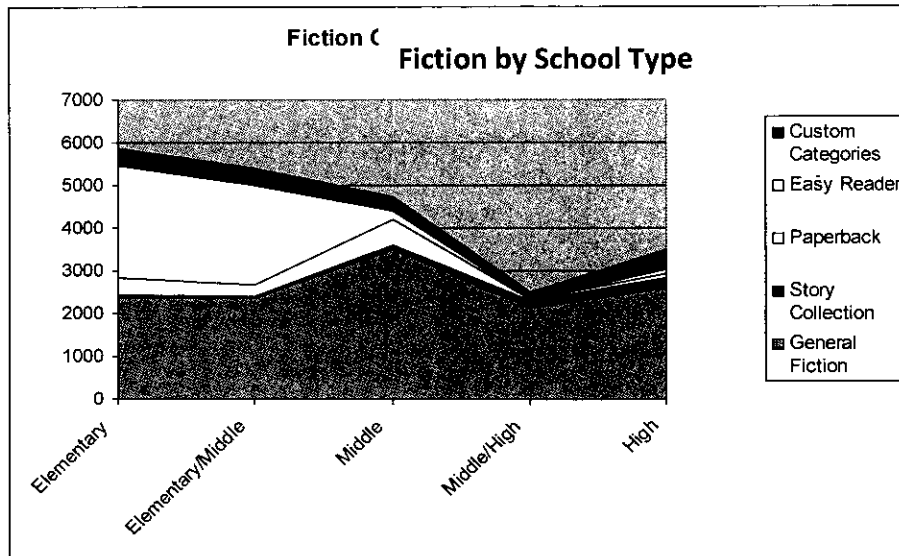


Figure 4: Fiction by School Type
n=298

The use of customized categories and fiction in the elementary grades reflects the traditional emphasis on literacy for beginning readers. The number of books that are paperbacks and fiction is greater in middle school libraries, which tend to have larger collections than elementary libraries. The decline in the number of fiction in middle/high libraries, which increases slightly in high school collections, suggests a stronger emphasis on supporting curriculum as support for recreational reading, traditionally regarded as fiction, declines. The trend coincides with a decline in reading motivation and interest in the middle school years, with an attendant decline in reading comprehension scores.

An analysis of non-fiction and fiction by school type (Fig. 5) indicates a trend toward more non-fiction than fiction books for every level of schooling from elementary through high school, with a slight decrease in elementary and elementary/middle school libraries. The fiction-non-fiction gap originates with a sharp drop of almost 50% in the number of fiction books in middle and middle high school libraries.

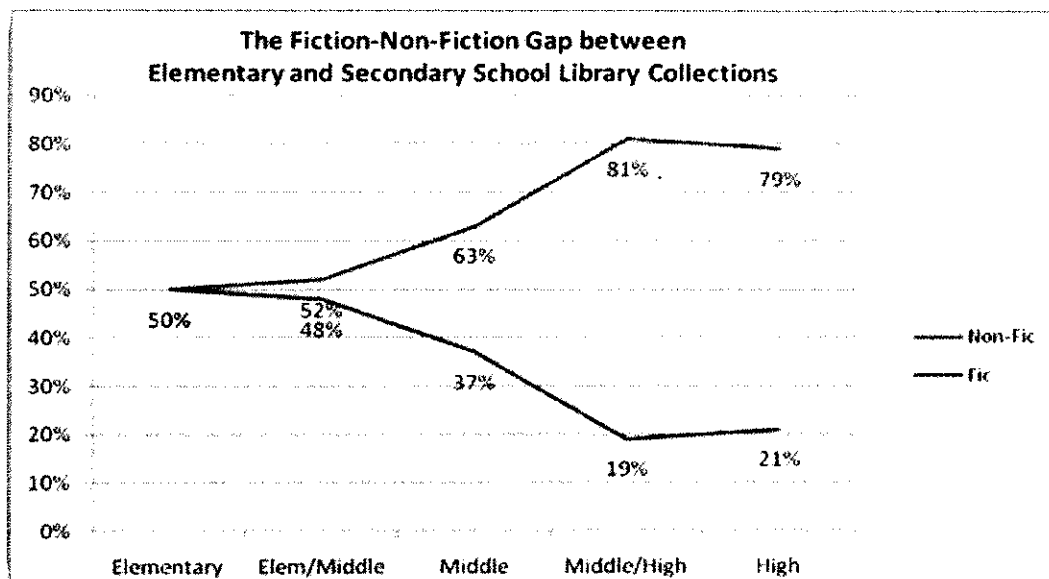


Figure 5: Comparison of Average Number of Fiction and Non-fiction by School Type
n=298

High School libraries indicate a slight increase in the number of fiction titles, but the size of these fiction collections are about half of elementary school collections. This trend raises the question of accessibility of fiction reading materials for high school students, many of whom become disengaged from reading. The fiction-non-fiction gap also has implications for gender differences in reading preferences. While boys prefer non-fiction, girls have a strong preference for fiction (Gurian, 2001). The declining numbers of fiction books in secondary libraries has an impact on free choice for those who prefer fiction. Free choice is a critical factor in reading motivation and engagement. (Guthrie and Davis, 2003) The decline in motivation of middle school students is accompanied by a decline in choices and an increase in teacher control (Guthrie and Davis, 2003). In the case of libraries professionals dominate the selection of book titles with little or no input from students.

Table 2 compares the average number of fiction and non-fiction by school type. An in-depth examination of how non-fiction is distributed across the Dewey Decimal categories reveals where the largest discrepancies between fiction and non-fiction occur.

Dewey Categories	Elementary	Elementary Middle	Middle	Middle High	High
001	.74%	.74%	.85%	.02%	.95%
100	.48	.57	.75	1.23	1.43
200	.50	.63	.88	1.01	1.15
300	6.40	6.52	7.81	10.90	12.30
400	.69	.61	.60	.53	.59
500	11.36	9.91	6.84	5.45	4.61
600	5.00	4.96	5.52	5.89	5.47
700	5.25	5.18	5.58	6.59	6.60

800	2.56	2.40	3.01	10.68	9.83
900	6.97	9.06	13.75	19.28	15.17
Reference	2.39	2.81	7.83	11.38	11.81
Biography	5.90	6.45	7.82	7.84	6.78
Professional	1.18	.93	1.48	.92	.83

Table 2: Breakdown of Non-fiction in Elementary and Secondary Libraries
TitleWise analysis, n=298

The categories that exhibit the most difference when elementary and high school collections are compared are Social Sciences (300s), Literature/Rhetoric (800s), Geography/History (900s), and Reference. The books in these categories correspond to the areas of school curriculum most often taught through inquiry and resource-based learning in the school library. It is interesting to note that Science and Mathematics (500s) books decline by more than 50%, from 11.36% of elementary collections to 4.61% of high school collections.

The four Dewey categories shown in Table 3 present a difference of more than five percent between the sizes of elementary and high school non-fiction, as indicated in Column 3.

Dewey Categories	Percentage of Elementary NF Collections	Percentage of High School NF Collections	Difference in Size of NF collections
300s Social Sciences	6.4 %	12.3 %	5.9 %
800s Literature, Rhetoric	2.56 %	9.8 %	7.27 %
900s Geography, History	6.97 %	15.17 %	8.2 %
Reference	2.39 %	11.81 %	9.42 %

Table 3: Dewey Categories that Explain the Fiction-Non-Fiction Gap *n=298*

Teachers in secondary schools can exercise choice to use school library resources because typically these schools operate on flexible, rather than fixed scheduling. In elementary libraries, where a fixed schedule ensures that every class visits the school library once a week, the librarians do not develop the non-fiction collection at the expense of fiction. In secondary libraries, the heavy influence of curriculum and school schedule on library usage, which is not driven by students' reading interests and preferences, again raises the question of whether library collections are serving the reading and literacy needs of older students.

Another way to look at the non-fiction-fiction gap is shown in Fig. 6 that compares the holdings of elementary and high school libraries for the four Dewey categories: social sciences, literature and rhetoric, history and geography, and reference.

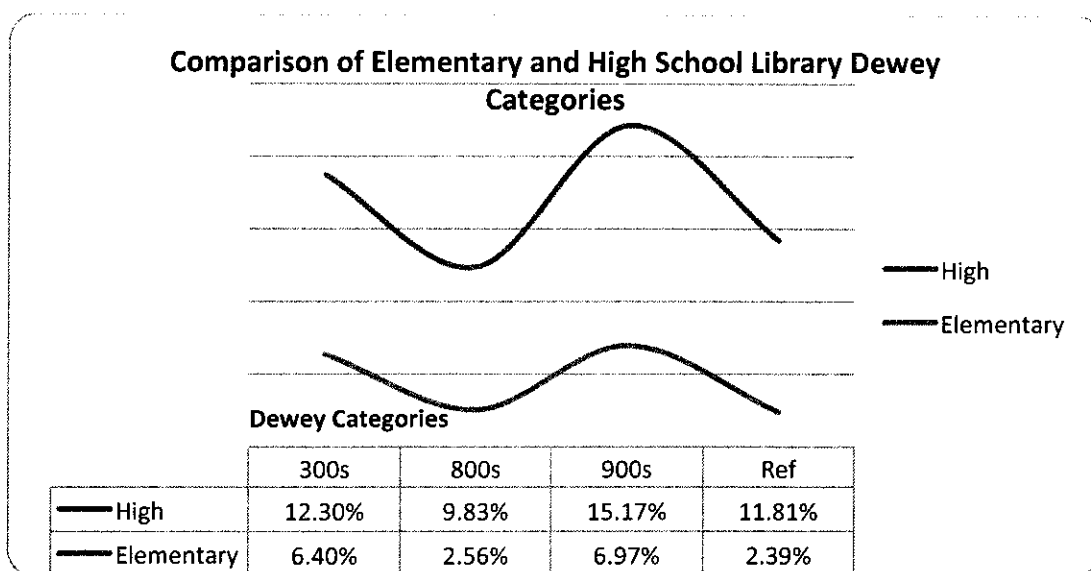


Figure 6: Comparison of Elementary and High School Dewey Categories
n=298

When digital resources are factored into the library collection non-fiction information sources dominate high school collections. While youth services attempt to bring equity of technological access to youth, there are consequences for reading that is becoming more reliant on the digital environment. Many young adolescents are not successful in making the transition from decoding text in their primary grades to developing deep comprehension in the secondary years. As technology revolutionizes how adolescents spend their time, form relationships, and relate to real and virtual worlds, reading is going digital. This has profound implications for literacy development. The horizontal pattern of online reading defies conventional rules as readers skim and scan across web pages, rather than engaging in the vertical pattern of print that seems to encourage deeper reading. In fact, Rowlands and Nicolson (2008) conclude in their study that it seems digital readers are avoiding the deep and sustained reading that builds comprehension (Guthrie, et al., 2006). While this is a compelling argument to retain book/print collections, it also presents the challenge of creating guidelines for material selection that address format as well as content. Questions of user-centricity in material selection with regard to content and format presents the possibility of a paradigm shift from relying on external sources, such as reviews, vendor selection, and recommendations of professional organizations. Is there a need to customize library collections to local user needs, tempering the influence of external sources?

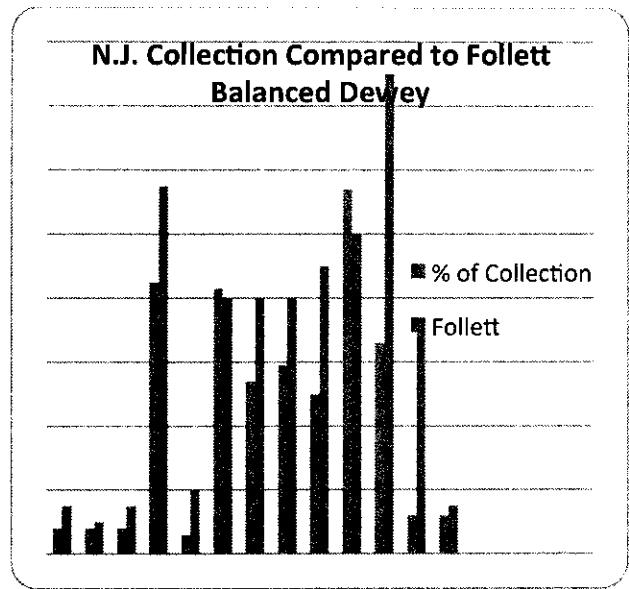
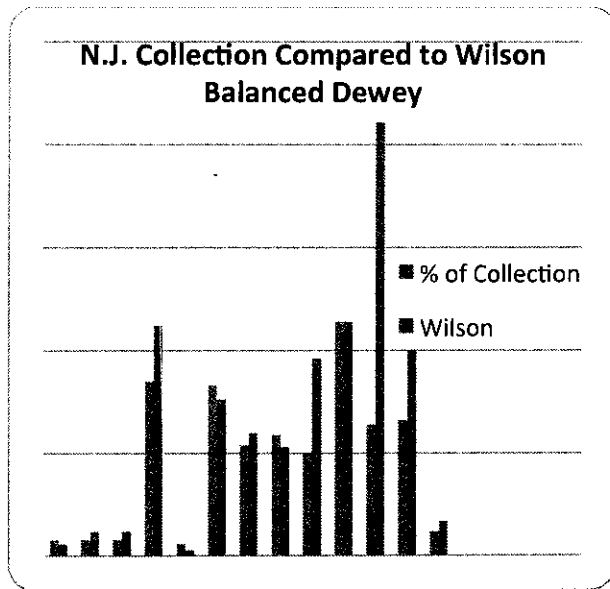
It is useful to compare the ideal percentages recommended by W.W. Wilson and Follett for a core school library collection of non-fiction books (Table 4). The Follett adaptation of the Wilson ideal percentages is based on the company's experience with school library collections. The measure of balance noted in the last column of Table 4 is calculated by the difference between the Wilson or Follett measure and the actual percentages of books within a Dewey or genre category.

Non-Fiction	Dewey Categories	Average Age	No. of Items	Percentage of Collections	Wilson Balanced Dewey/	Follett Balanced Dewey/	Collections compared with Wilson and Follett
000	Generalities	1993	32,355	.8%	0.60%	1.5%	+0.2% -0.7%
100	Philosophy Psychology	1991	32,592	.8%	1.2%	1%	-0.4% -0.2%
200	Religion	1986	31,213	.8%	1.2%	1.5%	-0.4% -0.7%
300	Social Sciences	1989	332,754	8.5%	11.2%	11.5%	-2.7% -3%
400	Language	1986	24,599	.6%	0.3%	2%	+0.3% -1.4%
500	Sciences Mathematics	1989	323,975	8.3%	7.6%	8%	+0.7% +0.3%
600	Technology	1991	210,386	5.4%	6%	8%	-0.6% -2.6%
700	The Arts	1998	230,606	5.9%	5.3%	8%	+0.6% -2.1%
800	Literature Rhetoric	1984	197,131	5%	9.6%	9%	-4.6% -4%
900	Geography History	1987	446,359	11.4%	11.4%	10%	0% +1.4%
Ref	Reference	1990	251,859	6.4%	21.1%	15%	-14.7% -8.6%
Biog	Biography	1988	258,775	6.6%	10%	7%	-3.4% -0.4%
Prof	Professional	1994	48,379	1.2%	1.7%	1.5%	-0.5% -0.3%

Table 4: Comparison of Aggregated Collection with Wilson and Follett Balanced Dewey Percentages n-298

With a few exceptions the actual collections do not deviate very far from the "ideal" established by the experts.

The two graphs in Fig. 7 illustrate the New Jersey school library collections by Dewey category compared with recommended Wilson and Follett percentages.



A Balanced Dewey Comparison that compares the percentages of non-fiction books in each Dewey category with the recommended percentages from H.W. Wilson Company and with Follett Library Resources shows that there are plus or minus differences of 4.6% or less in almost every category. The exception is Reference. School library collections are 14.7% below the Wilson recommendation and 8.6% below the Follett recommendation. It seems that school librarians have de-selected print reference sources in favor of the more current and cost-effective digital products. In fact, in most categories the New Jersey collections are below the recommended numbers, which may be a function of budget as well as customization of the collection. This data present the need for new bibliometrics that address internal as well as external standards. The professional expertise of the school librarian who knows her library community could result in a focused, rather than a balanced collection that meets the needs of users in terms of fiction and non-fiction genres, and print and digital materials.

Collection size and the distribution of fiction and non-fiction raise questions of sustainability and usability. Can school libraries continue to follow a comprehensive model of collection development that seeks to support the entire spectrum of school curriculum, or should book selection be more focused on curricular topics that lend themselves to inquiry learning? Are external standards best serving the needs of library users, or would local standards better support literacy development and readers' interests? Smaller collections offer less free choice for young people to find the "right book," a critical factor in reading motivation.

Analysis of the Currency of Fiction and Non-Fiction in the Aggregated Collection

The currency of New Jersey school library collections is calculated in three ways. 1) Copyright dates; 2) Age sensitivity; 3) and the rate at which books are added to the collection. The average copyright date of all books in the sample from 298 school libraries is 1989. The average book in New Jersey school libraries has a copyright date that is 20 years old.

Figure 8 summarizes the average copyright dates of fiction genres.

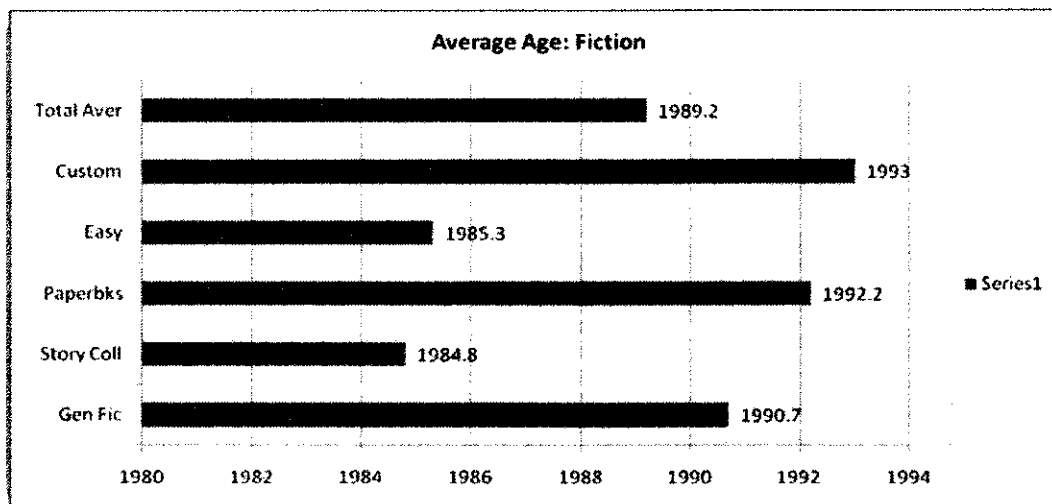


Figure 8: Average Age of Fiction by Copyright Dates
n=298

An analysis of the currency of fiction books shows an average copyright date of 1989. Books that are custom catalogued, i.e., assigned a material type other than the types specified in the *TitleWise* database, have the most recent average copyright date of 1993, followed by Paperbacks (1992). Story Collections and Easy Books have the oldest average copyright date of fiction types - 1985. Reluctant and struggling readers are most affected by this trend since they tend to choose short books and books that are written on low reading levels.

General fiction, which is comprised of novels, has an average copyright date that is 20 years old. This indicates that the fiction collections are dominated by classics (i.e., classic adult novels, classic children's books, and classic Young Adult novels.) These data strongly indicate that new titles (e.g., Caldecott, Newbery, and other award winning titles) and high interest books, e.g., best-sellers, books that have entered other media such as film, and new books that appeal to specific sub-groups or cultures, such as urban fiction and manga, are not accessible in school libraries to a large number of young readers. Old, worn, outdated, and irrelevant literature will not motivate youth to read in the sustained and meaningful way that develops reading comprehension.

Figure 9 displays the average dates for 13 non-fiction categories. An analysis of the currency of non-fiction books shows that eight of the 13 categories have copyright dates prior to 1990. The oldest category is 1984 for Literature/ Rhetoric (800s), which includes essays, drama, and poetry.

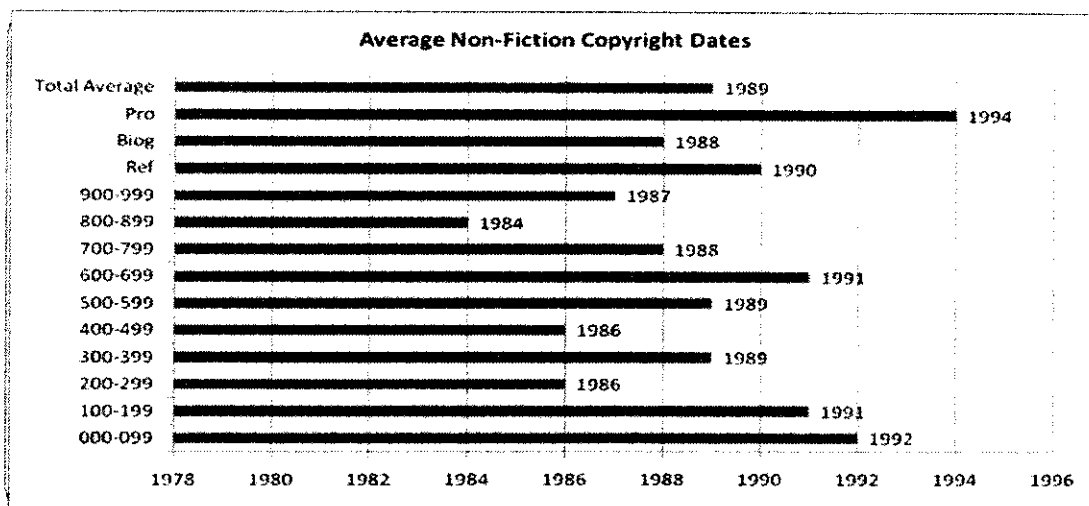


Figure 9: Average Non-Fiction Copyright Dates
n= 298

Figure 10 presents the average fiction copyright dates by school type.

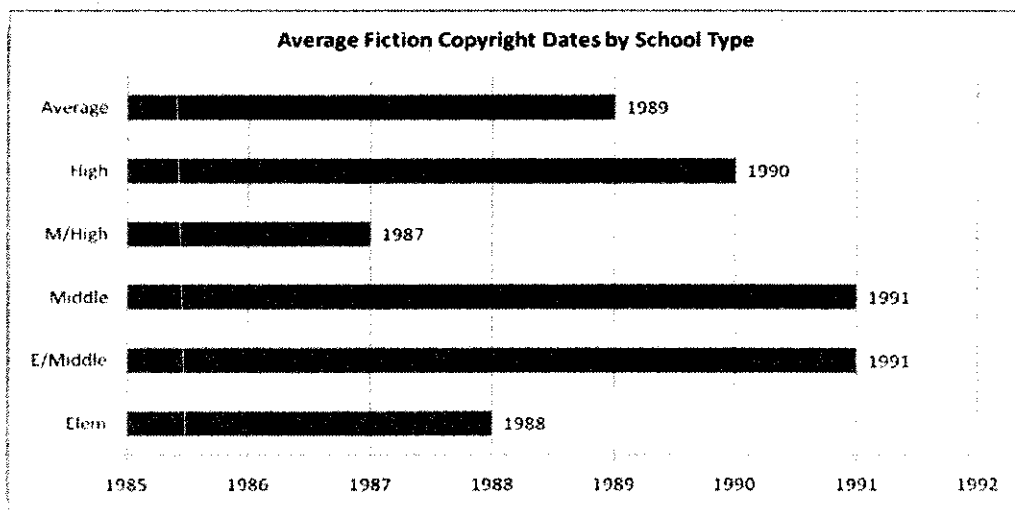


Figure 10: Average Fiction Copyright Dates by School Type
n=298

The average copyright date for fiction books is 1989. Middle/high school libraries have the oldest copyright date (1987), followed by elementary schools (1988). High school libraies have an average fiction date of 1990; elementary/middle and middle school libraries have an average copyright date of 1991.

Figure 11 displays the average non-fiction copyright dates across school types.

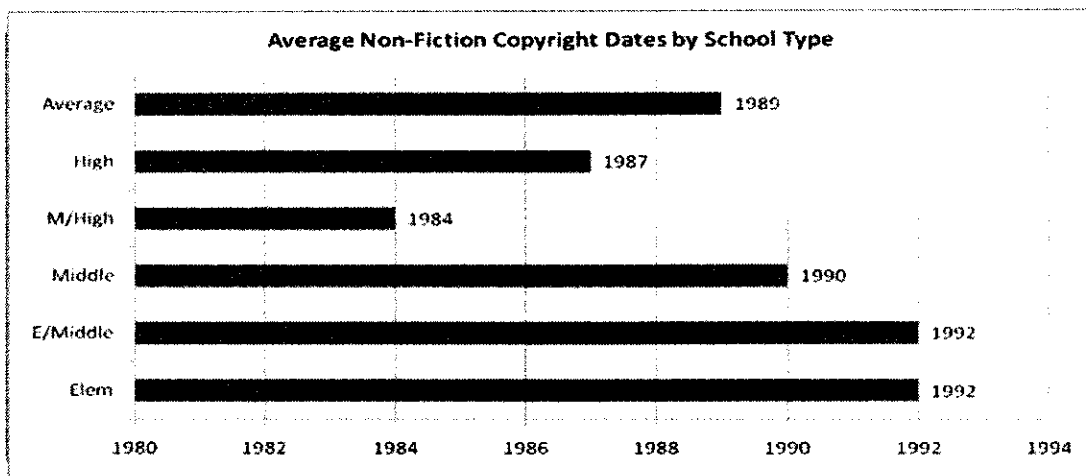


Figure 11: Average Non-fiction Copyright Dates by School Type
n=298

The average copyright date of non-fiction books is 1989. Middle/High school libraries have the most aged non-fiction average copyright date of 1984, followed by high school libraries (1987) and middle school libraries (1990). Elementary/middle and elementary school libraries have the most recent average date of 1992. Anyway we look at the age of the collections, it is obvious that on average, school library budgets cannot sustain current book collections.

Age sensitivity is another way to determine the relevance and currency of a collection. It is determined by calculating the average percentages of the books in the collection that are over three to five years old for nine sections of the Dewey Decimal System. The purpose of identifying these books is to review and weed them for inaccurate and/or outdated information. These categories were adapted by Follett from the CREW guidelines (Larson, 2008). The categories listed in the table below are considered to have a short shelf life and are therefore labeled age sensitive because they are quickly outdated and likely to present misinformation.

Dewey Range	Subjects
003-007	Systems, data processing, computer science, computer programming, computer methods
320-329	Political science, civil and political rights, migration and colonization, slavery and emancipation, international relations, legal process
361-369	General social problems, social welfare, criminology, penal institution, miscellaneous associations
371-379	Education, school management, elementary and secondary education, adult

	education, curriculums, education of women, schools, higher education, government regulation
380-389	Internal commerce, international commerce, postal communication, communications, telecommunication, railroad and inland waterway transportation, water, air and space transportation, transportation, metrology
520-529	Astronomy, celestial mechanics, celestial bodies, ephemerides, chronology
570-579	Life sciences, biology, human races, physical anthropology, biology, evolution, genetics, microbiology
610-619	Medicine, health, human anatomy, physiology, disease prevention, surgery, gynecology, experimental medicine
910-919	Geography, travel, historical geography, graphic representation of the earth, ancient world, Asia, Africa, North America, South America, other areas

Table 5: Age Sensitive Dewey Subject Categories

Table 6 identifies how many titles in the collection are outside the Acceptable Age range for age sensitive categories.

Dewey Ranges		Acceptable Age (Years)	Items in Collection	No. Aged	Percentage Aged
003-007	Systems Data, Computer Programs	3	3,480	3,149	90%
320-329	Political Science	5	29,371	25,467	87%
361-369	Social Problems and Services	5	51,637	42,465	82%
370-379	Education	5	13,595	10,977	81%
380-389	Commerce, Communications, and Transportation	5	10,183	9,359	92%
520-529	Astronomy and Allied Sciences	5	27,299	23,271	85%
570-	Life Sciences, Biology	5	33,273	28,282	85%

579				
610-619	Medical Sciences, Medicine	5	56,030	44,876
910-919	Geography, Maps, Atlases	5	57,137	53,023
Totals			282,005	240,869
Average				85%

Table 6: Age Sensitivity Chart
n=298

Age sensitivity, as established by the CREW guidelines and adapted by Follett Library Resources, targets vulnerable Dewey subjects to establish the percentage of books outside the acceptable range, which is either three or five years from copyright date. 93% of Geography/History books are 5 years old or older. 90% of computer and program and system books are 3 years old or older. 92% of books on commerce, transportation, and communication are in the unacceptable range of 5 years or older. 87% of political science books are 5 years old or older. 85% of books on astronomy and life sciences are five years old or older. 80-82% of books on social problems and services, medicine and disease, and education are five years old or older. The average percentage of age sensitive non-fiction books that are in jeopardy of carrying misinformation is 85%.

Figure 12 shows the average age sensitivity of books in the five types of school libraries identified in this study.

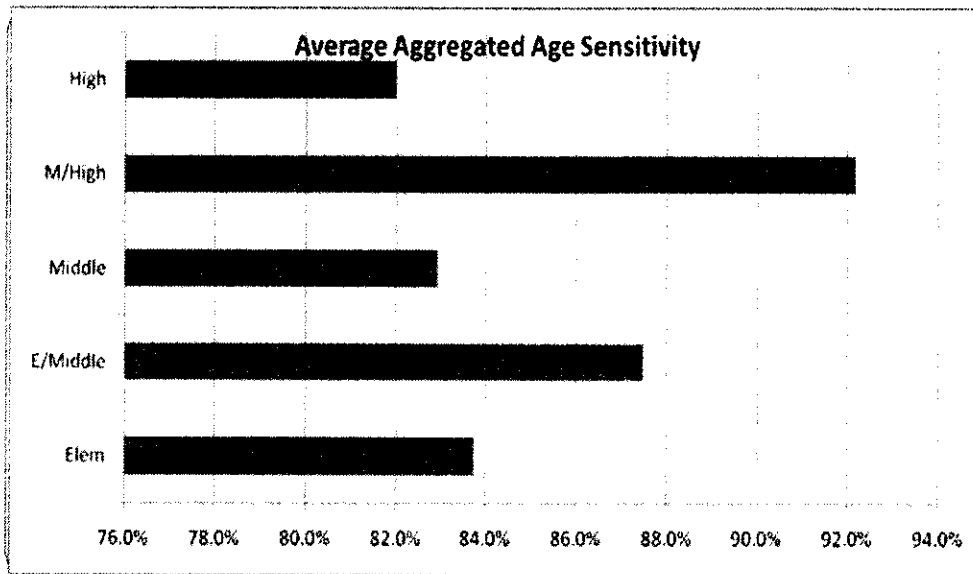


Figure 12: Age Sensitivity of Sample Collections by School Type
n=298

An analysis of the average percentage of age sensitive books by school type reveals that 92% of the age sensitive books in middle high school libraries are in the unacceptable

range of three to five years old, followed by elementary/middle school libraries (87%). High, middle, and elementary school libraries have fewer age sensitive books that are likely to be outdated, with a range from 82% to 84%. The average of the percentages of aged titles for all five types of school libraries is 85.6 percent. This means that only 14.4 percent of all the non-fiction books in the five types of libraries that participated in this study are less than five years old for the nine categories identified as age sensitive.

The issue of currency of school library collections is an issue of sustainability and usability. It is evident that the collections are outdated.

Since size and currency of collections are depend on funding, the next step is to look at budgets. The figure below illustrates the average budgets of New Jersey school libraries by school type for the 2008-2009 school year. These data were obtained from the survey conducted by CISSL.

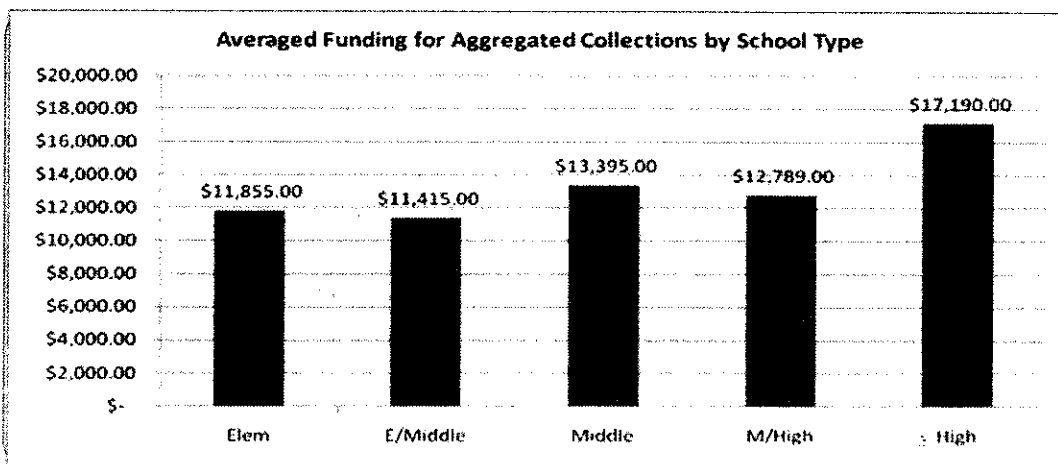


Figure 13: Averaged Funding for Aggregated Collections by School Type
n=298

Using 5 school types, school budgets range from about \$11,855 for the 2008-09 school year for elementary/middle school libraries to \$17,190 for high school libraries. Elementary, middle, and high school libraries fare better than libraries in mixed level school libraries, i.e., elementary/middle and middle/high libraries. Elementary/middle libraries receive 15% less than middle school libraries; middle/high libraries receive 26% less than high school libraries. These inequities are reflected in size and currency of the collections.

The mean budget for all school types is \$13,329, which is higher than the national average of total funds available for library materials (\$11,384) reported by the School Library Journal Spending Survey (Miller and Farmer, 2011). The data from the SLJ study were collected in 2009; the New Jersey data were collected in the 2008-2009 school year.

Figure 14 charts the fluctuations in collection size by the number of books added to school libraries from 1949 to the 2000s.

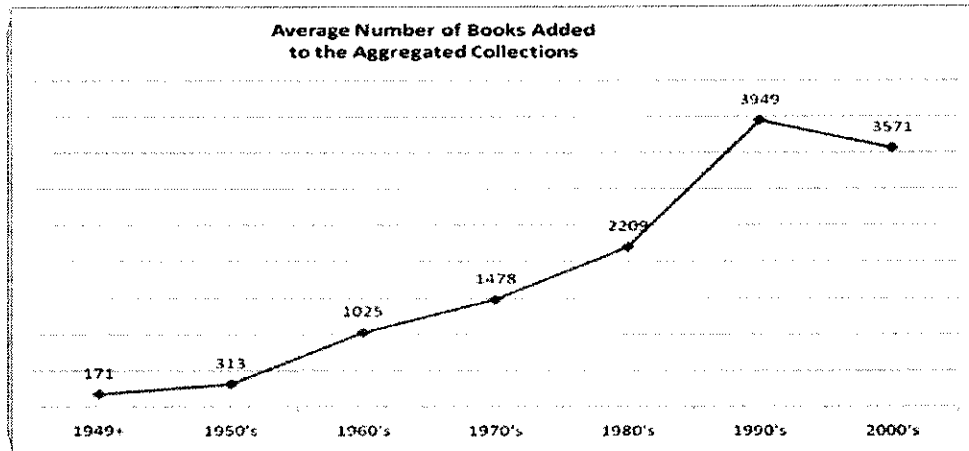


Figure 14: Average Number of Books Added to New Jersey School Libraries
n=298

Books added since 1949 were charted to look for patterns in the number of acquisition by decade since 1949. A calculation of books added to these collections since 1949 provides some insight into funding. A steady increase in books added from 171 in 1949 to 3,949 in 1990 is a strong trend. The decline in the number of books added dropped in the years after 2000 to 3,571. The strong and steady growth of school library collections from the 1960's to 1990 is attributed to federal funding through the Elementary and Secondary Education Act (ESEA) which contributed substantial funding for the development of collections, including audio visual equipment and materials. In the 1990's that growth trend was reversed when the ESEA was replaced by No Child Left Behind legislation.

Analysis of the Size and Currency of the Collections by Socio-Economic Status (SES) of Schools

Participating schools are grouped using the District Factor Grouping (DFG) System to determine socio-economic status of the school's attendees. The DFG system (New Jersey Department of Education, 1996) was introduced in 1975 to provide a ranking of New Jersey school districts by socioeconomic status. Data from the decennial Census is used. Research conducted in the 1960's and 70's showed a strong relationship between socioeconomic status and educational outcomes. The DFG was intended to account for external factors affecting educational outcomes when evaluating the effectiveness of school systems. Although this measure is not mandated, its use is intended to reduce the variation in reported scores which is due to factors beyond the control of local educators. Results reported district-by-district, using the DFG, allows for comparisons among districts, rather than on a geographic basis. The DFG has been used by courts to calculate differences in district spending and to determine funding.

The DFG index of socioeconomic status uses data for several "indicators" available in the decennial Census of Population. Socioeconomic status, which cannot be measured directly, is considered a function of other measurable quantities (e.g., income, occupation, and education). The DFG is a model of socioeconomic status that is a composite statistical index using statistical procedures and input data for various socioeconomic traits. Seven indices were developed from the census data as follows:

1. Percentage of population with no high school diploma
2. Percentage with some college
3. Occupation
4. Population density
5. Income
6. Unemployment
7. Poverty

These indices were utilized in a principal components analysis to produce a statistical score which was used to rank the districts. Districts were then grouped so that each group would consist of districts having factor scores within an interval of one tenth of the distance between the highest and lowest scores.

This study uses an adaptation of the deciles containing an approximately equal number of districts based on their socioeconomic status (SES) score. The districts in the bottom decile were classified as DFG A while districts in the highest decile were classified as DFG J. The New Jersey classification of schools consisted of eight categories: A,B,CD,DE,FG,GH,I,J. For the purposes of this study, these categories were collapsed into four categories:

- 1=Low SES (A, B)
- 2=Low-Middle SES (CD, DE)
- 3=Mid-High SES (FG, GH)
- 4=High SES (I, J)

The schools are evenly distributed across these four categories; Categories one and two comprise 51 percent of the schools and categories three and four comprise 49 percent. Category 1 includes 20 percent; Category 2, 31 percent; Category 3, 28 percent; and Category 4 includes 21 percent of school districts.

Figure 15 graphs the non-fiction collection by the SES type of the 298 school library collections included in this analysis.

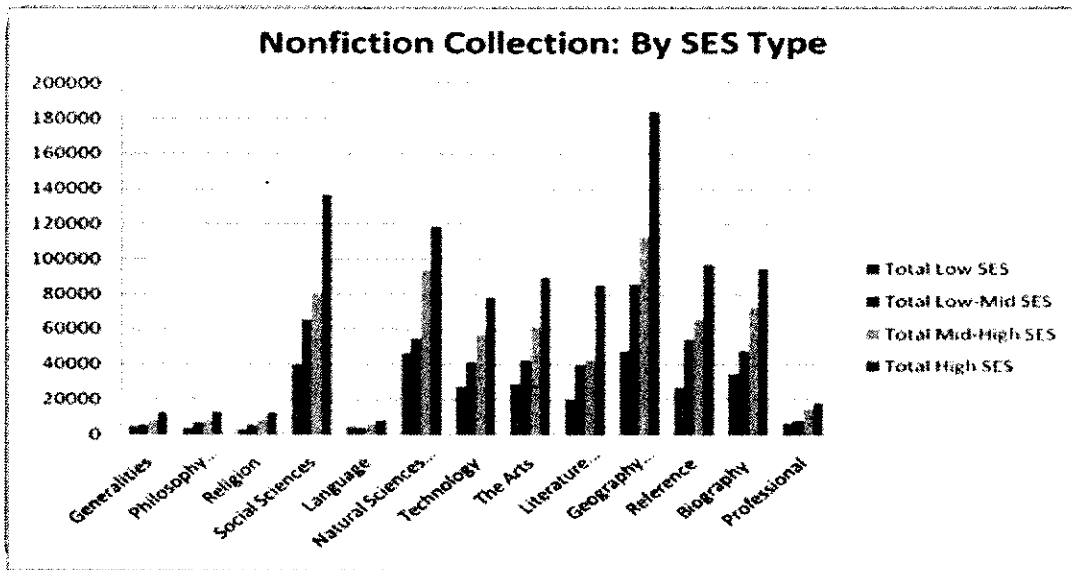


Figure 15: Non-Fiction Collection by SES Type
n=298

A grouping and analysis of New Jersey school libraries using an adaptation of the New Jersey Department of Education’s District Factor Grouping (DFG) shows that the size of high socioeconomic school (SES) library collections is larger, with the largest discrepancies in the social sciences (300’s) and geography and history (900’s). There is consistency within each Dewey category, showing a strong trend that school libraries in low and low-mid SES DFGs have fewer books than school libraries in mid-high and high SES DFGs and fewer recent acquisitions.

Figure 16 shows a comparison of the percent of fiction and non-fiction by SES categories.

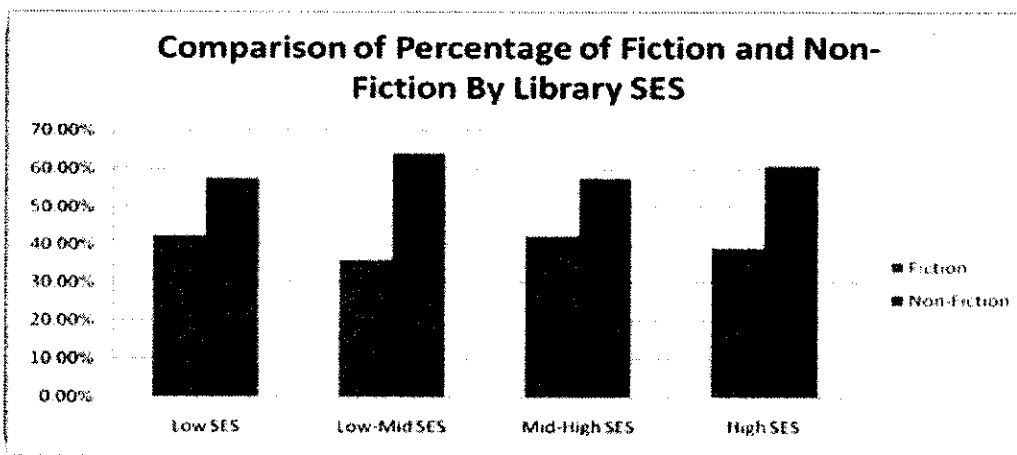


Figure 16: Comparison of Percentage of Fiction and Non-Fiction by Library SES
n=298

A comparison of the percentage of non-fiction and fiction in school libraries by their schools’ socioeconomic status (SES) shows that across school types low and mid-low

SES school libraries have consistently fewer fiction and non-fiction books than mid-high and high SES school libraries. The fiction-non-fiction gap increases from 15 percent in low SES school libraries to 22 percent in high SES school libraries. Low-mid SES school libraries have the largest fiction-non-fiction gap with a difference of 28 percent.

Figure 17 graphs the non-fiction/fiction comparison by the SES categories of school libraries.

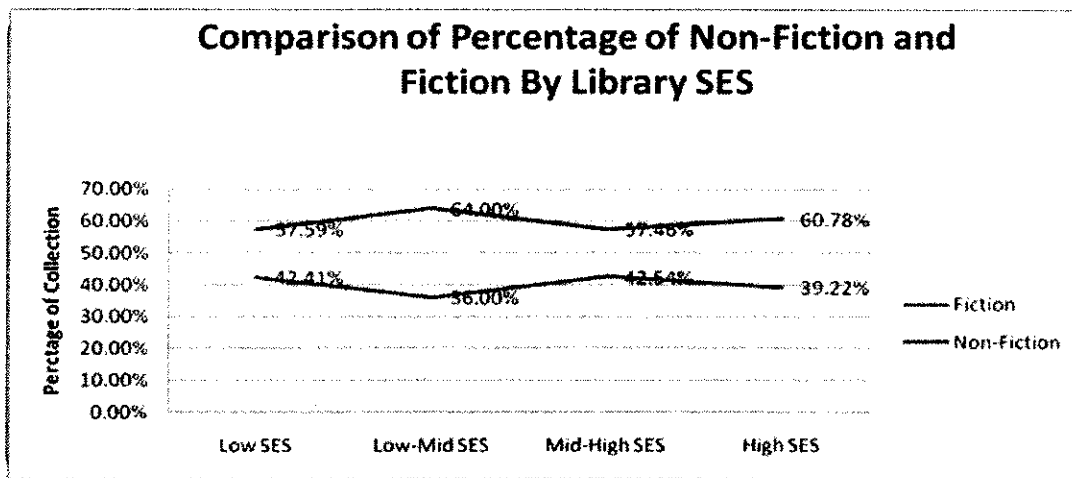


Figure 17: Comparison of percentage of Non-Fiction and Fiction by Library SES
N= 298

With respect to the School SES and the size of the library collection an ANOVA test showed a significant effect of the SES of the school and the number of books in the school library.

$$F(3,282) = 11.53, p < .01 \quad r = .33.$$

“F” represents the ratio of the average variability that is explained by the model to the average variability that cannot be explained. The larger the number, the greater the amount of variance that is explained. “r” refers to the total amount of variance explained. In this example a third (.33) of the variance in the size of a collection of a school library could be explained by the school’s SES.

The planned contrasts compared the size of collections in schools across the four SES groups. Here were the contrasts that were run:

- 1) LOW SES versus all other SES
- 2) MID LOW SES and Mid High SES
- 3) Mid High SES and High SES

Planned contrasts (Table 6) revealed that there was a significant increase in the size of the library collection between libraries in the lower SES and all other levels of SES,

$$t(282) = 4.067, p < .01 \text{ (one tailed)}, r = .12.$$

Those libraries in the highest SES had significantly larger collections than those libraries with mid-high SES. A t test shows that the results are significant. The r statistic states that there was a small effect on the school's SES and the size of its library collection,

$$t(282) = 3.85, p < .01 \text{ (one tailed)}, r = .11.$$

However there was no significant difference between the sizes of low-mid SES libraries and mid-high SES libraries.

Contrast			Value of Contrast	Std. Error	t	df	Sig. (2-tailed)
total	Assume equal variances	1	10,891.72	2,678.075	4.067	282	.000
		2	2,194.32	1,757.200	1.249	282	.213
		3	3,267.38	848.503	3.851	282	.000
	Does not assume equal variances	1	10,891.72	2,546.684	4.277	75.134	.000
		2	2,194.32	1,715.823	1.279	92.733	.204
		3	3,267.38	860.077	3.799	157.035	.000

Table 6: Contrast Tests

The effect of currency of school library collections with regard to socioeconomic status of school is analyzed by looking at the number of books added to collections. There is a significant difference in the number of books added to the school library collections when SES District Factor Groups are compared (Figure 19).

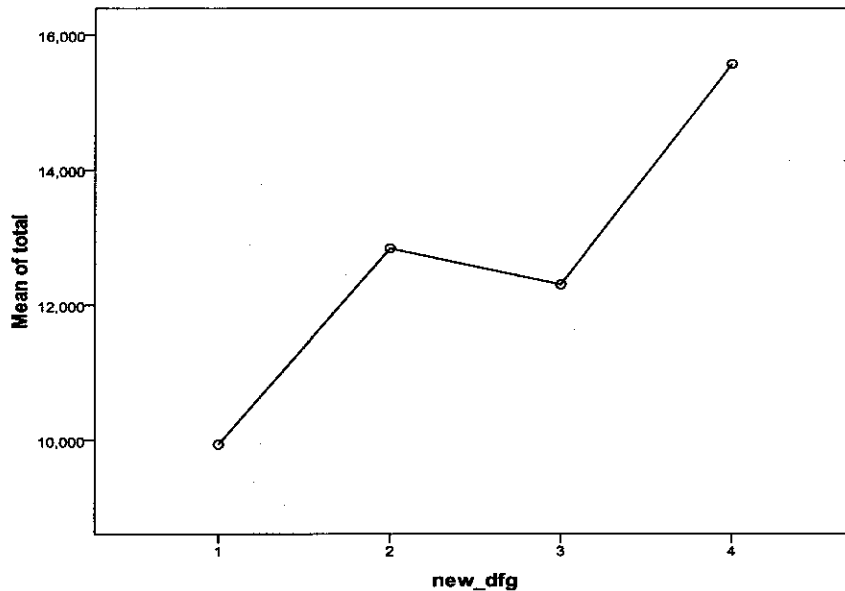


Figure 19: The Effect of Socio Economic Status and the Number of Titles Purchase by the School Libraries

The new DFG (numbers 1-4) refers to the collapsed District factors Scores. 1 indicates low SES; 2 is mid-low; 3 is mid high and 4 indicates high SES school districts (Figure 19).

Planned contrasts revealed that there was a significant increase in the number of titles purchased between libraries in the lower SES and all other levels of SES,

$$t(282) = 3.51, p < .01 \text{ (one tailed)}, r = .11.$$

Those libraries in the mid-low SES had purchased significantly fewer books than the mid-high and high SES schools,

$$t(282) = 3.03, p < .01 \text{ (one tailed)}, r = .10.$$

Finally those libraries with highest SES purchased more books than the libraries in the mid-SES schools,

$$t(282) = 2.96, p < .01 \text{ (one tailed)}, r = .10.$$

With respect to school SES and the number of books purchased since 2000 there was a significant effect of the SES of the school and the number of titles purchased.

$$F(3,282) = 10.97, p < .01 \text{ } r = .32.$$

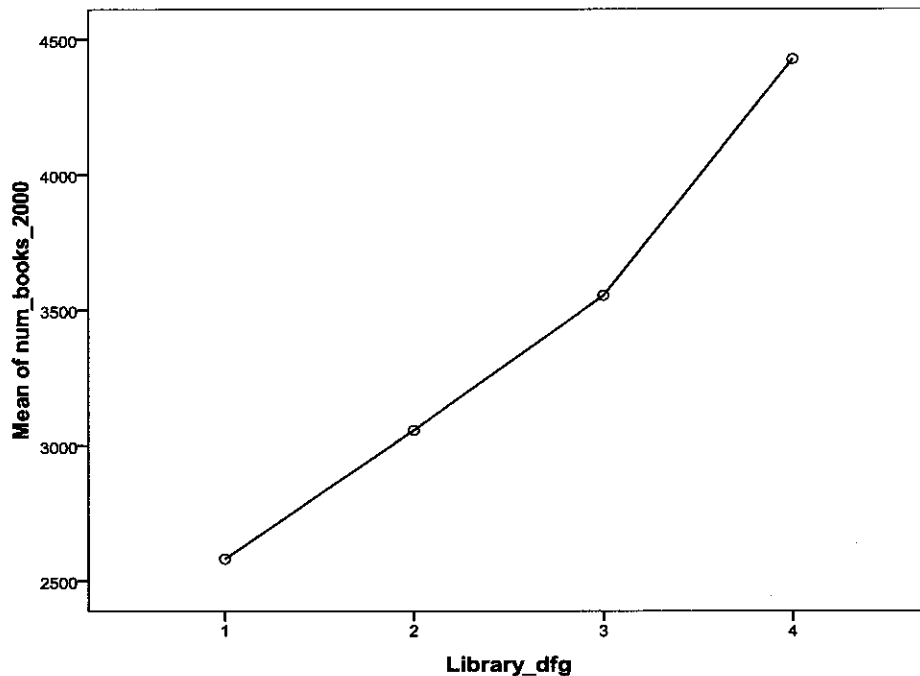


Figure 20: Effect of the Socio Economic Status of the School and Number of Books in the School Library

The numbers 1-4 on the x axis of the graph (Fig. 20) indicate the collapsed categories of low to high SES districts. 1 indicates low SES; 2 is mid-low; 3 is mid high and 4 indicates high SES school districts.

With respect to the School SES and the size of the library collection an ANOVA test showed there was a significant effect of the SES of the school and the number of books in the school library. Those libraries in the highest SES had significantly larger collections than those libraries with mid-high SES. We can conclude from this study that New Jersey school library collections are smaller and older in schools with low socioeconomic status. This is not the first time that research has demonstrated the relationship between funding and quality library programs. Data from a U.S. Department of Education report (Williams, 1987) identified public schools that provide high service library media program and analyzed a sample of 571 schools to determine whether these schools provided a substantially higher investment in library materials. Data show they did: They have media collection budgets and holdings that are more than double the budgets and holdings of programs that provide few or no such services.

Implications of Findings for School Library Collections

The data emerging from this study might tempt us to conclude that book collections are not sustainable, and to some degree that is true: Library budgets cannot support a one-dimensional collection plan that does not consider what is accessible from the Internet, open source sites, electronic databases, and multimodal sources. The school library is a

kind of special library: it exists to support the educational mission of its school. Collection policies and procedures serve teaching and learning. However, when this mission is influenced by traditional library paradigms the collection could present a barrier between the library and the classroom. A "balanced" collection is chosen by the librarian, with help from professional organizations who set standards for "good books," and usually only one copy of each title. The selection policy is based on the assumption that all school library collections are the same, which institutionalizes the collection. Librarians often self-censor to avoid book challenges.

School library collections do not have to be "balanced" since they are focused by the school curriculum and state standards. They do not have to resource every curriculum topic: not all topics are best taught through resource-based inquiry in the school library. A user-driven approach to material selection gives students and teachers a voice. Since young people improve their reading by reading, which also improves spelling, grammar, and writing (Krashen, 2004), it is more important for them to read because they want to read, rather than struggle through a book they do not like. A user-driven approach to material selection that considers the demographics of a community, including ethnicity and socio-economic status, might better serve the reading interests and needs of youth. This is not to say that material selection is not a core function of librarianship. The data raise questions about how core functions can be adapted to provide more relevant materials and services to youth. User input ensures that the "right" books are purchased to support students' reading interests and preferences. Systematic collection of input from students, teachers, and other members of the school community is essential for meeting user needs. Multiple titles of popular books ensure that more students walk out of the library with books they want to read. Building a paperback collection draws students to books they are comfortable reading. A Selection or Collection Development Policy that recognizes the diversity within a school supports a student- rather than school-centric approach to material collection.

The school library collection can be archival in documenting the history of the school. It can have a preservative function for student made artifacts and realia that represent school history. Students can participate in archival projects as they learn how to think as historians to collect evidence. E-portfolios can be part of the collection, showcasing student work while provision can be made for teachers to share their work. The school library can engage with sustainable published that features the work of students and teachers. This sustainable form of publishing can generate excitement around the school library.

How can we evaluate book collections and policies to work for continuous improvement? Adequacy of the size and currency of a book collection is best determined through an evaluation of how well the book collection meets user's needs to be good readers. This requires an evidence-based approach that draws from the research that informs literacy practices. Acknowledging that print and digital texts have different functions in the education of youth is fundamental to re-defining what a

library collection looks like. It implies a shift in material selection to customized guidelines for users. Collection development guidelines are needed for digital, as well as print collections so that relevant curricular needs are met. Developing concepts of collaborative libraries, shared resources, and even shared purchasing can make access to a large book collection affordable. External standards that establish a "core" digital collection is where traditional collection development methods can be adapted. The findings from the New Jersey study of school library book collections point to the familiar agenda of literacy support and new ways to position that agenda and make it work in a digital age.

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Selecting the Right Librarian

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The intent of this article is to provide a resource to those that interview school librarians. Even though this is the targeted audience, this information could also be very useful for teacher-librarians preparing for the interview process.

Choosing the right person for the job is critical to ensure the success of any organization. In this time of fiscal hardships, it is even more important than ever to find that perfect candidate to fill any position in a school. Many principals and other school administrators struggle more when selecting a librarian than a classroom teacher. They have difficulty in determining the qualities and competencies of the teacher-librarian because their knowledge of the required skill set of a librarian is limited based on the principal's previous experience and lack of exposure to what the roles of the librarian should be.

The primary roles of the school librarian are to provide instruction to students, collaborate with teachers, and assist students, staff and parents in accessing, finding, selecting, obtaining, and evaluating print and electronic resources. These roles are much different than those required of other types of librarians at academic, special or public libraries since their functions may be limited to assisting users in finding the right print, audio-visual or web resources without an instructional component. School librarians are responsible for the day-to-day operations of a library program that include increasing literacy, instructional design, teaching, collaboration, technology, leadership, collection development and upholding intellectual freedom. Research has demonstrated that an effective teacher-librarian has a positive effect on student achievement. To ensure a successful library program, administrators seeking to fill a vacant librarian position, should develop interview questions to gauge how knowledgeable a candidate is in each of these areas.

In some districts, principals benefit from a director for library services that is a certified librarian. This is the case in the North East Independent School District (NEISD) in San Antonio, Texas. In our school district, the minimum criteria requires that every school librarian in the district be fully certified by the state, hold a master's degree, and possess at least two years of classroom experience. Every librarian candidate who meets the district's minimum requirements for the position receives a screening interview. A couple times a month, I contact those who meet the criteria and arrange a screening interview. I keep notes on each interview that allow me to remember candidates. As openings occur, I contact the campus principal, and I question them to determine how they perceive their library program and what type of program they envision. Many times, the principal will want a program that emphasizes literacy, technology or

information or any combination of these. I suggest to the principal a list of applicants that administrator may want to consider based on the programmatic goals and the strengths of the applicants. Each applicant I suggest is strong in many aspects of the job, but may be better suited for the type of program the principal envisions. The principal is free to interview or hire any librarian that meets the minimum criteria; however, often times, administrators will follow my advice and start with those applicants I suggest.

The Screening Interview

In the screening interview, I ask questions that build off of each other to gain a better understanding about the applicant's practice and philosophy of the library program compared to the district's expectations. I frame the interview around what our district considers are four core areas of school librarianship:

- Instructional Practices
- Program Management and Organization
- Technology
- Connections to the Community

Each of these areas provides me a window into how the applicant perceives the school library and its functions within the school environment.

Instructional Practices

In NEISD, we consider teacher-librarians should be a teacher first and foremost. They are responsible for ensuring all students are able to find, access, obtain, evaluate and create resources. It is for this reason why most of the emphasis of the screening interview is based on instructional goals. These goals include instructional design, the nature of collaboration, and the use of inquiry. From these questions, I am able to evaluate whether or not the candidate understands how to create effective learning experiences in the library. Their response should reflect that they collaborate with teachers; use district, state and national standards; use student data to determine individual student's needs; and how they engage students in research.

Collaboration is one of the most difficult areas to assess in the interview unless the interviewer understands the differing levels of collaboration. For some, collaboration means a librarian will ask teachers what they are teaching and then pulling resources; to another, collaboration is the act of communicating with another teacher and providing some instruction to students; and others view collaboration as an act that involves the planning, teaching and evaluation of instructional units with shared responsibility for both the teacher and the librarian. It is for this reason I ask librarians to define collaboration and to provide an example of a time they have collaborated with another teacher.

The third area of practice I examine is that of inquiry and research. I want to find out how the teacher-librarian engages students in research. Questions in this area relate to which research model(s) the applicants are familiar with; how the candidates use them with students; and how the research process guides the learner. I also look for evidence of how they connect the library program to 21st century skills and how they challenge student to think in new and different ways.

Program Management and Organization

The management and organization of the library program is the area of the profession involves the day-to-day operation of the library including scheduling, reading motivation programs, collection development, cataloging, etc. This portion of the interview uncovers whether or not the candidate has a grasp on the responsibilities of an information specialist and is probably the area that most administrators are the least familiar with. A strong candidate will be able express that a completely fixed schedule does not meet the needs of all students and it presents barriers to inquiry. They should also describe their role in motivating students to read. They will be able to provide examples of how they provide reading incentive programs that are more than a prepackaged commercial product. I listen for evidence of originality and multiple programs throughout the school year and breaks. Besides salaries, the library program budget is one of the single largest expenditures for a campus. A librarian's responsibility is to ensure that appropriate materials are chosen and are aligned to the district's curriculum. The candidate should be able to express how they use the district's curriculum to select books and other resources and how they use review sources in their purchasing decisions.

One area of librarianship I don't ask about is cataloging. In NEISD, we employ professional catalogers who catalog and process all library materials. However, if I was interviewing someone that was going to be responsible for cataloging materials, I would ask them about their experience they have had cataloging and which cataloging tools do they use when cataloging print and non-print materials. The ideal candidate will be able to talk about cataloging standards such as MARC records, the Anglo-American Cataloging Rules 2nd Edition (AACR2), and the newest standard, Resource Description and Access (RDA). Strong candidates will also talk about where they find cataloging records from other sources and how they evaluate them for quality.

Technology

Librarians should be among the most knowledgeable users in the integration of technology on the campus. When describing their technology use, candidates should be able to describe their technology skills. I look for specific software program use as well as understanding of how to use Internet resources and the applicant's ability to troubleshoot technology problems. They should be able to describe how they use technology for their personal and direct teaching and how they engage students in the

use of technology. If the applicant is unable to describe how they have students use technology, they will not be able to meet our technology standards. The candidates must also be able to describe Web 2.0 technologies and how they can be useful in the library or classroom setting. For example, they should be able to describe the use of podcasts, wikis, blogs, etc. in the creation of new content by students.

Leadership

A necessary quality in librarians is how librarians are able to work with and lead others. They should be effective communicators with parents, teachers, and administrators in order to influence positive change. Librarians in NEISD are expected to be a part of their Campus Improvement Council and serve on multiple campus and district committees. Strong leaders are able to communicate their vision and present their expertise to other librarians, teachers, and administrators. In order to learn more about an applicant's leadership abilities, I listen for evidence of involvement in committee work, active participation in professional organizations, and the creation and execution of professional development for other staff members. I also attempt to determine how the candidate is able to work with their peers and administrators through the way they describe how he/she is able to relate to other professionals. I find that candidates who are strong communicators with their peers are able to sustain and advocate for their library program.

Connections to the Community

The final area I consider when interviewing a librarian is to determine their level of commitment to the community in which they serve and how the applicant will involve the community in the library program. In this part of the interview, I look for individuals that actively seek parental involvement as volunteers, library committee members, and in programs that encourage literacy. Volunteers can be the strong advocates of library programs and the amount of help they can provide is invaluable. They often will assist in shelving, processing books, fundraising, etc. Strong librarians are able to communicate the effectiveness and importance of the overall library program. Each librarian in NEISD is required to have a Library Advisory Council which provides input in library events and if needed, and serves on a reconsideration committee for challenged materials. We also expect librarians to host special events throughout the year to encourage literacy such as reading nights, technology fairs, Battle of the Books, Clash of the Titles, state reading programs, book fairs, etc. These events should encourage family participation in the education of the students they serve and allow for another way to build relationships between the student and family to the school.

Supporting Your New Librarian

Now you have found the perfect librarian and now what? It does not matter if you have chosen a school librarian that is new to the profession or a veteran, either one of these individuals will require support in their new position. On most campuses, there is only one librarian and in some cases, there may be only one librarian in the entire district. We are fortunate in NEISD to have a support structure in place to support librarians and provide a mentoring program. Every new librarian to the district, whether they are new to the profession or have been a librarian in another district, becomes a part of this mentoring group and is paired with another campus librarian. We try and choose a mentor librarian that is from the same type of campus the new librarian has been hired in (elementary school, middle school, high school, Title I, high socio-economic, monolingual, dual-language, etc.). We structure the program this way to allow the new librarian to have a mentor that experiences similar types of challenges. Each month, mentors and mentees meet to discuss upcoming events, procedures and best practices. Mentee/mentor pairs are encouraged to visit each other's campus and attend meetings, workshops, and conferences together.

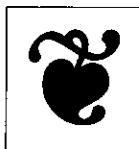
Not every school district has the ability to provide a robust mentoring program for their librarians. However, administrators can provide support to their new librarian by allowing them to have release time to visit other area librarians or if geography is a barrier, they can communicate virtually. There are numerous blogs, email groups and other electronic means through which librarians are able to learn more about their chosen profession; however, nothing can replace being able to see another librarian in action or to pick up the telephone to ask a question. The most important need is that the librarian has access to quality professional development that they are able to improve their practice to improve student achievement.

Hiring the perfect librarian for your campus involves understanding the role of the librarian as an instructional partner and leader who is able to increase student achievement. The librarian needs to possess the skills required of librarianship, and he/she will need a support system that will allow for networking with other librarians and professional growth. You will know the choice was right when he/she is able to create positive relationships with students, parents, teachers and administrators and is seen as indispensable part of your school program.

Additional Reading:

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Preservice School Librarian Education Practices for Developing the Instructional Partner Role A Preliminary Report

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ABSTRACT

This poster presents the preliminary findings of a qualitative case study conducted in LS5443: Librarians as Instructional Partners, a graduate-level course taught exclusively online for the School of Library and Information Studies at Texas Woman's University, Denton (Moreillon, 2009). The purpose of the study was to investigate course content, assignments, tools, resources and instructional strategies that made the greatest impact on students' self-perception of their preparation to serve in the instructional partner role, one of five roles for school librarians identified by the American Association of School Librarians in *Empowering Learners: Guidelines for School Library Media Programs* (AASL, 2009).

The foundation of the study rests on research that shows that developing instructional partnerships is one way school librarians enact a leadership role in their schools (Haycock, 2010; McGregor, 2003; Zmuda & Harada, 2008). The preliminary findings indicate that the practice of collaborating with different partners for different assignments had the greatest impact on students' self-perceptions. The dispositions, such as flexibility, trust, openness, risk-taking, and willingness to change, required to collaborate with three or more classmates over the course of the semester stretched the study participants' previously-held beliefs about their own limitations as instructional partners and the potential for collaborative work to lead to satisfying results.

Keywords

school library education, instructional partnerships

1. INTRODUCTION

School librarian educators are charged with preparing preservice school librarians with theory and practice related to enacting successful instructional partnerships. Haycock (1995) has pointed out that research has revealed much of the "what" and the "why" of issues related to the practice of school librarianship but little of the "how." One goal of this study is to suggest "how" school librarians learn to value this role and become effective instructional partners and as a result, leaders in their schools.

The course under study promotes the pivotal role instructional partnerships play in building the leadership capacity of school librarians. LS5443 instructional strategies and

assignments assist students in developing dispositions and behaviors for collaborative work, including coplanning, coteaching, and coassessing lessons. The course also stresses advocating for the central role of school librarians in academic programs. All course assignments address state standards and national competencies identified for inservice and preservice school librarians.

In research that focuses on how school librarians contribute to student achievement and achievement on standardized test scores in particular, a growing number of studies identify coplanning and coteaching as two key aspects of best practice (Achterman, 2008; Library Research Service, 2011). As instructional partners, school librarians serve as informal leaders who can effectively impact the teaching practices of their classroom teacher peers (Zmuda & Harada, 2008). As Carr (2008) notes, school librarian leaders are able to ensure that multiple literacies are woven into and throughout the curriculum. In addition, school principals associate school library success with active, collaborative, and resourceful librarians (Levitov, 2009) and note that when school librarians engage in effective instructional partnerships students' test scores rise (Lance, Rodney, & Schwarz, 2010).

2. RESEARCH PURPOSE

The purpose of this study is to suggest ways school librarian educators can best prepare preservice candidates for serving in the instructional partnership and leadership roles when they enter into practice. "Preparing SLMs [school library media specialists] who are ready to assume leadership roles and responsibilities in their schools should be a priority for school media preparation programs" (Shannon, 2008, p. 38).

AASL describes the school librarian's leadership role in terms of "building 21st-century skills throughout the school environment" (AASL, 2009, p. 17). School librarians who serve as leaders in their schools must demonstrate their ability to impact student achievement. Through enacting successful instructional partnerships, school librarians can maximize their impact on student achievement while coteaching with classroom teacher colleagues to ensure that K-12 students practice 21st-century skills. This study suggests that a standards-based preservice curriculum can support candidates in developing the necessary skills and strategies to fulfill these roles.

3. THEORETICAL FRAMEWORK

Metacognition is a critical aspect of learning (Coffield, Mosely, Hall, & Ecclestone, 2004; Marzano, 1998) and learning to teach (Gunstone & Northfield, 2007). When learners reflect and think about how their learning experiences have impacted or changed their schemata, they are better able to replicate learning events in order to further develop their knowledge. For educators, this means they can make conscious, informed decisions to improve their craft of teaching.

In this study, graduate students were asked to reflect on what they had learned in the course and how they learned it. Focused cognitively on the “big idea” of the course, instructional partnerships, and engaging in the regular practices of this community of practice, asynchronous discussions, students were primed for reflection (Prawat, 1998). Students demonstrated both individual and collective meaning making. The online forum also promoted socio-emotional components in which discussants exchanged empathetic messages and engaged in self-disclosure (Fulton, Botticelli, & Bradley, 2011). The asynchronous nature of the final course online discussion in which students participated over a period of five days provided them the opportunity to engage in reflection through writing and offered them time for rethinking and extending their thinking in their responses to classmates.

RQ1: What did students understand differently about instructional partnerships as a result of participating in this course?

RQ2: How did students describe how they came to this understanding?

RQ3: What in particular caused students to develop their thinking related to classroom-library instructional partnerships?

Additional data sources for this study also involved study participants in reflection related to collaborative learning experiences during this course.

4. METHOD

Qualitative case study methodology allows the researcher to conduct an analysis without being constrained by a limited set of variables. The study is an “examination of an instance in action” (Guba & Lincoln, 1981, p. 371). It asks what happened in this case and offers the researcher and school librarian educator colleagues an opportunity to closely examine this particular teaching and learning context. An interpretative paradigm allows the researcher to explore and explain this phenomenon without predicting or evaluating its outcomes. It is up to readers to find parallels, or not, with their own teaching (Milam, 1992).

The researcher utilized a constant comparative method (Glazer & Strauss, 1967) and engaged in a non-linear process in categorizing and analyzing these data. Throughout the analysis process, the researcher maintained a stance that both acknowledged her impact on the data and honored the emergent nature of the data (Rossman & Rallis, 1998). As the instructor administering the final reflection, her role as course instructor could have influenced participants’ responses. However, the final reflection assignment from which most of the data was collected was “worth” just ten points, less than .02% of the total course grade; there was little reason for students to embellish their responses on the final reflection or, for that matter, on other data sources used in this study. This study was based on existing data and permission to use these data was not requested

from participants in advance of the end of the course, eliminating another possible reason participants might exaggerate their responses. By posing open-ended questions for the final reflection and for the collaboration experience reflection lesson plan benchmark, the researcher did not impose categories on these data. However, categories emerged beyond the initial postings along the lines of the standards used to guide course content and assignments, which suggests the impact of a standards-based teaching framework on learning outcomes.

5. DATA ANALYSIS

The researcher assumed that students' final course reflection elevator speeches were an accurate record of their learning related to developing a value for and best practices in classroom-library instructional partnerships. Students also responded to one another's speeches and generated more data for analysis beyond the initial postings. Additional student discussion postings reviewed and collected at the end of the semester and students' reflections on collaborative work, which were collected after the first benchmark in the three-part collaborative lesson plan assignments and were likewise reviewed at the end of the course, generated supplementary data.

Using a constant comparative method, the final reflection data were coded based on keywords in participants' initial postings and responses to one another. The preliminary results presented in this poster include the instructional strategies and assignments that most impacted students' learning. (Additional data and further analysis will show how students perceived development in their abilities to communicate, collaborate, and demonstrate competencies based on data drawn from their responses to classmates and supplementary data sources.) The following table of initial postings data shows the number of students in two categories, practicing or former classroom teachers, and currently practicing school librarians, who included specific instructional strategies, assignments, or tools that most impacted their learning in this course.

Table - N=61 Course Reflection Initial Posting

CT = Currently Practicing or Former Classroom Teacher

SL = Currently Practicing School Librarian

Category	Descriptors	CT/S L	N	%
Various Collaborative Partners	Flexibility, trust, openness, risk-taking, willingness to change	10/6	1	26.
			6	2
	Responsibility to reach out	1/5	6	9.8

	Partnership of equals, a common goal	3/2	5	8.2
	Not always successful but always learning experience	2/1	3	4.9
Total		16/14	30	49.2
Multiple Assignments	Improvements in instructional practices from two heads, job-embedded professional development	13/6	19	31.1
	Developing coteaching relationships for advocacy	3/2	5	8.2
Total		16/8	24	39.3
Specific Assignments				
Portrait of a Collaborator	Greater understanding of my own collaborative style	2/2	4	6.6
Total		2/2	4	6.6
Persuasive Presentation	Clear communication and expectations, delegation	1 CT	1	1.6
	Need to reach out f2f to advocate	1/1	2	3.3
	Contributing strengths/developing weaknesses	1 SL	1	1.6
Total		2/2	4	6.6
Collaborative Lesson Plan (3 discrete assignments)	Cooperation and collaboration distinction, Synergy (could not separate partner's work from own)	8/2	10	16.4

nts)				
	Co-creating, co-teaching, and co-assessing to benefit students (and teachers, too)	5/4	9	14.8
	Contributing strengths/developing weaknesses	2/1	3	4.9
Total		15/7	22	36.1
Marketing and Advocacy Project	Clear communication and expectations	1 CT	1	1.6
	Leadership role, act as a partner, and ultimately be a change agent	4/1	5	8.2
	Elevator speeches, usefulness in practice	1 CT	1	1.6
Total		6/1	7	11.5
Total Specific Assignments		25/12	37	60.7
Tools				
Wikis and Technologies	Collaborative/Web 2.0 tools	11/8	19	31.1
Total Tools		11/8	19	31.1

Working with various collaborative partners was mentioned most frequently in students' elevator speeches; 49.2% of students commented on this feature of the course. It is notable ten students who were classroom teachers and six currently practicing school librarians, who attributed their development to working in multiple partnerships, mentioned dispositions such as flexibility, trust, openness, risk-taking, and willingness to change as keys to instructional partnership learning.

While 39.3% of the students mentioned multiple collaborative projects in their final reflections, almost an equal percentage, 36.1%, mentioned the three-part collaborative lesson planning project as having the greatest impact on their development as

instructional partners. In this assignment category, the comments from classroom teachers significantly outnumbered those from practicing school librarians.

Wikis and other technology tools for collaborative work were identified by 31.1% of students as having an impact on their development as instructional partners. Case study participants also noted these resources as specific support for building their expertise in this role: coteaching and evidence-based practice PowerPoint presentations, a course text book *Collaborative Strategies for Teaching Reading Comprehension: Maximizing Your Impact* (Moreillon, 2007), a chapter about collaboration and leadership by McGregor (2003), collaborative planning forms, classroom-library collaboration testimonials, group office hour chats in Wimba Classroom, a synchronous communication tool, and discussion board postings by currently practicing school librarian classmates.

6. CONCLUSION

This in-progress research seeks to identify strategies and assignments the researcher and other school librarian educators can develop in order to best prepare preservice candidates for serving in the instructional partnership and leadership roles when they enter into practice. The preliminary findings suggest that developing content and assignments and utilizing instructional strategies that require and support collaboration between and among preservice school librarians helps prepare them for these roles.

The study also suggests that when graduate students are expected to work collaboratively with multiple partners during their coursework and reflect on that experience, they can identify course components that can help school librarian educators best prepare them for assuming leadership and collaborative partnership roles in their future (or present) school learning communities. By experiencing successful, and even less than successful, collaborative relationships in their preservice education, school librarian candidates develop a value for the instructional partnership role as well as dispositions that will serve them in enacting this role in the field.

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School Library Advocacy: A Categorization of the Literature

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Abstract

This paper categorizes scholarly and practitioner literature related to school library advocacy. Despite evidence of school librarians' impact on student achievement and multiple advocacy efforts, position eliminations continue across the United States. The author searched the scholarly and practitioner literature in the past ten years and constructed categories of publications related to advocacy. Future directions for the study of school library advocacy should include a comprehensive review or content analysis of the literature. Additionally, school library researchers should address the dearth of empirical and theoretical work on both the practice and impact of advocacy on the profession.

Introduction

This paper reviews the school library advocacy literature in the past ten years. In the past several years, the number of school librarians in the United States has greatly diminished. Only 60% of K-12 public schools employ a state certified librarian (American Libraries, 2007). These eliminations prompted the American Library Association (ALA) to appoint a special Task Force on the Status of School Libraries. Since the adoption of its report (ALA, 2005) ALA and the American Association of School Librarians (AASL) launched several initiatives to advocate for a state-certified librarian in every public school. For example, AASL created an Advocacy Toolkit (2006), and the ALA's policy-making Council adopted several resolutions on various aspects of school libraries including responses to position and funding elimination.

ALA and AASL's most ambitious school library advocacy activity to date is the improvement of school library activities under the pending reauthorization of the Elementary and Secondary Education Act. These improvements include maintaining dedicated funding for the *Improving Literacy through School Libraries* program, establishing state goals of having a school library staffed by a state-licensed school librarian in each public school, and allowing state and local professional development funds to be used for recruiting and training school librarians (AASL, 2010). The third reintroduction of the Strengthening Kids' Interest in Learning and Libraries (SKILLS) act in 2011 is the most recent advocacy attempt by the American Library Association (ALA, 2011a) and other advocacy initiatives are on the horizon, including President

Obama's proposed American Jobs Act (ALA, 2011b), which allocates \$30 billion for K-12 education, some of which can be applied to school libraries and librarians.

For example, despite well-organized advocacy campaigns in Medina, Washington (Whelan, 2009) and Mesa, Arizona (Whelan, 2008), these districts still chose to eliminate librarians. The unevenness of decisions to retain or eliminate is perplexing; little is understood about why some school districts choose to retain school librarian positions while others do not. Additionally, there is little understanding about the impact of school library advocacy by individual school librarians and other stakeholders. Furthermore, the impact of library associations' advocacy for the profession remains unanalyzed. A survey of the current literature on school library advocacy helps us to better understand these phenomena.

Method

I conducted a search of the scholarly and practitioner related to school library advocacy. The search was limited to scholarly and practitioner literature generated in the United States after 2001, using the adoption of the U.S. No Child Left Behind Act (NCLB, 2001) as the latest demarcation of a distinct era of educational reform characterized by high-stakes accountability (Valli & Buese, 2007) and defined as "major change leading to a restructuring of core processes, programs, and/or procedures" (Hanson, 2001).

Grey literature and other ephemeral publications (e.g. web sites, conference reports and papers) were excluded from the review. Additionally, I chose not to include the oft-cited "state studies" conducted by Keith Curry Lance and others in this literature review (see <http://www.lrs.org/impact.php> for a full accounting of state studies). While these studies are used extensively in advocacy campaigns, in order to make a case for retaining librarians and library programs, I chose to exclude them for the purposes of this review. Databases searched were the Education Resources Information Center (ERIC) and the Wilson Library Literature & Information Science Index. A total of 63 publications were found in the two databases using the keywords "school library advocacy" with publication dates between 2001 and 2011.

This brief literature categorization is a preliminary step in describing and understanding the landscape of school library advocacy literature. Callison (1998) indicates that while reviews of literature are useful for identifying relationships over time, generalizability should be avoided because of the unique settings, methods employed and other variables related to the literature. This paper is not comprehensive, does not attempt to identify relationships, but rather is a survey that describes the categories of school library advocacy literature, and recommends areas for future study.

Categorization of School Library Advocacy Literature

I constructed nine categories within the school library advocacy literature, described in the table below.

Table 1. Categorization of school library advocacy literature.

Category	Number of Publications	Publications
Advocacy by non-librarians	6	Heisendorf, 2007; Hultgren, 2009; Kaaland, 2009; Whelan, 2008; Kenney, 2008; Valenza & Johnson, 2009
Advocacy by professional associations	4	Johns, 2007; Phillip, 2007; Rettig, 2009; Williams, 2006
Advocacy involving school administrators	6	Ewbank, 2011; Gallagher-Hayashi, 2001; Greenberg, 2001; Hartzell, 2007; Harvey, 2009; Kachel, 2003
Dispositions of school librarians who are advocates	9	Barron, 2003; Dickinson, 2007; Jones & Bush, 2009; Levitov, 2007; Martin, 2007; Minkel, 2002; Moreillon & Misakian, 2007; Schuckett, 2007; Stripling, 2007
Empirical studies of advocacy	1	Ewbank (in press)
Evidence-based practice as an advocacy tool	9	Asselin, 2002; Braxton, 2003; Kenney, 2006; Loertscher and Todd, 2003; Logan 2006; Todd, 2003, 2006, 2008a, 2008b
Legislative or political advocacy	4	Ewbank & Moreillon, 2006; Kaaland, 2010a; Lance, 2006; Young, 2009
Localized reports of advocacy initiatives	4	Burris, 2006; Logan, 2009, 2010; Meraz, 2002
Strategies and techniques for advocacy	20	Adams, 2011; Baxter, 2007; Bush, 2007; Collins, 2010; Foote, 2010; Freda, 2007; Hainer, 2005; Hand, 2008; Howard, 2009; Johnson, 2005; Kaaland, 2010b, 2011; Kelly, 2008; Lehman, 2002; Leverett, 2001; Levitov, 2009; Schuckett, 2005; Terrell, 2010; Vanneman, 2007; Wallace, 2004

Conclusion

While there was no clear majority category, the largest number of articles (n=20) described strategies and techniques for advocacy. The next largest categories were using evidence-based practice as an advocacy tool (n=9) and dispositions of school library advocates (n=9).

Professional literature holds an important place in an applied field such as school librarianship. However, a theoretical and empirical base should support and inform the professional literature. The literature search described in this paper revealed only one empirical article on school library advocacy (Ewbank, in press) and no theoretical work. Future directions for the study of school library advocacy should include a comprehensive review or content analysis of the literature. Additionally, school library researchers should address the dearth of empirical and theoretical work on both the practice and impact of advocacy on the profession.

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Part IV

Issues in the Field



The Library Conference, an Insufficient Knowledge Builder: How the Roles of the School Librarian Are Addressed through State-level Conference Offerings

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ABSTRACT

The American Association of School Librarians (AASL) released new guidelines for school library programs in the summer of 2009. *Empowering Learners: Guidelines for School Library Media Programs* (AASL, 2009) spells out the five roles which school librarians must embrace in order to empower library users with the skills, dispositions, responsibilities, and self-assessments for success in today's world. This poster presents preliminary findings of in-progress research investigating the degree to which state library conference sessions for school librarians promote the five roles of school librarians as identified in *Empowering Learners*. The results of the study show a lack of congruity between the priorities of the national association and the conference-based professional development offerings at state-level conferences. The findings suggest that state-level conference planners be more specific in their calls for proposals, and conference presenters self-assess their proposals in light of AASL's recommended best practices.

Keywords

school librarian, professional development, leadership, state library conferences

INTRODUCTION

National professional associations in the field of education tend to steer the development of standards and promote the establishment of guidelines for best practice. When a national association publishes new guidelines, it is imperative that the "word gets out" to practitioners in the field. Dissemination is a first step in institutionalizing best practices which align with the goals and objectives of the national organization. Beyond dissemination, however, it is necessary that practitioners fully understand how to implement and use the guidelines to affect practice (Sawchuk, 2010).

The American Association of School Librarians (AASL) released new guidelines for school library programs in the summer of 2009. *Empowering Learners: Guidelines for School Library Media Programs* (AASL, 2009), hereafter referred to as *EL*, delineates

school library practice necessary to meet the needs of 21st-century learners. Additionally, *EL* spells out and prioritizes the five roles which school librarians must embrace in order to empower library users: leader, instructional partner, information specialist, teacher, and program administrator. .

In the school library field, research repeatedly points to the incongruity between guidelines for best practice and enactment of those guidelines by practitioners (McCracken, 2001). To address this issue, the association initiated Learning4Life (L4L), an implementation plan to disseminate both the guidelines and the recently published *Standards for the 21st Century Learner* (AASL, 2007). AASL offered L4L and other sessions focused on the new guidelines at 2010 and 2011 ALA Midwinter and Annual Conferences and the 2009 AASL National Conference. Only a relatively small percentage of all school librarians attend national conferences; however, a larger number attend state library professional conferences. These venues offer support for school librarians' professional development toward advancing the goals and objectives of the national professional organization.

The library and information science community widely recognizes conference attendance as an accepted form of professional development. A number of library and information science leaders (Abram, 2008; Morse, 2008; Natarajan, 2008; Simmons & Fenton, 2010), as well as school library leaders (Alaimo, 2004; Franklin & Stephens, 2008; Kelly Johns, 2005; Laughlin, 2010; Needham, 2008) have encouraged conference attendance for professional development and networking purposes. Harrison (2010) concluded from a review of the literature on LIS conferences that they serve as unique forms of professional development unavailable through other modes of continuing education. Yet, professional development via library conferences is limited by session offerings. A review of research related to the library and information sciences field revealed few studies analyzing the offerings at state and regional library conferences, and only one very dated study focused specifically on school library conferences (Eisenberg et. al., 1990).

RESEARCH GOALS

The purpose of this content analysis study is to investigate the current offerings available to school library practitioners through state-level conferences and determine the alignment of those offerings with AASL guidelines. Specifically, this study explores the degree to which state conference sessions for school librarians promote the five roles of school librarians as identified in *EL*.

The following research questions guided the study: 1) What are the major topics of state conference offerings available to school librarians? 2) How do the topics align with the five roles of the school librarian as outlined in *Empowering Learners*? and 3) How do state-level library conference offerings support school librarians' development as leaders, the newest role defined by the national association?

METHOD

Utilizing a stratified random sample, the investigators selected twelve conferences sponsored or co-sponsored by school library state associations held in the 2010–2011 academic year. The sample was drawn across three categories of conferences: state-level school library association-only conferences (N=7), state-level association conferences in which school librarians were a unit within a larger library organization (N=4), and conferences in which state-level school librarian organizations partner with technology associations (N=1). The samples represent approximately 24% of the state conferences in each category.

The researchers developed a matrix using four roles described for school librarians in *EL* as topic domains. (The “leader” role is embedded in the other four.) They identified subcategories under each domain based on the explanation of each role in *EL*. After field-testing the instrument to consistently achieve at least 80% inter-rater reliability, the researchers used the domain matrix to analyze the titles and descriptions of offerings of twelve conference programs. They examined each conference program independently and then negotiated domains and subcategories when discrepancies occurred in their coding. For all conference program analyses, they reached a minimum 80% inter-rater reliability.

DATA ANALYSIS

Following the categorization of the conference sessions, data are being analyzed in terms of: (a) total number of offerings from each topic domain within a single conference and (b) across conferences; (c) percentage of offerings from each topic domain within a single conference and (d) across conferences; (e) total number of offerings from each topic domain which support leadership development within a single conference and (f) across conferences.

The preliminary results reflect data analyzed from the conference sessions in the first two categories: state-level school library association-only conferences and state-level association conferences in which school librarians were a unit within a larger library organization. The third category and the role of “leader” are not included in these preliminary findings.

Table 1
Major Topics of State Conference Offerings Available to School Librarians

Topic	Role	N	%
Program mission, plan, and/or policies	Prgrm	6	11.7
	Admin	3	1

Pleasure reading motivation	Teacher	6	11.7
Promotion of literacy skills	Teacher	5	10.4
Understanding of popular reading material:	Teacher	4	8.36
Author/Illustrator/Poe t talk			
Communication tools to connect the school with the global learning community	Info Special.	3 7	6.88

Table 2

Conference Offering Alignment with Four School Librarian Roles

Role	N	%
Teacher	201	37.36
Program Administrator	185	34.39
Information Specialist	116	21.56
Instructional Partner	36	6.69

DISCUSSION

The preliminary results of the study show a lack of congruity between the priorities of the national association and the conference-based professional development offerings at state-level conferences. In EL, AASL suggests the importance of the instructional partnership role to the future of the profession, yet these data show a dearth of offerings related to this role.

The findings suggest that state-level conference planners be more specific in their calls for proposals, and conference presenters self-assess their proposals in light of AASL's recommended best practices. Additionally, the findings point to the need for AASL to consider further measures to ensure that all school librarians embrace the new guidelines and implement best practices intended to empower 21st-century school library patrons.

The domain matrix developed for this study can be used to guide conference planners, attendees, school librarian supervisors, and school librarian educators as they organize,

analyze, or evaluate school librarian conference programs. Improved conference programming that deliberately and effectively disseminates the tenets of AASL provides opportunities for school library stakeholders to participate in more significant professional development—training that communicates a consistent and reliable message regarding the five essential roles of the 21st-century school librarian. Through thoughtfully planned state conferences, school librarian education can extend its reach, expand horizons for candidates and practitioners in the field, and create on-going professional development opportunities for members of the profession.

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Now is the Time: Librarians as Technology Leaders

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Are you considered a technology leader in your school? School librarianship is undergoing seismic changes with the continued shift of reference resources to online formats, the emergences of eBooks as popular platforms for reading, the increasing use of mobile devices, and intense budgetary challenges. A school librarian who is well-versed on a wide array of technological resources and how to connect them to student learning is an indispensable member of the staff. A school library program led by such a librarian is a great bargain in the use of educational dollars and a vital piece of the total school program to address student achievement.

Why become a technology leader?

A librarian who is comfortable in using various technologies with students and who can recommend just the right technology at the right time is a skilled educator.

Technologies provide us with the ability to teach in ways that are student-centered. Are your teacher colleagues using a flipped classroom approach to provide a more constructivist method of teaching? Are they using a flat classroom approach to connect with other schools internationally? Is your school's educational philosophy based on a learning commons concept?

Regardless of your answers to these questions, gone are the days when effective instruction means a teacher who lectures to students who are sitting passively in rows "soaking up the knowledge". Now, learning is defined as students engaged in inquiry-based learning by researching information from a variety of resources and sharing it with others in multiple platforms, some technology-based. Freda Brown, a librarian at Kenwood Academy High School in the Chicago Public Schools, shared, "A senior student asked me how I learned how to do so many things using the Internet! I told him about Project Elite (one of our district's technology training programs), and the student said it sounded cool!" Students who leverage technologies to acquire and share knowledge are often more engaged and learning more deeply. While many of our students are technologically adept in many ways, they often lack technological skills needed to succeed in higher education and the work place. Librarians play an important role in helping students to build on their existing skills while assisting them to develop new, more critically-relevant skills.

A library program that does not reflect and support a constructivist, technology-infused approach is no longer relevant. It is important for librarians to be technology leaders to teach effectively across grade levels and the curriculum. This library program must also reflect Common Core Standards whether or not they have been adopted in every state.

Supporting Common Core Standards

A majority of states have now adopted the Common Core State Standards. Most school librarians must directly support implementation of these standards and ensure that it is evident in all lesson planning and collaboration. Fortunately, the American Association of School Librarians (AASL) has created an excellent crosswalk between AASL standards and Common Core standards to help us readily see our role in its execution. (See <http://goo.gl/IlzN3>) Here are just a few examples of where the integration of educational technologies is readily apparent in meeting these standards. Each of these AASL standards is aligned to multiple Common Core standards.

1.3.5 Use information technology responsibly.

3.1.4 Use technology and other information tools to organize and display knowledge and understanding in ways that others can view, use, and assess.

3.1.6 Use information and technology ethically and responsibly.

Here are a few examples of Common Core standards that obviously are addressed by technology integration and crosswalk to AASL standards:

CC.3.W.6 Production and Distribution of Writing: With guidance and support from adults, use technology to produce and publish writing (using keyboarding skills) as well as to interact and collaborate with others.

CC.9-10.W.6 Production and Distribution of Writing: Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.

CC.9-10.SL.5 Presentation of Knowledge and Ideas: Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.

Implementing the common core standards and their relationship to AASL standards offers the path to follow to become a technology leader. While the way is created, the desire to do this is up to each individual.

Who can become a technology leader?

It is often thought that only some librarians can become technology leaders in their schools. However, the truth is that whether you are a librarian with one computer on a totally fixed schedule or a librarian with a lab of computers on a flex schedule, you can be a model for integrating technology into your teaching. In the Chicago Public Schools, one of our previously mentioned technology training programs, Project ELITE

(projectelite.wikispaces.com), introduces librarians to various technologies with the goal of preparing them to assume roles as technology leaders. One program graduate, Janice Wellborn, has worked in the challenging situation of serving half-time as the librarian at two schools, Hurley Elementary School and Edwards Elementary School. Once she became “armed” with a menu of great technology tools that she could use with her students, she commented

“I now feel much more confident in using technology in the classroom. I have already taught several other teachers how to use what I am learning. Knowing that I have this technology at my fingertips and that I no longer have to wait for a technology coordinator to let me try something with the students is very, very empowering. I now think of when I want to use technology with students, not IF I want to use it.”

Getting Started

It can be quite daunting to take on the task of doing a “librarian skills makeover”. For some of us, technology skills training was not a big focus of our graduate training. For others, a lack of support and/or access to adequate technology has prevented them from keeping up with changes. Some may feel astute in the use of technologies for personal purposes, but feel that they fall short in identifying technologies that can engage students while working with limited, existing hardware in a filtered environment. The good news is that all of us can develop these skills and successfully utilize them with our students!

Remember this one simple concept: “start at where you are now”. If you have one computer in your library, use it for full-group instruction or to produce a product together. Collaborate with the classroom teacher to the point that is possible, even on a fixed schedule. For example, if a primary class is studying various types of transportation, during library class you may choose read aloud books related to the theme and reserve books on the topic. Why not take it a step further and have a small group of students locate pictures of various modes of transportation? Then, create a VoiceThread in which each student shares, in a few sentences, information about that type of transportation.

Perhaps you are in a library that only has four to six computers. Think about what you CAN do, not your limitations. GoAnimate is another free, safe, and easily-mastered tool in which students can create short animated videos to demonstrate their learning. Students can do their preliminary research in the library and classroom. They can write their scripts in their reading class or in the library. Then, they can use the library computers in small groups over several class periods to actually create their videos. In the Chicago Public Schools, librarians are trained in a variety of safe, engaging technologies as part of our modular Project UPLIFT training. (See cpsproflib.wikispaces.com/uplift) Librarians who completed GoAnimate training stated in an exit survey that they would use the technology to help students learn how to create dialogue, to develop storytelling skills, as a different type of book report

format, to practice writing in a foreign language, and to share research about topics such as ancient civilizations, health topics, and the studying of Shakespeare.

You may not have access to technology training for librarians in your area, but there are many places that you can go to get the training you need. Look for training at your local public library, your regional library system, your state library system, your state's professional technology organization, or your state professional library organization. Take time to attend local and state technology conferences.

Go online to learn about how to use discreet technologies. Many websites have FAQs and short, online tutorials. Many generous persons have created screen casts to quickly teach you how to use various technologies. (See <http://cpsproflib.wikispaces.com/training> for some the author has created.) Attend free and low-cost webinars targeted for school librarians, such as those provided by the TL Virtual Café (<http://tlvirtualcafe.wikispaces.com>), the International Society for Technology in Education (ISTE) Media Specialists SIG or SIGMS (<http://sigms.iste.wikispaces.net/Webinars>), and the One Tool at a Time Webinars (<http://1toolatime.wikispaces.com>), a series provided by SIGMS in collaboration with ISTE's Innovative Learning Technologies SIG (SIGILT). Many vendors and technology providers, also, periodically provide useful webinars. If you can't attend the live webinar, most are recorded for later viewing. Also, there are is wealth of information in YouTube, other video hosting sites, and at the websites of educational bloggers.

Many of us like to learn while in the company of others. Consider creating a small learning cohort with several of your colleagues. While it may be daunting to learn about 6 or 8 new technologies by yourself, it is not so difficult to become an expert on several of them. Set times to meet with your cohort on a regular basis and take turns being the expert who teaches the others. Keep in mind, however, that most good learning takes some practice before you "go live" with students. Don't try to learn a new technology while in the midst of your work day. Carve out a little quiet time for yourself at home, with your feet propped up and a mug of coffee by your side, to practice a technology by yourself.

Improve your technology infrastructure

It is highly unlikely that most of us will start with every technology tool that we need. Start with what you have, support your students in creating great digital artifacts to show their learning, and share these examples broadly with your administration, collaborating teachers, other students, and parents. Fran Feeley, a graduate of the Chicago Public Schools Project ELITE program and the librarian at Inter-American Magnet School, recently shared, "The best new innovation in my program this year is the website hosted by Wikispaces. It has vastly improved the flow of information to parents. It is very easy to make changes, so updates are easy and quick." (See <http://iamslibrary.wikispaces.com/home>) Wikis are great tools to use to showcase student learning, as you can easily update information on the fly and embed student-

made Glogster glogs, Animoto videos, VoiceThreads, GoAnimate videos, Prezis, PowerPoints, videos and other items.

Fran's administration was so impressed with the projects that his students produced that they provided an impetus to redesign the schedule of special classes to provide larger blocks of time for this type of technology-infused research. The bottom line is to DO SOMETHING with what you have, so you have a foundation to ask for more connectivity, more computers, and more peripherals, such as headsets, speakers, microphones, cameras, whiteboards, and other devices, in the future.

Expand your Professional Learning Network

Technology is an ever-changing landscape. To keep current, create a professional learning network (PLN) to help inform your work more easily. Since no one can be an expert in every aspect of technology, build a network of professionals to assist you. One powerful tool to help with the networking is to regularly pick up the latest tidbits of information on Twitter. Follow library and technology leaders who tweet. By using a tool, such as Tweetdeck on your computer or smartphone, you can easily follow important hashtags, such as #tlchat, #edchat, #ISTE, and #SIGMS.

Don't relegate Facebook to just keeping up with friends and family. Many technology leaders use Facebook to communicate with their PLNs. Join groups such as ALA, AASL, ISTE, and SIGMS to keep current.

No one has time to go to many technology-related blogs each day to get the latest news. Instead, use a really simple syndication (RSS) feed aggregator, such Google Reader via your browser or smartphone, to see the latest posts. To avoid getting overwhelmed, prune out contacts that do not meet your needs. Don't try to read everything. We can all devote ten minutes a day to scanning one or more of these great tools to keep us informed technology leaders. Mary Beth Corbin, Chicago Public Schools librarian at Byrne Elementary School, after reflecting on her experiences after completing the Project ELITE program stated that she continued to use her PLN tools, as they made her "...determined to be updated with technology and its uses." She shares, "I am more confident to use technology in my teaching."

Giving back to others

When you first delve more deeply into the world of educational technologies, it is common to lurk quietly; however, none of us advances by working in a silo. Once you and your students experience some successes, take time to encourage your colleagues. Present training sessions at your school, at your district, and at state or national conferences. Write about your experiences in school newsletters and other outlets. Inform others in your PLN. By setting an example of collaboration, you will improve your own professional practices while helping many others. Now, all you have to do is select one new thing to learn and get started!



New Reality School Librarians and Professional Development

**Debbie Abilock
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(Note: An expanded form of this chapter will appear in a book to be released by ABC-CLIO in 2012.)

Kristin Fontichiaro, Violet Harada and I have been on our own professional learning journey. When we began to search for school librarians who had embraced a professional development role in their schools, we were gratified to see many magnificent examples of librarian-teacher collaborations but it was harder to find school librarians who had embraced a professional training role. Nonetheless we have collected some outstanding examples from a rural K-6 school to a large library system, from public schools and districts to private and religiously-affiliated schools. The stories reveal common pedagogical strategies and intentional learning goals, as well as examples of how adult learners can be invited to participate in shaping what they want to know and be able to do. Even so, differences are evident, formed by the specific context for professional learning and the pedagogical preferences and beliefs of the PD leaders. Thus some PD initiatives are shaped by backwards design while others emerge as variegated beads on a necklace. While each story is unique, they are united by the objective of improving the skills and abilities of the adults in service of school improvement and student learning.

At first we were leery of discussing single-session PD models. However, as education budgets undergo increased scrutiny, administrators are asking some school librarians to expand their responsibilities from sites to districts. Simultaneously they are looking inward to develop local talent for professional learning in their schools. Such changes present a remarkable opportunity to the individual school librarian who is willing to begin by offering one-session of professional development to fulfill a teacher or school need in order to step forward as a teacher of teachers. ALA/NCATE and National Board Certification identify professional development as an appropriate role for school librarians, but how to do this is not well-addressed in our literature. It is possible to incorporate the strategies and pointers learned from the design and execution of more expansive and ambitious PD initiatives to a single small step; the differences are in intention, scale and focus, rather than quality.

BEFORE

How do I learn about my potential participants?

Probably the most effective way to understand what your adult learners know, believe, and are able to do is to ask. An initial exploratory conversation might begin at the coffee pot or on yard duty, but is likely to move into a more focused meeting time later. Don't treat this conversation as a collaborative planning meeting – you are an observer, not a participant. Your intention is to learn what a teacher knows and believes by understanding a unit or lesson or teaching goal, so ask questions that help the teacher explain and reflect. Use an approachable voice with tentative language including plurals (hunches, ideas) and exploratory words (possible, might) to clarify. Don't proffer advice, redesign a teacher's assignment or identify the library skill you think is missing. Listen with empathy for their value judgments about what they teach and how. This will help you understand their educational belief systems through which they will filter the applicability of any professional development you might offer.

When I suggest this, many school librarians are quick to tell me that teachers are "too busy." They are. And yet, almost without exception, when these informational conversations do occur, the teacher feels gratified by your interest and satisfied by a chance to explain something that he or she has been teaching and thinking about in depth. (Psst, have you noticed that administrators who take time to have these conversations are lauded as instructional leaders?) For a school librarian, it's the beginning of a collaborative relationship we refer to elsewhere as "conciierge PD" but, for now, it's about understanding your potential learners.

Of course you'll also be gathering other data over time by people-watching just as one of our authors, Connie Williams, scrutinized student projects coming through the library printer to help her identify faculty needs when she joined a new school. Sniff out common misconceptions, irritations or challenges. Have you heard teachers despair of ever teaching students to summarize accurately? Or did you overhear a teacher explain that he clicked on a link in an e-mail from his bank and has to change all the passwords on his accounts? Needs are implied within these stories, whether it is to teach students to do honest work or to learn to evaluate information. Needs represent opportunities to think about a single professional development experience that will resonate with your faculty. Of course you may want to identify needs more explicitly when an administrator offers you a PD gift in the form of some time at a faculty meeting. Always say "yes," and then follow up with a quick poll of interests (theirs, not yours) or list three choices to prioritize in an online survey for your faculty. Whatever you choose to spend those 30 - 60 minutes on, don't use it as an opportunity to broadcast what *you need to tell everyone*. That, as Chris Harris contends in another chapter, belongs in an e-mail. Focus on *their* needs. Not yours, not your library's.

How can I relate their learning needs to my library goals?

Once you have some hypothetical ideas for your one-shot PD lesson, you're going to want to relate them to your own goals. The library curriculum, whether it is defined by a set of standards or your own goals and objectives about what students will learn, grounds your decisions about what to teach adults. Ask yourself: what do my teachers might need to know, understand and be able to do that relates to their needs and goals as well as to the goals that I have for students? There are lots of common goals. The 6th grade English teacher wants to be able to show students how evidence supports claims in writing assignments (Common Core writing standard 6.1), just as you want to teach students to extract a main idea and supporting evidence for their research notes. The math teacher's "guess and check" strategy functions much like a "predict before you click" search evaluation strategy.

DURING

What does a one-shot look like?

Design criteria for a one-shot lesson:

1. Focus on something important to the participants.
2. Engage adults as learners first so that the pull and thrill of their learning binds them to teaching students in the same way.
3. Differentiate tasks so that all participants are challenged.
4. If this PD involves changing teachers' practices, anticipate possible concerns and varying needs for information, assistance and support both during the PD and afterwards.
5. The "Menu of Workshop Strategies for a One-Shot" below outlines a possible flow of a one-shot workshop for your faculty inspired by a menu of strategies that Kristin Fontichiaro created for her preservice librarians.

Appetizers

- **Welcome and logistics**
 - Do we sit anywhere?
 - How do we get online? (Or do you want our laptops closed?)
 - Are there snacks?
- **Introduce yourself (even if they know you) and your goal**
 - Why are we here and you there?
- **Icebreakers (if appropriate, relevant and time permits)**
 - Place an index card on the chair when you arrive with a thinking question, word, or phrase on it. Ask participants to walk around and find the person

with the same index card as yours. Sit with that person and talk about why this might be interesting to learn. For the moment, this person becomes the participant's learning buddy (breaks up chatty cliques).

- Offer an activity like this: "Here are three straws and masking tape (or use Wikistix). With your group, create a model of something you think you know about this topic already."
- **Establish participation or discussion norms** (if appropriate and relevant)
 - For example, "We accept all ideas during brainstorming."
 - Or, "If you want help, ask a friend first, then me"

Salad: A Healthy Taste of New Information

- **Connect to prior knowledge and build on what participants already know**
 - "As a group, what words come to mind when you think about ..."
 - "Take a minute on a piece of scratch paper to..."
 - "Turn to your neighbor and talk about ..."
- **Distribute handouts for reference and less hasty note-taking**
 - **Jigsaw**
Identify a number of short readings about your topic. Divide into the same number of groups, mixing people from different grades and subjects. Give each group a different piece to read and discuss. Re-sort groups so that one person from each original is represented. The new group members pool their ideas to create a bigger picture of some knowledge
 - **Direct instruction** (you tell, they listen and process)
Talk for ten minutes, asking people to listen but not take notes. Then have participants take turns summarizing what they've learned for five minutes each or ask individuals to jot down what they've learned on paper. Then open the floor for clarifying questions. Repeat.
 - **Demonstration** (you model or show, they watch and debrief)
Role play an example, show a video or read a scenario. Ask participants to write down observations, questions, and interactions. Ask participants to talk with their neighbor about what you observed or heard. The reader adds ideas and perspectives (expert, coach, administrator or parent) the group hasn't included.

Main Course: Processing New Information

- **Individuals think alone, then process with another person, and finally share out**
 - Think Pair Poll (or Tweet) – with thanks to Mary J. Johnson
 - Think Pair, then Merge into a Quartet
- **Individual or small group work time** (random, level, cross-level, or disciplinary groups) **on real application for student learning**
- **Interactive activities of different challenge levels to test/build skills** (online tools, games, role-playing, etc.)
- **Case studies for groups to apply when they've learned**
 - "What would you do if ...?" "How do you make sense of ...?"
 - Provide one assignment with an example of student work (ideally a work created by a student the teachers don't know, to avoid defensive responses) and ask the group to redesign the assignment based on what they have learned and how the student responded to it. Or provide a rubric and have participants apply it to the assignment. Or have the participants create a rubric to guide the lesson design.
- **Provocative discussions**
 - There is an art to deepening discourse in a short period of time, especially when the people are processing new learning. Consider facilitating a protocol (Easton 2009) to guide a group's discussion of specific student work, a particular professional practice, a relevant concept or concern related to the focus of your PD.

Dessert: Reflect and Invite

- **Restate the learning objectives**
 - Pair-up to organize and summarize learning. Decide who is A and B. A tells B everything he/she has learned today. At half-time B tells everything he/she has learned without repeating what A said. Share-out one learning your partner gave.
 - Create labels for file folders that hold reminders of your learning today. Share one file folder with the group.
- **Take your learning pulse**
 - Fold a paper in half. On the left write what you've learned. On the right identify your feelings and questions. Share out one idea from both sides of your paper.
 - Map your learning as a _____ timeline with rising peaks

for high points. Explain to a partner why you have a peak or a valley at a certain place.

- **Build the future**, e.g.,
 - Participants fill out a short evaluation as the “ticket out the door” which includes suggestions for another PD.
 - Ask a walk-away question that has participants thinking as they leave.
 - Frame a destination and list the help, support, or information you’d could use to make it happen.
 - Send out an e-mail asking for people to suggest next steps, future workshops, etc.

AFTER

All learners go through evolving stages of concern about change (Hord, Rutherford, Huling and Hall 2006) during which they have differing needs for information, assistance and support and varying capacities to reflect and change. The first step is to understand their concerns so that you can respond with an intervention. Some teachers may feel secretly inadequate because they’ve never heard about or don’t understand what you’re presenting. Others may worry about how it might change their classroom or even if they’ll be able to manage a change. Brighton and Hertberg (2004) present teachers’ practices as a house they have designed and built; some teachers see PD as a hurricane threatening their home while others are creating an open house where others visit and gain nourishment. At different times in their professional lives, these authors describe teachers as **resisters**, **accessorizers**, **redecorators** or **renovators** when they are being asked to change their house.

Overt or covert **resisters** refuse to consider changes as a result of one of these factors:

1. A dysfunctional match between their teaching beliefs and practices and those embedded in the professional learning initiative.
2. A lack of agency – feeling they had no choice in being involved.
3. An absence of systematic, long-term focus in the school – this was just one more example of lurching from one professional development initiative to the next.
4. Prioritizing this as less urgent than other mandates.

Some of their resistance is out of your purview; you can understand but, quite possibly, are unable to change anything that you are doing. However the first- and, to some extent, the second-factor can be addressed by you in future planning, if you invite resisters to explore their behavior using the techniques described at the beginning of this chapter. With understanding and empathy you may be able to differentiate so that the anticipated concerns and fears of this group are addressed.

Accessorizers make superficial changes, adding to their repertoire of “tricks” by

purchasing new curtains or a lounge chair. Brighton and Hertberg (2004) postulate that they lack a conceptual understanding of the underlying purpose and pedagogy of the professional changes and, since these teachers never reflect that it might be at odds with their own educational belief system, feel no need for structural changes.

Often, accessorizers' strong sense of professional competency was reinforced by their colleagues. Many were held up by their districts as model teachers and were frequently asked to be mentors or to take on other leadership positions in their teams or schools. Their reputations as master teachers often resulted from the fact that, from the outside, their classrooms looked impressive and well-run. These teachers generally possessed strong classroom management skills that kept their students on-task and orderly. (Brighton and Hertberg 2004, p.7).

While a one-shot workshop gives accessorizers little more than another decorative touch for their living rooms, they are influential interpreters of your goals because they are generally respected as leaders. To impact their instruction and beliefs, you need to provide scaffolded time for reflection during your one-shot so that accessorizers have an implicit invitation to think about and discuss problems in their teaching or in student learning that they cannot ignore.

When your teaching matches the educational belief system of your participants, the **redecorators** will reflect on their own instruction and assimilate changes into their practices. They will see some teaching problems that they can address through implementing the learning you have proffered. They are experienced teachers who will be model learners, accurately implementing important changes, as a result of your professional development workshops. While you can anticipate no revolutionary changes in their classrooms, their instructional practices will build your reputation as a trusted teacher, coach and mentor whose PD is relevant to student learning.

When and if you can present the last group – the risk-taking **renovators** – with a compelling case for instructional changes which they see as having major benefits for all of their students, these are the learners who will gut their homes and rebuild their instruction and beliefs from the inside out. As teachers, their experience ranges from beginner to expert but, as learners, they share a reflective openness to ambitious challenges during which they will risk demolishing the practices and beliefs that frame their houses for the sake of significant student learning. “These teachers seemed to realize that ambiguity is a natural part of the process of learning; they recognized that discomfort is necessary for growth” (Brighton and Hertberg 2004, p.12). For this group, your differentiated PD should include an open-ended inquiry, novel problem or a fresh perspective on common concerns.

Planning, implementing, evaluating professional development with the scope of institutional change may seem a far cry from a baby-step of single PD workshops whether they are in school libraries or learning commons. Yet any journey

always starts with a single step. If educators “develop the knowledge, skills, practices, and dispositions they need to help students perform at higher levels” (National Staff Development Council 2011), they can build the coherent school-wide learning toward the heart of society’s hopes for its children.

Vi, Kristin and I are turning to Treasure Mountain, a think tank of the brightest minds in our profession, to help us answer this question: How do we grow the capacity / ability of pre-service students and practitioners to do PD? Or, perhaps, what houses can we build with them?

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Outstanding school Libraries in the United States: An Examination of Their Characteristics

**Nancy Everhart
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What are the similarities and differences of outstanding school libraries and librarians? The 35 school librarians on the AASL Vision Tour completed two surveys in order to answer this question. They completed AASL's Planning Guide for School Library Programs Assessment Rubric as well as the PALM Center's leadership in technology integration survey. The resulting data from both these tools will be discussed.



Part V

Action Research and the Learning Commons

Collaborative Inquiry

Teachers creating knowledge and improving learning for students

REPORTS
Teacher-Librarians

2010-2011 Volume 1

Introduction

The Greater Essex County District School Board is pleased to share the research conducted by teacher librarians and classroom teachers during the 2010-2011 school year.

Inquiry, according to Together For Learning (2010), "encourages a collaborative approach to learning" as it "expands personal horizons and knowledge base" (p. 23). Fifteen teacher librarians from fourteen schools, along with classroom teachers at each of those schools engaged in collaborative inquiry to learn ways to improve their practice and student achievement.

Presented in this first volume of teacher librarian focused collaborative inquiry is a significant contribution to the knowledge base of teacher librarianship. Projects addressed current educational issues such as technology implementation, student reading engagement and attitudes, parental engagement and how teacher librarians provide support to classroom teachers.

Thanks are extended to Dr. Jenni Donohoo, Teacher Consultant for Research and Program Evaluation for her expertise in facilitating the process of collaborative inquiry.

We hope that you enjoy reading the contributions from this year's participants. We look forward to working with additional teams in the future.

Sharon Seslija,
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School Libraries,
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Belle River DHS & J.L. Forster SS

Inquiry Team: Andrea Jackson & Barbara White, Teacher Librarians

Research Question: Will the integration of technology into projects developed and implemented in collaboration with the teacher-librarian increase teacher confidence and willingness to integrate technology into future lessons and will this use of technology increase student engagement?

Vision - Preferred Future

As we begin to move our libraries more towards a Learning Commons model, it is important to note the stress that is placed on the role technology plays in student learning; “[The Learning Commons] brings state-of-the-art technology into learning to enable, motivate and inspire all students, regardless of background, languages, or disabilities, to achieve. It leverages the power of technology to provide personalized learning and to enable continuous and lifelong learning” (Loertscher 2011). As Teacher Librarians, we recognize that a shift must occur in our teaching to provide students with proper instruction so that they may fully utilize the power technology has to offer.

Within the Learning Commons, the Teacher Librarian (TL) has a great opportunity to foster the key components of learning partnerships - between the teacher and TL as well as between teachers - and encourage the use of technology in learning. Facilitating new ways for teachers and students to effectively use technology and learn together will benefit the learning process for the teacher and student, and forward the concept that “in the Learning Commons everyone is a learner” (OSLA 8).

Theory of Action

As TL's we increasingly use technology to implement our lessons yet observed that many teachers were reticent to incorporate this into their own lessons. We believed that if teachers become more familiar with using new technologies by working with the TL then they will feel more comfortable in the future using and exploring available technology. One of the long term aims is that teachers not involved in the initial study will see the benefits of this collaborative effort and be more willing to partner with the TL. By extension they then will be more likely to try new technologies in the future. We hope to see more and more teachers willing to use these strategies.

We expected an increase in student engagement. Technology for students is an integral part of their life. The efficient and effective use of these technologies is a necessary and basic 21st century skill that they will need in their future. Connected

by social media and comfortable with frenetic pace of changing technologies, they still need to be given opportunities to use these tools to develop their critical and creative thought (OSLA 12). One of the challenges put forward in *Together for Learning* is that, "many students are finding it almost impossible to make meaningful connections between what they learn at school and what they need to know outside in the world" (OSLA 5). Using technology for learning will engage the students by encouraging them to use and develop the skills that they are so familiar with outside of school for academic purposes, hopefully lessening the gap between what they perceive as the "real" world and school.

Because of the TL's unique relationship with students, we realized we were more comfortable than many teachers asking students for assistance. We hoped that we would have opportunities during this study to demonstrate how everyone can be part of the learning commons as, "technology-enabled learning partnerships foster the mutual exploration of ideas, and lead to innovation and creativity" (OSLA 11). It is good not to be 'the sage on the stage'.

Purpose for the Study

The purpose of this study was to determine if teachers, exposed to new technologies, within a collaborative partnership with the teacher-librarian, would feel more comfortable using the learned technology. We were confident that this would then make the technology more of a tool and less an end in itself and because of this experience the teacher would be more likely to use new technologies in the future. We presented technology as an integral part of creating "personalized, individualized, motivating and enlightening lessons" (OSLA 8). As well, our goal was to "build on the entertainment value that students find in social media to further learning opportunities for critical and creative thought" (OSLA 12).

Justification

In order for the Learning Commons to fully develop, technology must be integrated into all aspects of the learning experience (OSLA 39). Teachers are busy with a myriad of duties and often are more comfortable using 'tried and true' methods of implementing their lessons. Lack of time to learn new methodologies and technological skill level are two of the reasons that make this integration seem daunting and less likely to happen. By partnering with the TL, teachers have more of an opportunity to learn more about social media and technology. Our hope is that this will prove to be a positive experience for the teacher and give them confidence to try new technologies in the future. Presenting a connection to the world outside of school will help to increase student engagement in their studies. These outcomes will foster increased partnership with the TL in the future.

Description of Procedures and Implementation

This Action Research project consisted of four parts: collaboration with teachers, baseline surveys, the introduction of new technologies to teachers and students, and reflection surveys.

Part A: Teacher/Teacher Librarian Collaboration

The first part of the project was for the TL to dialogue with teachers about upcoming opportunities for collaboration. During this discussion, the teachers would come up with a team teaching plan which had the classroom teacher focusing on content/curriculum and the TL focusing on the teaching of a new technology. Once a lesson was created, the necessary computer/library time was scheduled.

Part B: 'Before' Survey

Before any new teaching would occur, the TL would have students complete a brief survey (see appendix A). This survey asked students to gauge their use of various technologies, their comfort level with them, and how they feel their use affects their school work. Students would then proceed with learning about the new technology, use it to complete their assignment and then reflect upon the technologies usefulness.

Part C: Student/Teacher Introduction to New Technology

During the teaching portion of the project, the TL would introduce students and the teacher to the new technology they would be using to complete the assignment. Using a Smart Board or projector cart, the TL would go through a detailed lesson showing everyone how to use the technology for their specific purpose and answer any questions or troubleshoot at this time. During this teaching time, it was important that not only the students, but the teacher become familiar with the said technology. The following technologies were the main focus of various lessons:

- Podcasting using Audacity
- Digital storytelling using Adobe Premiere Elements
- Creating Wiki's/Blogs
- Searching Subscription Databases
- Twitter
- Voicethread
- Glogster
- Delicious
- Bitstrips

Most of the collaborative experiences spanned a few classes which gave both the students and teacher time to familiarize themselves with the technology and to learn how to troubleshoot any problems that may arise.

Part D: Reflection Survey (Teacher and Student)

At the end of the assignment, students were asked to fill out an AFTER survey (see appendix B) which made them re-evaluate their comfort level with the technology, if they felt it was useful and if they felt that the collaboration between the TL and Classroom teacher was beneficial to their learning.

Once the project was complete, teachers were asked to complete a similar survey (see appendix C) which had them reflect on their comfort level with various technologies both before and after collaboration with the TL. They were also asked if they would use the said technology again on their own, or with the help of the TL.

Findings

Teacher Reflections

At the outset of this project, many teachers had expressed that without fully understanding how to use technologies themselves, they did not feel comfortable introducing them to their students. However, it became evident at Belle River DHS that teacher confidence in using new technology was a barrier that could be overcome with the help of a TL who was confident in the use of various technologies. With 100% of teachers surveyed feeling that their confidence level increased with a specific technology in mind, it is evident that the collaboration was a success. Furthermore, 90% of teachers felt confident enough to integrate the newly learned technology on their own, and 100% would use the technology again with the aid of the TL (See Appendix C). In reflecting on the process and implementation of the project, a few changes would be made if exploring this in the future. Next time when completing student surveys, a site other than Survey Monkey would be used. Survey Monkey limited the number of student responses, which could pose a problem when completing the survey with many classes. Another step that would be taken is to integrate the surveys into the assignment so there would be a higher completion rate. Many students ran out of time or simply 'forgot' to complete the 'After' survey, resulting in many more 'Before' survey responses than 'After' survey responses. Another barrier was the loss of all surveys completed at Forster due to technological difficulties.

This project was not only a success amongst teachers, but students also reported some increases in their confidence with various technologies due to the collaboration with the TL (see Appendix B). With 49.2 % of students reporting that they receive better grades in courses which incorporate technology and 47.6 % reporting that they find classes that incorporate technology more interesting, it only seemed logical to provide the instruction needed to use this technology that 39.7% of students demanded (see Appendix B). Also, with 71% of students reporting that the use of technologies increases their ability to collaborate and communicate, which reinforces that idea that the purpose of the Learning Commons is to "seamlessly integrates technology with working together" (OSLA 8), it is important to make sure students learn how to use technology in the most effective ways possible. Overall,

an astounding 77.8% of students felt that the collaboration between their classroom teacher and the TL enhanced their learning experience.

Student Reflections

Surveys and anecdotal observations showed that the students felt that the experience was a positive one. They appreciated the acknowledgement of their skills and were surprised often at what they had to learn – and that the teacher or TL actually knew something about technology that they did not!

One concern put forward by teachers and students was that some students did not have access to technology outside of school and therefore put at a disadvantage. While this is unfortunate it is not really a barrier to learning. The school library is open before and after school as well as at lunch and both the public and University libraries have public access to computers. It is hoped in the future that netbooks or other portable devices will be available for the few students in this situation.

The 24/7 aspect of the technology gave most students the freedom to complete their work on their own schedule – something especially appreciated in the senior classes. They also commented on the ease of doing work at home on their own computers which are often more state of the art than those offered by the schools. One senior class took the initiative to create their own Facebook group to continue and extend classroom discussions. They are comfortable with this technology and while the wiki allowed for collaboration, they felt Facebook was more efficient for this purpose. Even though this is a blocked site by our Board students were willing to use it on their own time. This illustrates the disconnect between school and the outside world but perhaps more importantly it illustrates how quickly students can adapt and integrate their knowledge and skills into their learning process.

Technology helps facilitate differentiated instruction and many students commented on appreciating that they could learn what they needed and not repeat lessons on what they already knew. Most seemed comfortable in the informal atmosphere in the library where different activities were going on simultaneously and found this more engaging than a traditional lecture style of lesson. There were however some students who did not find this beneficial. They commented on being distracted and having difficulty completing tasks on their own. These are important concerns as they directly reflect a lack of 21st century skills that they will need to be successful.

One of the interesting outcomes was the perception of the library and the TL by the students. While we as TL's see ourselves as teachers, often the students are not sure of our role. Many students commented on realization that the library and the TL were valuable resources and liked us becoming an integral part of their classroom. Many commented on appreciating that they could come to either the TL or the teacher for help or clarification.

Conclusions and Future Directions

There is a great amount of research available that recognizes the benefits that technology can have on student learning, however, as stressed by Moss and Brookhart, "A body of **local action research results** will inform the adult partners about what works best with the crop of learners you have at the present time" (Loertscher 2010). This viewpoint reinforced the idea that it is important to know your students. Having completed this study, having a clearer view of what our students want/need will help us move forward in the future.

The most obvious conclusion we have come to through our research is that students are very much using various forms of technology and social media in their everyday lives, and that they are open to the idea of seeing them brought into the classroom as well. Our future direction as far as students are concerned is to make sure that students are being taught to use these technologies in meaningful ways through the continued collaboration between TL's and classroom teachers.

As stated in *Together for Learning*, "we are just beginning to realize the power of technology on our communication, research and critical thinking" (OSLA 43). With this in mind, we feel that this project gave Teacher Librarians a good look into what needs to be done to increase technology usage across the curriculum so our students may benefit from this power. This has spawned both the Forster and Belle River TL to implement monthly 'Teacher Tutorials' which highlight the use of new technologies so that teachers can become familiar with them, and hopefully show an interest in integrating them into their lessons with the help of the TL. With the further collaboration between TL's and classroom teachers, the widespread confidence and use of technologies will hopefully become a common practice.

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Editor's Note: For all the action research projects, see the Book2Cloud edition.



An Information Literacy Question Bank for Wellesley Public Schools

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Rationale for the Question Bank

As a result of several surveys and pilot projects the Wellesley Public Schools are looking to develop a validated question bank for use by exiting 5th/entering 6th graders, exiting 8th/entering 9th graders and ultimately, exiting 12th graders. The purpose is to document their Library and Information Literacy proficiencies as defined in the Wellesley Public School Library Department Benchmarks (Standards). These benchmarks were developed in October, 2010, based on state (MASL) and national (AASL) standards and guidelines, the Common Core, and ultimately, updated using the recent PARCC draft documents. This question bank would be used by the librarians as formative assessment (end of lesson on specific topic), or more robustly, as an indicator of proficiency as the student moved from the elementary program to the Middle School and ultimately the High School. The fundamental question that the librarians were asking is "Are students learning what we are teaching? and if so, their proficiencies would indicate what future lessons would be appropriate. If proficiency was under expectations, this would force the modification and restructuring of the lessons and units to achieve better student understanding.

Since librarians (library teachers) are to be evaluated on the same basis as classroom teachers, there is an immediate need for them to document their contribution to student achievement. The question bank, in addition to reading logs, reading portfolios (identified by randomly sampling whether books chosen from the library weekly were actually being read), observations, and other formative assessment documentation as well as metrics available through our library automation system OPALS should be able to give us a better picture of student progress.

The end product we envision is to post the question bank online, using multiple choice questions to generate mini-instructional lessons (if the wrong answer is chosen) allowing the student to return to the question to think it through - and ultimately generating a certificate of completion (which could then be graded and included in a marking period English grade). To this end, the questions are carefully categorized so that a random question from each category could be pulled for response.

**WELLESLEY PUBLIC SCHOOLS
DEPARTMENT OF LIBRARIES
LEARNING SKILLS AND EXPECTATIONS**

The attached Department of Library and Information Resources Learning Standards: Skills and Expectations have been developed using a wide-range of current resources that reflect best practice in the development of Partnership for 21st Century Learning. They were built on the learning skills developed by the librarians to guide their teaching and prepare students for working in a 21st century world and have since been revised to include the Common Core and PARCC documents guidelines and requirements.

An extensive bibliography accompanies these expectations. It is assumed that the skills will be taught in a context that encourages application and gradual sequential complexity. The Library Department has been in touch with not only colleagues in the k-12 community, but also with our college counterparts to assure that we are adequately equipping our students for not only the work world, but also for the extended educational environment of college and university learning.

There is an expectation that these skills are meta-cognitive applications of inquiry, and will be taught in collaboration with classroom curriculum and instruction. Aspects of inquiry would include:

- Task initiation [What do I already know about the area of inquiry? What are the requirements of the assignment?];
- Topic Selection [What interests me? What relates to my personal life? What do I want to know?];
- Exploration [What topics interest me? Which resources can I use to find out about my interests?];
- Focus formulation [How can I narrow down my interests to a researchable topic? What questions can I ask? How can I hypothesize? What are the key words of my topic? Which resources will be most helpful?];
- Information collection [What information is relevant to my focus? How shall I take notes? How can I interact with the information to think deeply about it? What questions can I ask? How else can I get information (surveys, interviews, focus groups, etc.);
- Presentation [what type of format is appropriate to communicate my findings best: written, graphic, graphs and charts, podcasts, oral presentation, on-line experience.]; and
- Assessment [What did I learn? How well did I follow the rubric? What types of interventions were most helpful? What was the analysis of the final product? Was the learning/understanding gleaned worthwhile? Did I do some self-reflection on the benefits of the experience?].

During each of the above stages students would ask themselves whether they need help. The teacher and librarian observe student actions, listen to their thoughts as expressed in interventions such as concept maps and graphic organizers, and feelings, or their attitudes toward the project and the process.

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October 2011

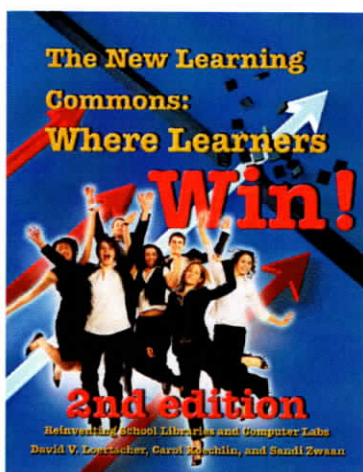
Wellesley Public Schools

6-8 Library and Information Learning Benchmarks March 2010

Editor's Note: The standards upon which this question bank was created are located in the Book2Cloud edition of this book.

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The New Learning Commons Where Learners Win! Reinventing School Libraries and Computer Labs

David V. Loertscher, Carol Koechlin and Sandi Zwaan; ISBN: 978-1-933170-67-0; Hi Willow Research and Publishing; 2011; \$30.00

Originally published in 2008, the first edition of this book proposed a complete rethinking of the school library and computer lab in a 21st century school. After four years, the concepts of the Learning Commons have gained momentum across North America and in Australia. This second edition is rich in the further development of the concept and its

implementation and draws upon many schools that have developed their programs and recreated their physical space and turned their library websites into virtual learning commons. For those who purchase the print edition, a Book2Cloud version is accessible. In this collaborative digital work, the many links to resources are live and readers can comment, add material and join with other readers in the discussion beyond what a static ebook version would have been. Every chapter has been totally revised and rethought to include the latest research in education, technology, and library science. The book also contains a new chapter concerning the building by students of their own personal learning environment. In this life-changing project, they learn to create their own portal into the world of the Internet, construct a personal learning network, and construct their own portfolio and public face on the Internet. Readers of the first edition will be pleased to encounter many more resources, ideas, experiences from the field, and a host of ideas from educational authorities around the world. And with the Book2Cloud edition, you can join in the conversation with the authors.

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