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REINVENTING SCHOOL LIBRARY MEDIA PROGRAMS IN THE AGE OF TECHNOLOGY

A

**Guide for Principals
and Superintendents**

2nd Edition

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INTRODUCTION

The need to reconceptualize school libraries has never been greater. The rush of technology has caused some to ask, “Is a school library media center needed?” “Is any library needed?” “Isn’t it all on the Internet?” Regular library and Internet users understand the benefits of integrating all forms of information technologies into a full-service organization with a human interface. In schools recently networked and upgraded for extensive technology use, administrators understand that the immense investment must translate into improved learning opportunities — and that key people make it happen! We might demand that teachers raise scores using information technology, but without support, it will not happen.

This volume has been designed as a quick short course for administrators who want to maximize the impact of information technologies and the library media program on teaching and learning. Thus, it concentrates on the program — not the hardware. The book is divided into five main sections that discuss: collaboration with teachers in the design of learning, building avid and capable readers, enhancing learning through technology, creating an information literate learner, and building an information infrastructure.

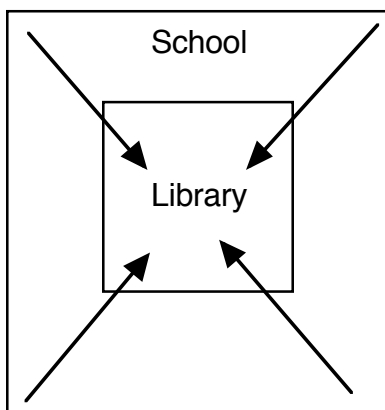
Within each section, pages have been designed in such a way that each can be used as a handout for a workshop, an interview, a planning session, or for a group of parents. Many pages contain checklists to stimulate thinking and planning. Two threads run through all sections — budget implications and assessment.

A New Vision

Twice in this century, school libraries have undergone a major redesign. The first was in the 1960s when book libraries had to be rethought to include a new wave of audiovisual devices and software. The second began in the 1980s with the proliferation of the microcomputer, computer networks and the Internet. The first redesign required only a shift in contents. The second requires an entire rethinking.

We have usually thought of the library as the “hub of the school,” a place where everyone comes to get materials and equipment. Now, however, in the age of technology, the library media center becomes “Network Central” with its tentacles reaching from a single nucleus into every space of the school and into the home. Where we once thought of the library as a single learning laboratory, now the entire school becomes a learning laboratory served by Network Central. It becomes both centralized and decentralized at the same time.

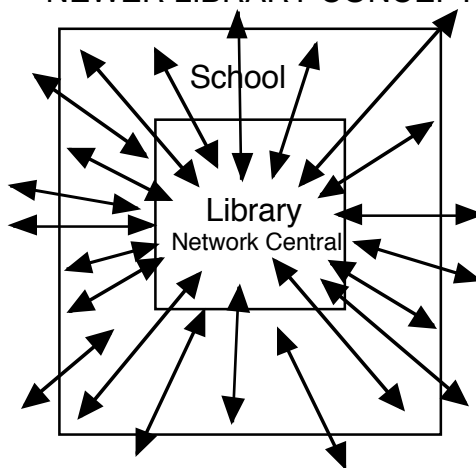
OLDER LIBRARY CONCEPT



Traditional

- Print rich
- Print and AV oriented
- Centralized (one location)
- Rigidly scheduled
- Single person staff
- A quiet, almost-empty place
- Open during school hours

NEWER LIBRARY CONCEPT



New

- Information rich in every format
- Multiple technologies
- Centralized / decentralized simultaneously
- Flexibly scheduled
- Professional and technical staff
- A busy, bustling learning laboratory
- Online services 24 hours/day, seven days/week.

With the advent of high technology and sophisticated networks, many schools have approached technology as if it were separate and distinct from “the library.” But after the networks are in and the equipment in place, it soon becomes evident that materials and information merely have new paths to take. The concept of a vast store of materials and information poised to serve teachers and learners remains intact no matter what it is named — the library, the library media center, the information portal, or network central.

Successful Students in the Age of Technology

What type of person is likely to be successful in today's information-rich and technology-rich world? What type of student is likely to be successful in the world of the future insofar as we can foresee that world?

When an exemplary library media program is in place, every young person can be equipped with:

- | | | |
|-----------------------------|--------|---|
| Reading Literacy | —————→ | 1. An Avid and Capable Reader. |
| Technology Literacy | —————→ | 2. A Skilled User of Technology Tools.
3. An Enhanced Learner. |
| Information Literacy | —————→ | 4. An Organized Investigator.
5. A Critical Thinker.
6. A Creative Thinker.
7. An Effective Communicator.
8. A Responsible Information User |

Useful publications amplifying this vision:

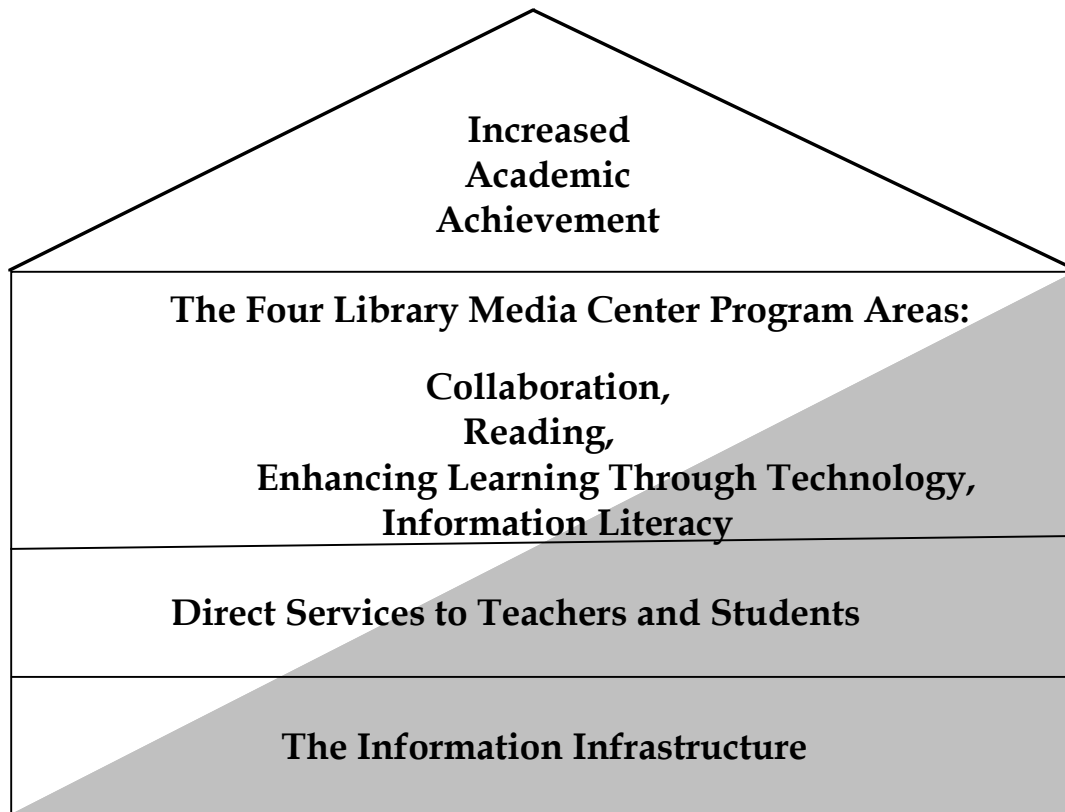
1. American Association of School Librarians and Association for Educational Communications and Technology. *Information Power: Building Partnerships for Learning*. Chicago: American Library Association, 1998.
2. *National Educational Technology Standards for Students: Connecting Curriculum and Technology*. Eugene, OR: International Society for Technology in Education, 1999.
3. Loertscher, David V. *Taxonomies of the School Library Media Program*. 2nd ed. San Jose, CA: Hi Willow Research and Publishing, 2000. This book contains a comprehensive treatment of all the program elements of the school library media program and can be considered an extension of this *Reinvent* book.

Companion Publications

1. **For Teachers:** Loertscher, David V. and Douglas Achterman. *Increasing Academic Achievement Through the Library Media Center: A Guide for Teachers*. Hi Willow Research & Publishing, 2002. Designed as a companion volume to this book but designed for teachers who want fresh ideas of working with library media specialists.
2. **For School Boards:** Watch for a companion publication in 2002 by Ken Haycock targeted at school board members in the reinvention of school library media programs. It will be announced at <http://www.lmcsource.com>

The Library Media Center as a Focal Point to Achieve Student Success

To stimulate all learners to reach their potential in the information world, the library media center staff concentrate on four major program areas sitting atop the school information infrastructure. These four central program elements are the foundation of increased academic achievement.



(white area = the professional role; gray area = the support staff role)

- **Network Central: The Information Infrastructure** in the library media center provides the technological foundation for delivering materials and information in all media formats. It is composed of the networking, the equipment, staffing, budget, facilities, repair and technical support for every kind of technology including print, multimedia, video, and digital.
- **The Library Media Center Program** is a tool for using all the technologies in such a way that teaching and learning are affected in major positive ways.
- **Increased Academic Achievement** is the outcome. In addition to academic achievement as a central thrust, there are a host of other personal benefits to a student and teacher who use technology and information well such as becoming a lifelong reader, an independent learner, successful seeker of information, or a career builder, among others.

What the Research Says: The Connection Between School Library Media Centers (LMC) and Academic Achievement

Three Major Studies done in 2000 in over 900 schools:

**Alaska
Pennsylvania
Colorado II**

Plus two other statewide studies done in 2001:

**Texas
Oregon**

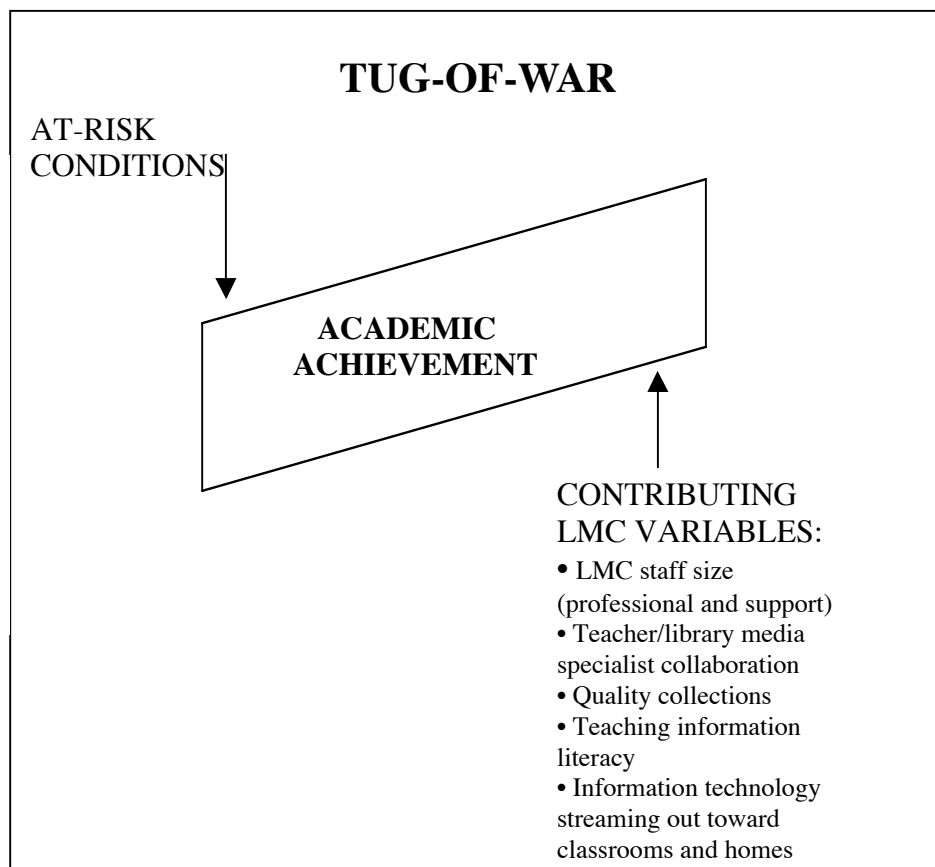
Strong school library media programs make a difference in academic achievement. This happens when the library media center has a high quality information-rich and technology-rich environment, easily accessible to students and teachers, and when there is both professional and support personnel who provide leadership and tireless partnering. Significant contributions happen in spite of the presence of at-risk factors.

The strongest effects on quality education continue to be various at-risk factors such as poverty and lack of English language skills. However, in spreading the banquet table for young learners, the research says loudly that quality library media programs are part of the main course rather than a side dish.

Sources

The studies from Colorado, Alaska, and Pennsylvania are summarized in: Lance, Keith Curry and David V. Loertscher. *Powering Achievement: School Library Media Programs Make a Difference: The Evidence*. San Jose CA: Hi Willow Research & Publishing, 2001

The Texas and Oregon studies can be linked from <http://www.lrs.org>



COLLABORATION WITH TEACHERS IN THE DESIGN OF LEARNING

The advent of standards-based education and concentration on academic achievement has major implications for the type of library media program to build in a school. Millions can be spent on facilities, collections, and technology, but if they are not used wisely, they are a drag on the entire school. The research on library media programs points to a key element if a major impact is to be achieved, i.e., the collaboration of teachers and library media specialists in the creation of quality learning experiences. In a vibrant center, an administrator might see many of the following activities at any time during the school day.

Collaboration Observational Checklist

Teachers and library media specialists are:

- Brainstorming a curricular unit.
- Developing plans, activities, and assessments for a learning experience.
- Choosing the materials and technologies to support instruction.
- Working side by side as the unit activities happen.
- Jointly evaluating the success of the unit.
- Engaging in staff development to refine the collaborative process.

Students are:

- Working in a bustling learning lab atmosphere on projects, problem solving, portfolios, presentations, and assignments.
- Comfortable in using a wide variety of information sources and information technologies from print to multimedia to digital.
- Sharing their findings in group-related activities.
- Interested and excited about learning and eager to begin the next project.
- Working by themselves quietly on projects or research.

Facilities are:

- Functional enough to support individuals, small groups, and large groups for quiet individual study, information gathering, busy production activities, group work, and presentations as the collaborative process begins to produce results.
- Rarely empty.

Library Networks are:

- Brimming with quality information streaming throughout the library media center, into the classrooms, and into the home.
- Being used and used and used.
- Reliable.

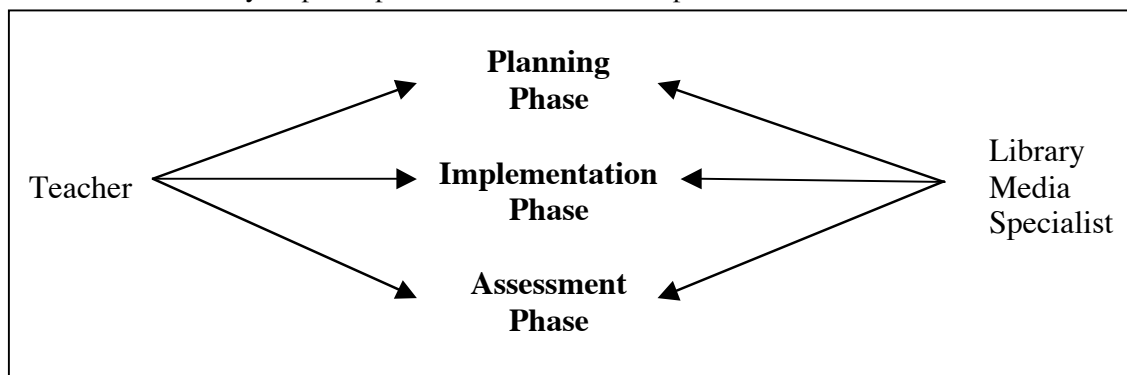
Teacher/Library Media Specialist Collaboration: What Is It?

Two partners, the teacher and the library media specialist, team to exploit materials, information, and information technology to enhance a learning activity.

Together, they:

- Plan goals and objectives of the unit.
- Complete preparations for the unit.
- Jointly teach the learning activities.
- Utilize technology to achieve learning objectives.
- Assess learning and the learning process.
- Assess the materials, information, and information technology used.

Such collaborative learning experiences can be a few days in length, several weeks, a semester, or even a year-long project. The teacher might be a single person, a small group of teachers, teachers from several disciplines, a subject department, a grade-level team, or the faculty as a whole. Other specialists and the students themselves may be participants in the collaborative process.



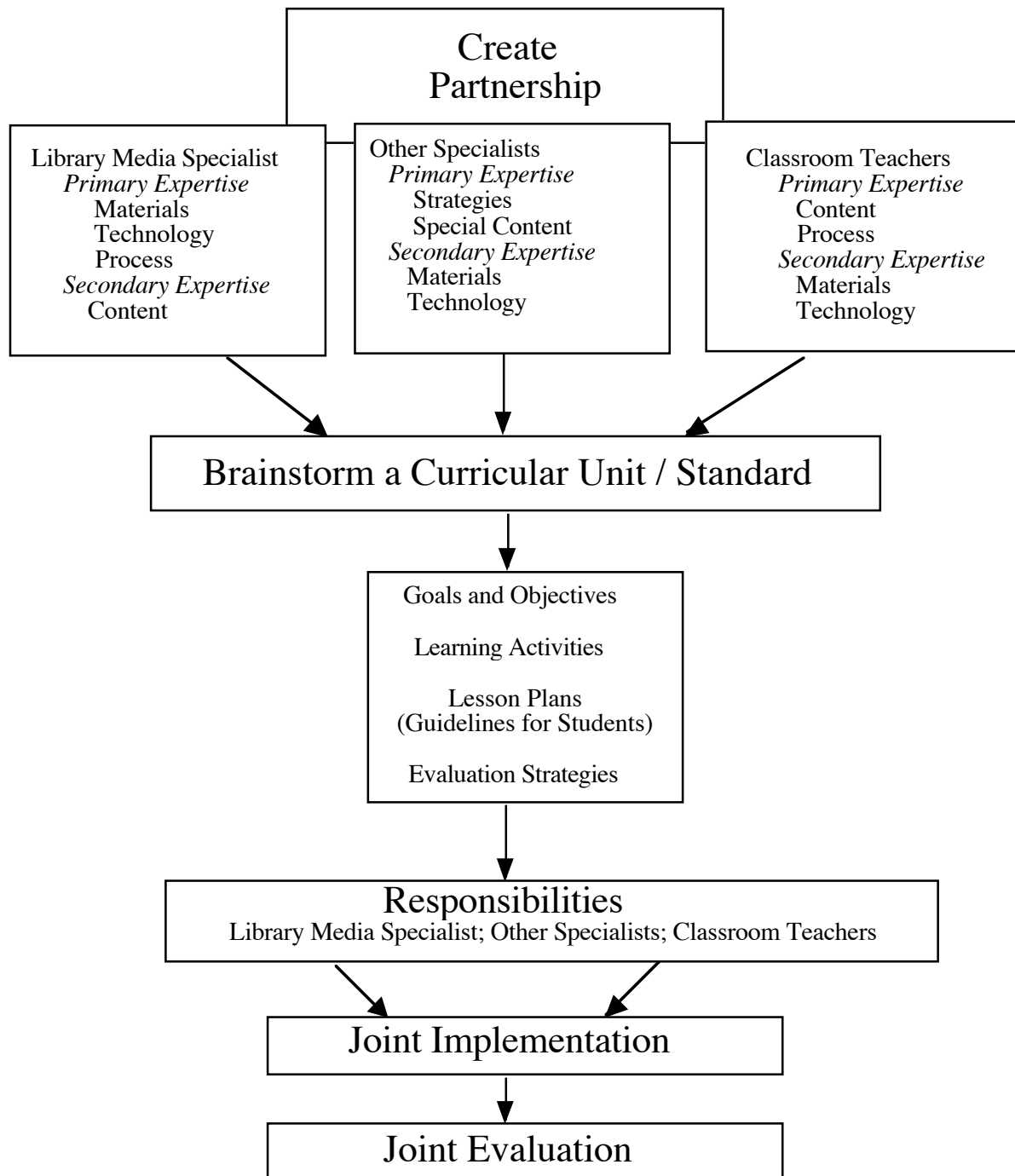
Why is a professional library media specialist an essential part of collaboration?

The library media professional has:

- Knowledge of the curriculum, teaching, and learning.
- Education (this person often holds teacher credentials plus a library media credential).
- Experience working with teachers, learners, and materials.
- Tools and materials expertise (knows the right tool and information source for the right person at the right time).
- Knowledge of techniques for using technology to enhance learning.
- A repertoire of successful practices with a wide variety of teachers, students, and technologies—thus serving as an idea fountain.
- Knowledge of student achievement over time.

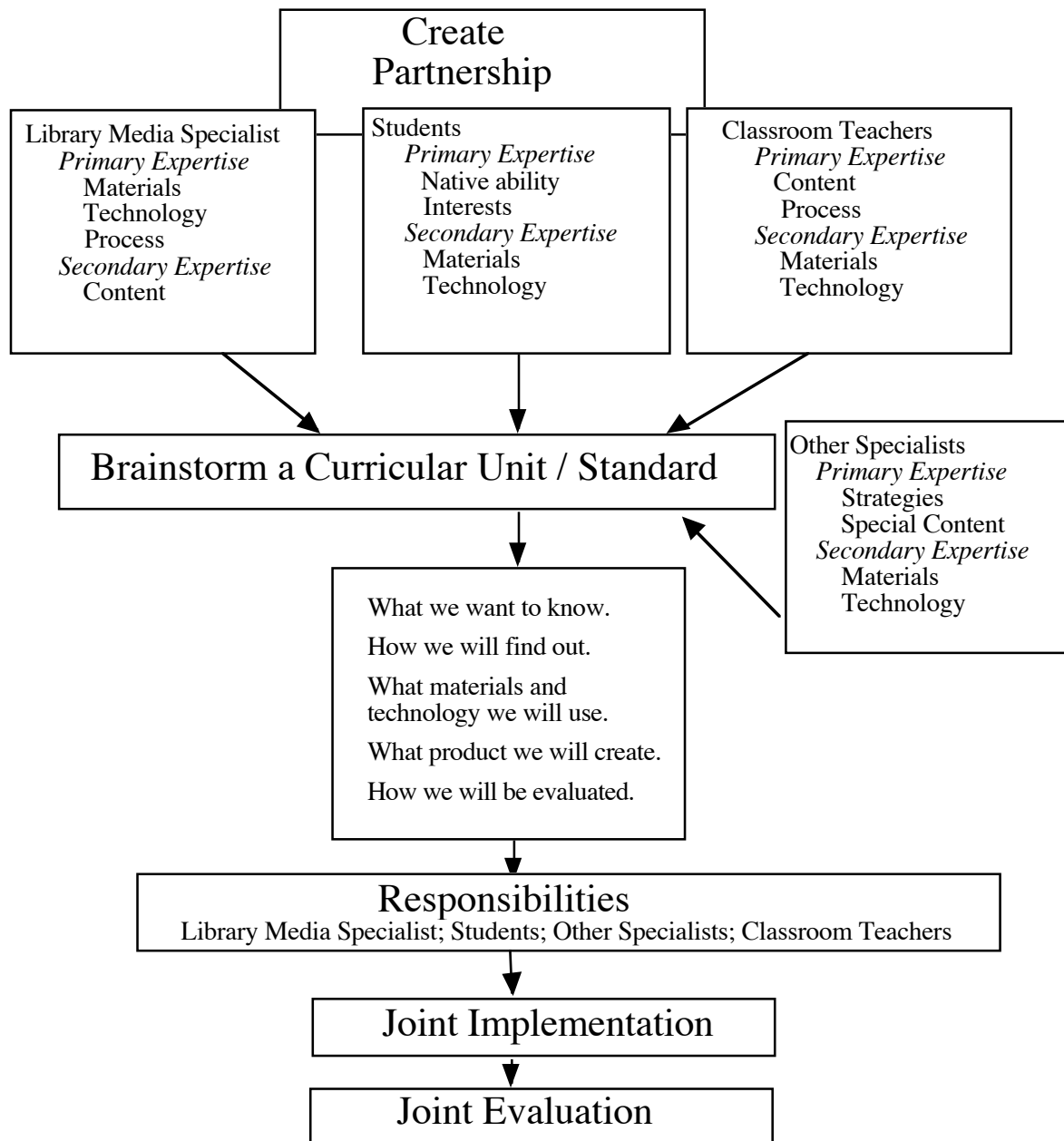
The bottom line:
When two professionals are delivering a quality learning experience, the odds of success are doubled.

Collaborative Planning (Traditional Method)



Adapted from California School Library Association. *From Library Skills to Information Literacy: A Handbook for the 21st Century*. 2nd ed. Hi Willow Research and Publishing, 1997, p. 35.

Collaborative Planning (Constructivist Method)



Adapted from California School Library Association. *From Library Skills to Information Literacy: A Handbook for the 21st Century*. 2nd ed. Hi Willow Research and Publishing, 1997, p. 36.

Collaborative Unit Planning Sheet

Teacher or team: _____

Library Media Specialist: _____

Content area: _____

Unit of Study: _____

Unit planning began (date): _____ Unit ended (date): _____

Goals and Objectives / essential questions of the Unit:

Proposed Learning Activities and Products:

State Academic Standard:

Information Literacy Skills:

Integrated Technologies:

Responsibilities: (for each, mark T= Teacher, LMS= Library Media Specialist; SP = Specialist; S = Student; A = All)

How Will We Assess Learning?

What Happened? (list activities as they occur)

Example: mini-lesson on how to judge currency of information (teacher and LMS taught)

Print p. 12 and 13 or 12 and 14 back to back and then attach additional sheets if needed.

Teacher/Library Media Specialist Evaluation of a Collaboratively Taught Unit

(TO BE FILLED IN AS A TEAM)

Unit title: _____
Total time spent by LMS: _____ # Students affected: _____

What worked well in the unit?

Suggestions for improvement:

(Time spent by LMS on info. Lit. Teaching: _____)
(as a subset of the total time listed above)

How well were state academic standards met?

Information literacy skills learned:

Technology impact:

From both the teacher's and library media specialist's points of view, was this unit enhanced through collaboration?

Yes No Why?

Was the unit successful enough to warrant doing it again in the future?

Yes No Why?

How well did the library collection support the unit objectives?

Scale: 5 = excellent; 4 = above average; 3 = average; 2 = below average; 1 = poor

- _____ Diversity of formats (books, multimedia, electronic?)
- _____ Recency (books and other materials up to date?)
- _____ Duplication (enough materials for the number of students taught?)
- _____ Reading/viewing/listening levels meet students' needs?
- _____ Average of above ratings

What materials/technology will we need if we are planning to repeat the unit again?(add a list)

This page could be the back of p. 12

Rating an Enhanced Learning Experience

Select a learning experience that both the teacher and library media specialist agree was an improvement over what would have happened had the unit remained in the classroom without the benefit of LMC resources and staff. Check characteristics that improved.

- Learners more motivated
- Two professionals helped
- Quality information used
- Learner's content knowledge improved
- Information literacy skills improved
- Technology well integrated
- Learners did lots of hard thinking
- Standards met
- Successful collaborative model
- Student products improved
- Memorable for learners
- Every learner improved
- Worthy of repeating
- Classroom/LMC facilities functioned well
- Technology (equipment, networks, etc.) worked as planned
- Enjoyable / Fun
- Learners learned more in the same amount of time

Enhanced Learning Experience
Unit title: _____
Dates taught: _____
Teacher/Library media specialist: _____

- Learners read a lot
- Critical thinking raised
- Special needs met
- Parents involved
- Worthy of publicity
- Learners more efficient
- Worth the time & effort

Other comments:

Improvements needed if taught again:

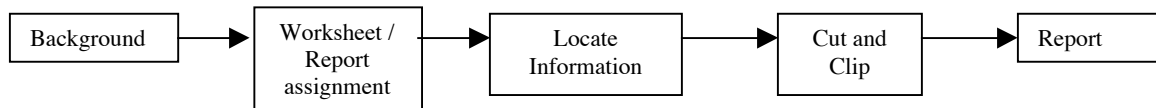
How well were state academic standards met?
Information literacy skills learned:
Technology Impact:

This page could be on the back of p. 12

Ban the “Bird” Units From the Library Media Center!

There are certain uses of the library media center that contribute little or nothing to learning. Administrators who recognize such low-level activities can encourage collaboration to raise the level of the activity.

What is a “bird” Unit?



A common pattern:

1. The teacher provides background to a topic in the classroom (could be birds, presidents, countries, states, people, etc.). Textbook work is done.
2. The teacher asks class to do a project in the library and provides a worksheet for data collection. The worksheet contains fact questions.
3. Students pick a “bird” to research and go to the library media center where the library media specialist introduces them to a few resources.
4. Students copy information from information sources onto their papers.
5. Students report back to the class.

Why is a “bird unit” generally a disaster?

When the emphasis of research work in the library media center is merely the cutting and clipping of information into some sort of report and then presenting those facts, little learning takes place. In the age of technology, students can easily cut and clip megabytes of information from the Internet or electronic sources and turn them in as a report. Obviously, time in the library media center is wasted and little progress toward educational achievement is made. In fact, assignments like these encourage plagiarism.

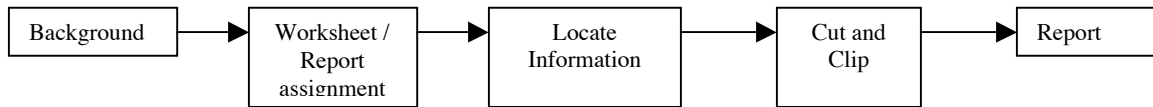
What is to be done?

1. Re-design the activities so learners must **THINK ABOUT** the information they collect in the library media center, thus increasing learning and achievement.
2. Re-design so that learners must **DO SOMETHING** with the information they collect such as sense-making, performing, trying out, acting, building, etc.
3. Keep redesigning until number one and number two happen.

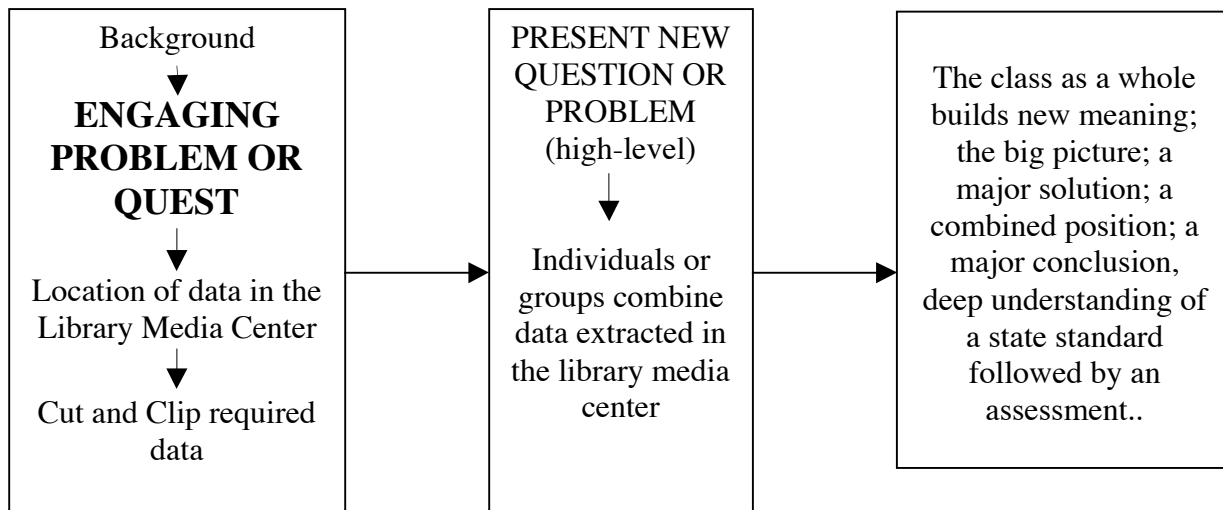
Building a Better Bird Unit

Generally, a small change in the structure of a unit plan can do wonders for learning. Here is one example to consider. Can your faculty and library media specialist create an even better one?

Old “bird” unit:



Better pattern:



In the above pattern, students are required to combine, manipulate, or rearrange the data they collect, causing them to think about what they have collected in order to solve the problem at hand. In other words, they fit the puzzle pieces they have collected into a puzzle to discover what the whole picture looks like.

The challenge for the adults is to construct the two questions or problems that cause higher-level learning to happen. And if the report time of the old unit is eliminated, the reconstructed unit should take about the same amount of time to teach.

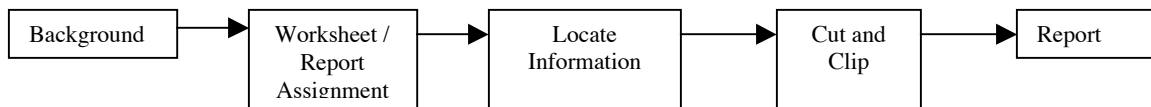
Challenge

Ask a teacher and the library media specialist to present the old and reconstructed unit pattern in a 3-minute presentation each faculty meeting spotlighting the increase in learning.

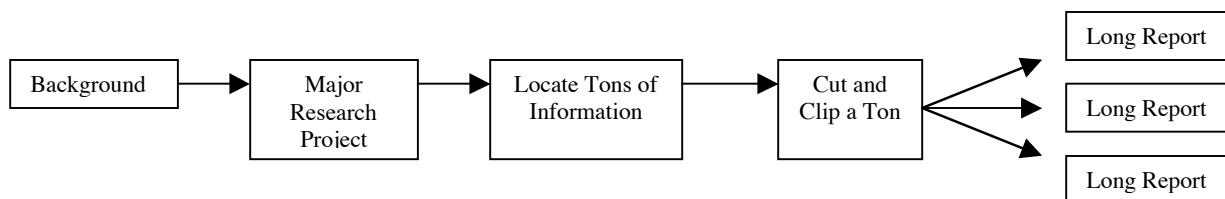
The Fat Bird Unit: Still a Ways to Go

One improvement on the old bird unit is to increase the amount and depth of research done in the library media center. Instead of a work sheet or short report, learners would do the “fat bird unit” by doing in-depth reports or term papers as pictured below.

Old “Bird” Unit:

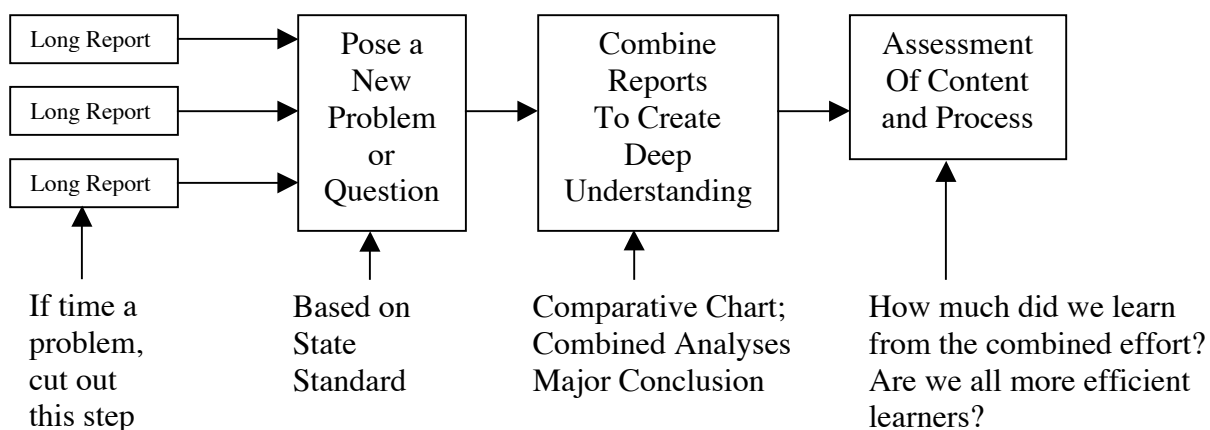


The Fat Bird Unit (one step up):



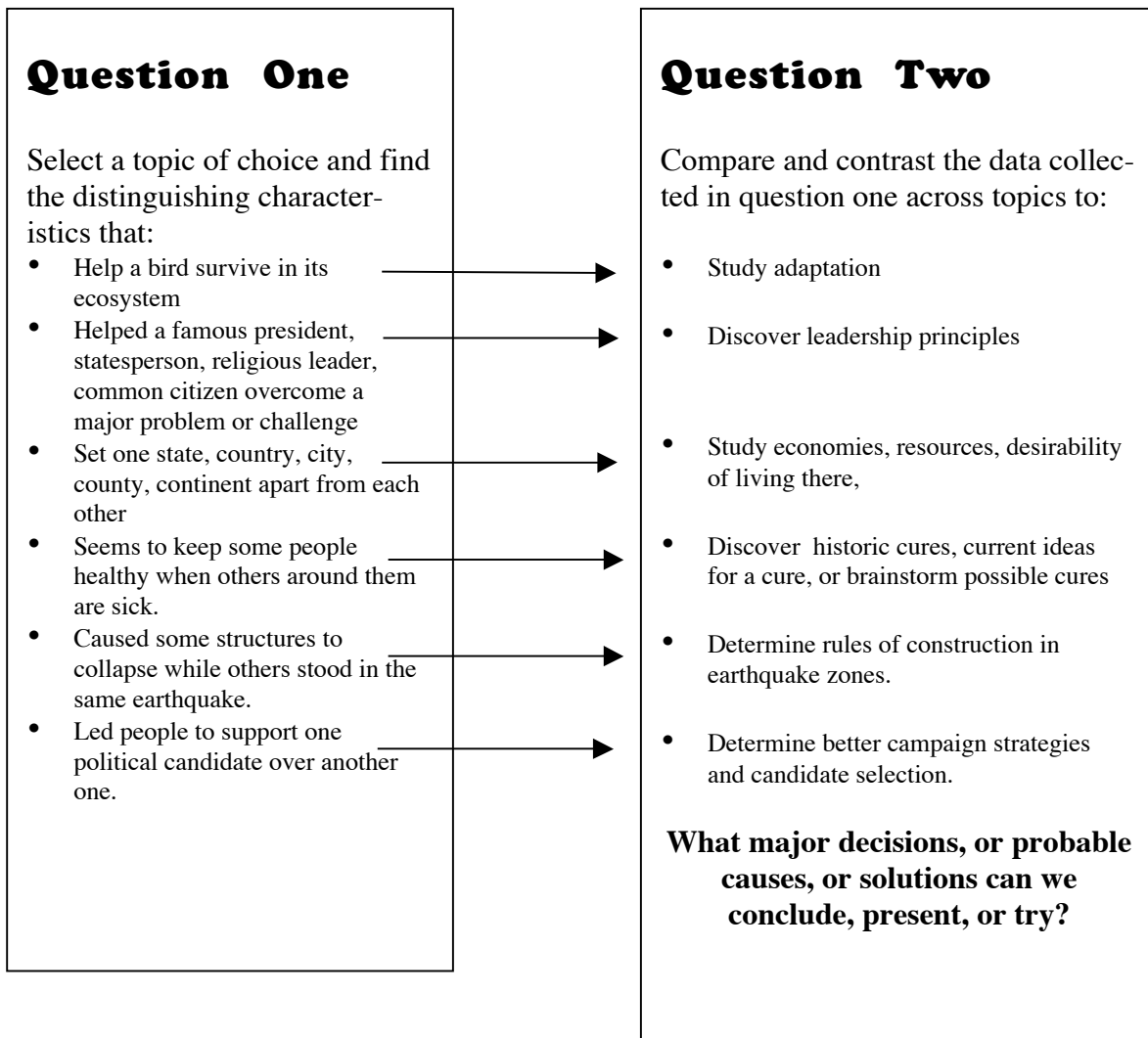
So what’s wrong with the fat bird unit? If students are serious about their major topics and research, they end up knowing a lot about one aspect of the original topic as a whole. Examples – a lot about robins, little about birds in general; a lot about Abraham Lincoln, little about presidents as a group; a lot about a favorite poet, little about poetry. In other words, they may know a great deal about one aspect about a state standard but not a deep understanding about the standard as a whole.

One solution: Create a Bird Banquet:



A Sample Better Bird Unit

Using the pattern on the previous page, here are a few possibilities to try.



Challenge
Could your faculty and library media specialist improve upon the ideas above?

How Collaborative Activities Can Be Recorded and Assessed?

Idea: Create a Collaboration Log.

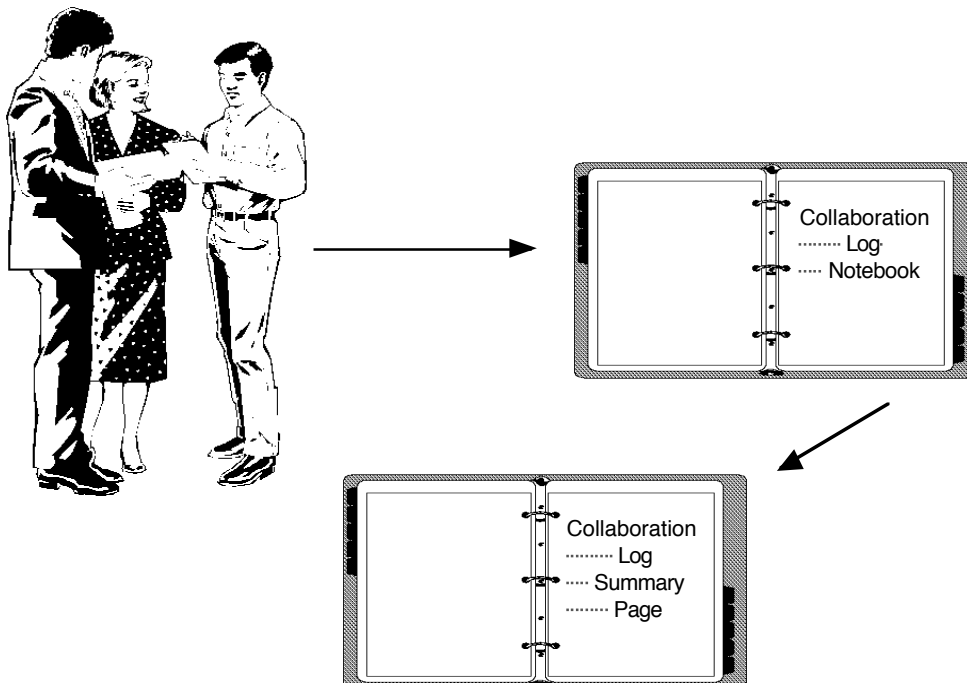
Who: The library media specialist and classroom teacher working as a team.

Activity: Each time there is a major collaborative learning experience jointly planned, executed, and evaluated by the library media specialist and classroom teachers, do the following:

- **File collaborative unit planning sheets** (p.12/13 or 12/14) in a three-ring notebook in some sensible fashion. Only fully developed collaborative activities should be recorded — not every interaction between the library media specialist and the teachers. An electronic record might be preferable.
- As the **first page** in the notebook, create a **collaboration log summary page** listing the collaborative activities. See the example on p. 20.

Principal's Activity: Using the summary sheet, assess the collaboration log notebook as a whole looking for patterns.

- Who is being served?
- Which grade levels?
- Which departments?
- Which curricular subjects?
- Who is not being served?



Sample Collaboration Log Summary Page

During the school year, the teachers and the library media specialist agree that the following units were successful collaborations, i.e., the learning was enhanced because the two partners exploited the resources and technology of the library.

<i>Social Studies</i>	<i>LMS Time</i>	<i>#Students</i>
<i>Our Local Elections - grade 6 (Smith)</i>	<i>2.6 hours</i>	<i>24</i>
<i>Family Trees - grades 3 and 4 (Albright and Faire)</i>	<i>3.6 hours</i>	<i>45</i>
<i>Reading</i>		
<i>Newbery Novel Unit - grades 5 & 6 (Crane & Finch)</i>	<i>1.5 hours</i>	<i>47</i>
<i>Science</i>		
<i>Environment of the School Grounds - entire school (Principal, LMS and Dwight, leaders)</i>	<i>15 hours</i>	<i>465</i>
<i>Simple Machines - grade 3 (Truett)</i>	<i>1.4 hours</i>	<i>27</i>
<i>Nutrition - grades 5 and 6 (Handford and Zigler)</i>	<i>2.8 hours</i>	<i>48</i>
<i>Integrated Units</i>		
<i>Local Environmental Hazards – social studies and science. gr. 4 (Todd and Lark)</i>	<i>4.5 hours</i>	<i>43</i>
<i>Labor Movements - ss and art, grade 6 (Jones and Gregg)</i>	<i>3.7 hours</i>	<i>49</i>
<i>Totals</i>	<i>35.1 hours</i>	<i>748</i>

Ideas:

- Create a summary chart similar to the one above that details collaborative units taught. Use a single sheet of paper for this summary page. This becomes the first page in the collaboration log.
- Create a graphic that summarizes the above list for use in the report.
- Enlarge the chart to poster size, use a transparency, or create a PowerPoint presentation when reporting collaborative efforts to the faculty, administration, and the community.

Note to administrators: How many collaborative activities were there? What is the dispersal of collaboration among the faculty, grade levels, and subjects taught? How could I as the instructional leader encourage more and better collaboration? Which of the collaborative activities deserve recognition from the community? How would I assess the effectiveness of increased student learning?

What's Your LMC Accessibility Score? Is Your Library Media Center Ready for Collaboration?

Access to information, information technologies, and library media facilities must not be a major barrier to teachers and students lest the collaborative process be squelched. Use the following checklist to measure whether the library media program is providing the flexible access students and teachers need in your school as the undergirding element of collaboration.

Library facilities:

- The library media center is not scheduled for weekly visits from any class, but all classes have multiple opportunities each week to send individuals, small groups, or large groups.
- Teachers might bring the class to the library media center every day during a project and at other times the entire class does not come for a few weeks.
- Library media center facilities are arranged in such a way that multiple groups and individuals may be working simultaneously without undue disturbance.

Classrooms:

- Classroom book collections are being rotated in and out of the central library media center collection to provide attractive and interesting titles.
- Classroom computers are connected to information data sources in the library media center.
- Video and electronic materials are available from the library media center for classroom use for short or long-term use.
- The classroom is connected to the Internet and to the library media center network.

Access to the library media center as an extension of the classroom (library media specialist attention not required):

- Individual students can be sent to the library media center at any time of the day for independent use and to obtain materials, equipment, or to use production facilities.
- Small groups can be sent to the library media center to use information and information technology.
- The teacher can take a large group to the library media center for independent use as facilities permit. There may be an adjoining classroom space to the library media center that allows free-flow.

Access to the library media center as an extension of the classroom (library media specialist attention required):

- The teacher assists students in getting on the library media center calendar so that the library media specialist can give the individual student undivided attention.
- Small groups are scheduled so that the library media specialist has time to work with the group.
- Large groups are scheduled so that both the classroom teacher and the library media specialist can work together as a team.

Accessibility Score:

_____ of items above, or _____% Accessibility (divide number checked by 13 and then multiply by 100)

Checklist for Administrators of Collaborative Planning Success

Classroom teacher/library media specialist collaboration does not happen automatically. A collaborative climate must be created by the school administrator. Lip service is only slightly better than benign neglect. In a recent unpublished study of New York City library programs, researchers measured collaborative library services and then rated three important elements: whether the entire faculty seemed united around a common education goal, whether the library media specialist had a vision of collaboration and knew how to implement it, and whether the principal had a vision of collaboration and stimulated its implementation. *Results showed that the principal was the key factor in collaborative success.* Even a super star of a library media specialist could not overcome the negative effects of a principal without a vision.

Principals might find the following checklist useful to help stimulate and promote collaboration and make the library program an integral part of teaching and learning:

Collaboration Checklist for the School Principal

- ❑ As the instructional leader of the school, participate as a team member of a collaboratively taught instructional unit at least once a semester.

Inservice the faculty on a regular basis concerning LMC and technology opportunities:

- At the beginning of each year
 - Through short courses
 - Mini announcements in faculty meetings
- ❑ Provide teachers and library media specialists time to plan.
 - ❑ If either the library media specialist or the teacher(s) find collaboration difficult, team with them for an actual planning session.
 - ❑ Provide incentives for collaboration to occur.
 - ❑ Use planning/evaluation forms and collaboration logs to monitor progress.

Evaluate the results of collaborative initiatives:

- Are collaborative efforts producing better learning?
 - Are collaborative efforts making better use of materials and technology?
- ❑ Spotlight the best collaborative activities to the community.
 - ❑ Look for progress in academic achievement in areas where collaboration is taking place.
 - ❑ Use the collaboration process as one mark of success on both the teachers' and library media specialist's annual evaluation.
 - ❑ Make sure that the library media specialists are on major governing councils and at curriculum meetings so they are included in curriculum decision making.

What Does Collaboration Cost?

The cost of collaboration does not reduce easily to a dollars-and-cents figure because it is so bound up in human relationships. Experiment with the following costing examples to see if any meaningful data are generated for your school.

Salary Costs: A library media specialist theoretically should spend the majority of time each day doing collaborative unit planning, execution, and evaluation. This could be costed out. For example, if a library media specialist spends 60% of the day on collaboration @ \$45,000 annually, the cost is \$27,000. Many library media specialists find it very difficult to spend this much time because of the weight of clerical and technical duties thrust upon them in the absence of classified personnel.

% _____ LMS estimate of the amount of time in a typical day devoted to collaboration
 x _____ Annual salary
 = _____ Estimated cost of the LMS's collaborative efforts

Salary Costs Based on Collaboration Logs:

If time and number of students affected are recorded on collaboration logs (see p. 28), it is possible to cost out the collaboration time of the library media specialist per student.

Total # of hours x wage per hour / # of students affected
 Example from p. 20: 35.1 hours x \$20 per hour = \$702 / 748 = \$0.94 per student

Administrator Time Cost to Promote Collaboration:

(Circle your estimated time rating to encourage collaboration)

- | | | | | | | | |
|--|----------|---|---|---|---|---|----------------|
| • Encouragement of the process | Low time | 1 | 2 | 3 | 4 | 5 | Time intensive |
| • Participation on collaboration teams to encourage joint planning | Low time | 1 | 2 | 3 | 4 | 5 | Time intensive |
| • Encouragement of a cooperative spirit | Low time | 1 | 2 | 3 | 4 | 5 | Time intensive |
| • Monitoring the process | Low time | 1 | 2 | 3 | 4 | 5 | Time intensive |
| • Building skill of the teachers and library media specialist | Low time | 1 | 2 | 3 | 4 | 5 | Time intensive |
| • Organizing school time schedules to provide joint planning time | Low time | 1 | 2 | 3 | 4 | 5 | Time intensive |
| • Assessing the outcome | Low time | 1 | 2 | 3 | 4 | 5 | Time intensive |

Because the investment in technology alone does not directly cause academic achievement to rise, what is the cost of the human investment to transform materials, equipment, and technology into meaningful learning activities?

Do Your Own Assessment: The Impact of Classroom Teacher/Library Media Specialist Collaboration

Methodology

- Gather baseline data on any or all the measures listed below.
- Implement a library media specialist/classroom teacher collaboration initiative.
- Measure the results.
- Use the results in #3 as baseline data to a second cycle.

First Research Question: Does the collaboration of library media specialists and classroom teachers to create learning experiences positively affect teaching and learning?

Possible Data Collection Points:

Quantitative:

%

- | | | |
|---|-------|---------|
| 1. Number and percentage of classroom teachers who collaboratively plan learning experiences with the library media specialist. | _____ | _____ % |
| 2. Number of disciplines affected by collaboration. | _____ | _____ % |
| 3. Number of grade levels affected by collaboration. | _____ | _____ % |
| 4. Number of students affected by collaboration. | _____ | _____ % |

Qualitative : (rate the following))

- | | | | | | | | |
|--|------|---|---|---|---|---|-----------|
| 5. The quality of the joint collaborative process. | Poor | 1 | 2 | 3 | 4 | 5 | Excellent |
| 6. The impact on school improvement goals. | Poor | 1 | 2 | 3 | 4 | 5 | Excellent |
| 7. The impact on school climate. | Poor | 1 | 2 | 3 | 4 | 5 | Excellent |
| 8. The impact on student learning experiences. | Poor | 1 | 2 | 3 | 4 | 5 | Excellent |

Administrative support elements enabling collaboration to happen:

- | | | | | | | | |
|---|--------|---|---|---|---|---|------|
| 9. Time for teachers and library media specialists to plan. | Little | 1 | 2 | 3 | 4 | 5 | Much |
| 10. Administrator participation in the collaborative process. | Little | 1 | 2 | 3 | 4 | 5 | Much |
| 11. Administrator encouragement to collaborate. | Little | 1 | 2 | 3 | 4 | 5 | Much |

Second Research Question: What is the academic achievement of students whose classroom teachers collaborate regularly with the library media specialist as compared with students of teachers who seldom or never collaborate?

Data Collection Points:

1. Divide teachers into two groups: collaborators and non-collaborators. Compare student scores on achievement tests between the two groups.
2. Divide teachers into three collaboration groups: low, medium, and high. Compare student scores.

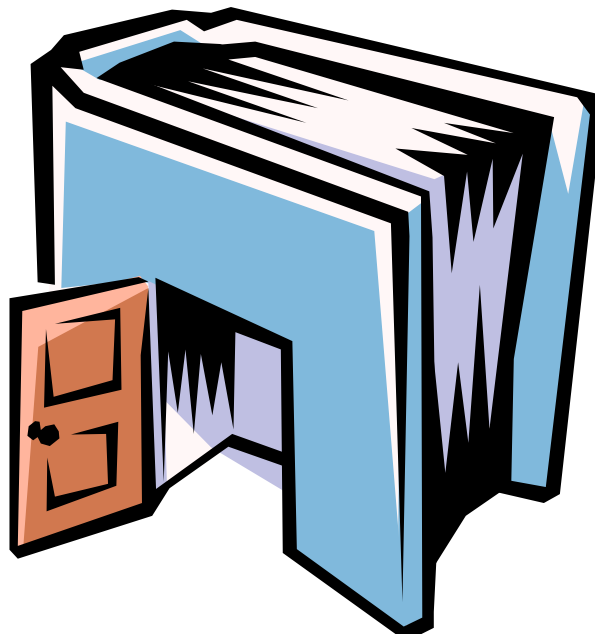
BUILDING AVID AND CAPABLE READERS

The Case for Readers in the Age of Technology

The necessity of building a strong reading program in an information world is more critical today than ever before. Systems such as the Internet do not discriminate by ethnicity or social status, but they do require excellent basic literacy skills; otherwise, another uncrossable gulf opens to divide the haves from the have-nots. Each young person needs to be literate as well as logged on! There is no substitute.

Literacy *is* a problem to throw money at, but we have to aim carefully by pouring money into library books and then making sure they get read.

—Stephen Krashen



Reading Research Linking Reading to Academic Achievement

Research completed by Ann E. Cunningham and Keith E. Stanovich, Stephen Krashen, and Jeff McQuillan plus the latest NAEP research from the U.S. federal government link the amount young people read with their scores on academic achievement. The message is clear:

For Everyone: Amount Counts! One hundred years of research supports the notion that free voluntary reading (the kind of reading you want to do, not have to do) — lots of it — is the best predictor of seven essential achievement basics:

**Comprehension, Spelling, Grammar, Vocabulary,
Writing Style, Verbal Fluency, General Knowledge**

For English Learners: Amount Counts! Research also demonstrates that the fastest way to get anyone—child, teenager, or adult—to learn English is to have them read a lot in English! (P.S.: this also works with anyone learning a foreign language.)

Reading vs. Television and Adult Conversation. Consider this: 1) Children’s books have 50 percent more rare words in them than adult prime-time television, and 2) Popular magazines have roughly three times as many opportunities for new word learning as prime-time television.

The Sources and Must Reads:

The Power of Reading by Stephen Krashen (Libraries Unlimited, 1993).¹

The Literacy Crisis by Jeff McQuillan (Heinemann, 1998).

“What Reading Does for the Mind” by Ann E. Cunningham and Keith E. Stanovich (*American Educator*, Spring/Summer, 1998, p. 1-8).

The Nation’s Reading Report Card: Fourth-Grade Reading 2000 by the National Center for Education Statistics, The Center, 2000 (Known popularly as the “NAEP Report”).²

NAEP Results 2000

Fourth graders in the United States do better academically when they:

- read more pages in school
- read more pages as homework
- have more books, magazines, newspapers, and encyclopedias in their homes
- report they read for fun every day
- discuss what they read

Do Your Own Preliminary Test: In any group of children or teenagers, ask those who consider themselves avid readers to identify themselves (they read regularly both in and out of school). Compare these students’ achievement scores with those who don’t consider themselves avid readers.

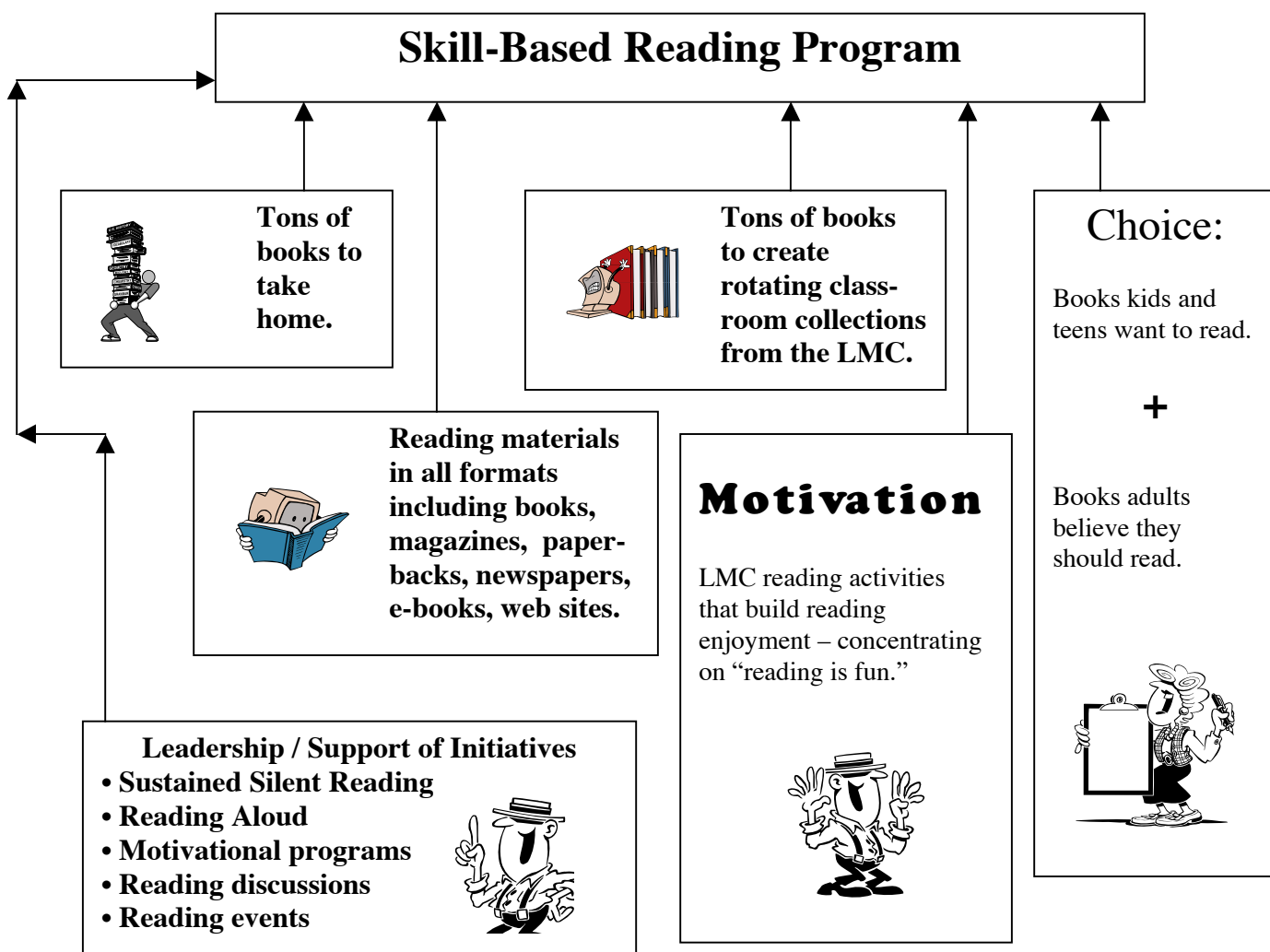
¹ Both Krashen and McQuillan books are available from Language Education Associates, PO Box 3141, Culver City, CA 90231; 800-200-8008; web address: <http://www.LanguageBooks.com>

² The NAEP report is available on the web at <http://nces.ed.gov/nationsreportcard/sitemap.asp> or by doing a web search for the “naep report 2000”

If We Believe the Reading Research, What Should the Library Media Center Provide to:

“Learn to Read”

If a school community really believes the research saying that “amount counts” then the library media center should have an extensive collection of reading materials young people want to read. So many school libraries in the nation have outdated, ragged, and uninteresting reading collections that young people ignore them. When reading collections are large, current, attractive, and easily accessible, good things happen. The best results of library media contributions to reading should be most noticeable when young people have few reading materials in their homes, and when they are in the lowest quartile of reading scores. Is your school library media center program providing the following:

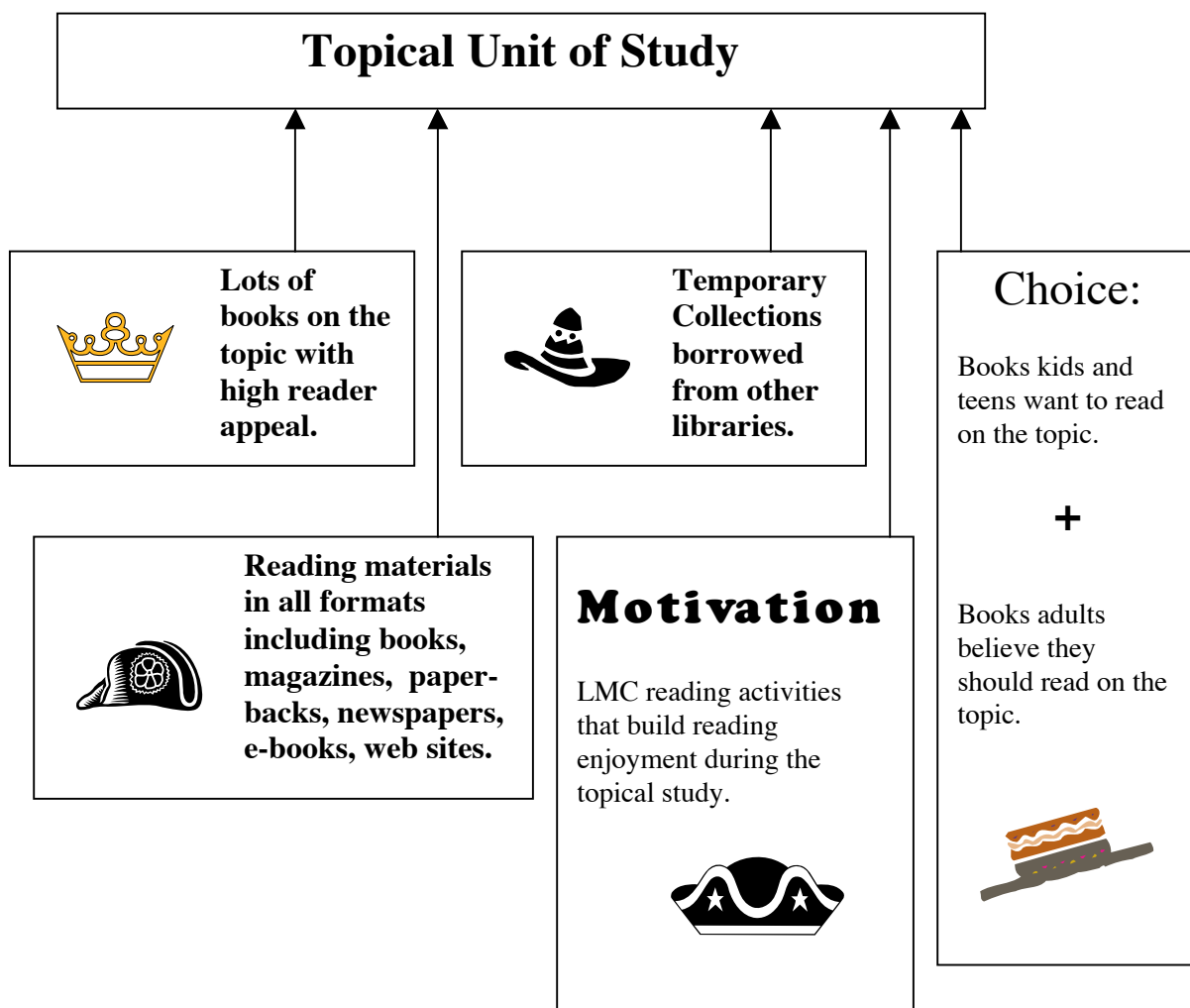


Bottom line: The LMC contribution to reading should plug the holes in whatever skill-based program exists toward the goal of 100% avid and capable readers. Does your school’s LMC reading program measure up?

If We Believe the Reading Research, What Should the Library Media Center Provide to:

“Read to Learn”

As skill in reading builds, the concentration of the reading program shifts to using reading as a tool to learn as well as reading for enjoyment. The library media program has much to contribute to all subject disciplines as content knowledge is expected to mushroom. This will be particularly true in middle schools and high schools where reading is integrated into the entire curriculum and into all departments.



Bottom line: The LMC contribution to reading in the topical areas should stimulate more expository reading and thus more in-depth knowledge and understanding. Does your school’s LMC reading program measure up?

Linking English/Language Arts Standards and Library Media Center Reading Programs

Many states have set out academic standards for the teaching of the language arts. These standards may not mention the word “library.” One presumes a strong library media program if the standards are to be implemented effectively. Together, library media specialists and teachers develop plans to strengthen the language arts program at all ability and grade levels.

- **Idea: Hold a Language Arts Summit**

- **Who:** Principal, reading specialists, teachers, library media specialists, community representatives, other guests as invited.

- **Engaging Problem:** How can the library and the language arts program complement each other to create a school-wide community of readers?

- **Worksheet:**

List of Major Language Arts Standards and Elements

How the Library Media Program Can Respond

List of the Major Library Media Center Reading Program Elements

How the Language Arts Program/Teachers Can Respond

- **Task:** Create a collaborative and integrated language arts/library media center program plan.

- **Resources:** What do we already have? What do we need? How will we get what we need?

Starter Sample of LMC/Language Arts Program Links

Substitute Your Standards and Ideas

Sample list of Major Language Arts Standards and Elements

Phonemic Awareness (1st grade, standard 1):
Students understand the basic features of words. They see letter patterns and know how to translate them into spoken language by using phonics. They apply this knowledge to achieve fluent (smooth and clear) oral and silent reading.

Comprehension and Analysis of Grade-Level-Appropriate Text (8th grade, standard 2):
Students read and understand grade-level-appropriate material. They describe and connect the essential ideas, arguments, and perspectives of the text by using their knowledge of text structure, organization, and purpose...

How the Library Media Program Can Respond

- In storytelling, reading aloud, the library media specialist selects stories where word sounds are a natural part of the whole.
 - Word and letter sounds are a fun part of storytime.
 - The library media specialist furnishes an ample supply of books where word sounds are a natural part of the literature.
 - Parent program exists to help on letter sounds.
-
- The library media specialist arranges for online databases and selected web sites to provide students the variety of information they need that matches their level.
 - The library media specialist teaches text structure as students encounter a variety of information sources.
 - The teacher and the library media specialist team as the learners interact with the information.

List of the Major Library Media Center Reading Program Elements

- The library media specialist notices that in social studies, many learners cannot understand the chapters in the textbook because they are too difficult or the learners do not speak English very well. The library contains a plethora of materials on the topic at hand.
-
- The library media specialist has acquired site licenses for word processing and outlining software to help learners both organize their thoughts and make the writing process more efficient.

How the Language Arts Program/Teachers Can Respond

- The teacher and the library media specialist work together to choose reading materials on many levels and provide the learners with a wide choice in what they should read on the topic.
 - Discussion and other activities done by the teacher and library media specialist insure that every learner has a deep understanding of the content knowledge.
-
- The teacher and the library media specialist team to teach the new tools including data collection and organization when a major writing project is due.

Note: Sample standards on this page come from Indiana Language Arts Standards.

Sample Problems/Sample Solutions of Library Media Center/Reading Integration

When library collections and classroom collections are two separate entities and both are weak.

Assure that classroom collections and library collections are seen as a single entity and that classroom collections are rotating from the library collection. Students may expect new materials at hand on a regular basis. Teachers and students should assist in selecting reading materials so that everyone, particularly readers, will win. Put students in the classroom in charge of seeing that the classroom collection contains both materials of interest and materials helpful to their studies. They can manage the collection and see that it rotates often. The position of room collection managers can rotate throughout the year and can assist the adults in the responsible use and responsible circulation of the materials to the home.

When the collection of the library is outdated, old, or worn out from use.

Every school should add a minimum of **one book per year per student**. Schools with small enrollments should double this number. Dreadfully outdated collections will require two books per student until the collection is attractive again.

When the students are checking out only one book a week from the library but it is just not enough to affect the reading scores.

Students should have many, many books checked out at any one time. In grades K-2, every student should be taking at least two books home each night—one to “read” and one to be “read to.” All students need to have the opportunity to have numerous titles checked out — as many as personal responsibility can allow. Revamp the entire policy to figure out how thousands of books a week can be circulated and reshelved from not only the library but also from every classroom. It will require many hands and some ingenuity, but it must happen.

When circulation policy and computer automation systems have locked out certain students who owe fines or have lost a book from ever checking out another book.

There are two issues here—responsibility and literacy. Literacy should win! It must! Book loss is the cost of doing business. Make a pact with parents to maximize reading and at the same time help their children shoulder the responsibility for public property. Students can pay service hours for fines and lost materials if the family cannot afford replacement costs. It is a crime to prevent a child from learning to read!

When in spite of all we do to promote reading, scores are not improving.

Do not be discouraged. Comprehension, spelling, grammar, vocabulary, and writing style will be affected substantially when young people read a lot. It is amount that counts! Check how much reading is *actually* taking place in the school day as opposed to finding a book, getting ready to read, filling out worksheets after reading, talking about reading, doing projects connected to reading, etc. One study found that during a typical hour-long reading time, students read only eight minutes. This would be particularly crucial in classes teaching English learners or teaching English speakers any foreign language.

When good books in the collection are just never getting read.

Visit a local bookstore for marketing ideas. Here are a few: Student-created book jackets and fresh plastic jackets, face-put display, booktalks, reading a forgotten book aloud, buddy book reevaluation, and brown bag book discussion lunches.

Bottom Line:

**The organization must serve the cause of literacy.
Don't let the tail (organizational rules) wag the dog.**

Checklist of Successful Practices for Reading When Supported by the Library Program

- Our reading program is based on the research of Cunningham & Stanovich, Krashen, and McQuillen (see p. 27).
- A sustained silent reading program in every classroom once a day, K-12.
- A program to read aloud to every student once a day, K-12. This includes storytelling as well as oral reading.
- A motivational program to encourage reading; challenges are preferable to contests.
- A program to involve parents in the total school reading initiative.
- A program to build a school-wide community of readers.
- Use technology assists to reading as long as those assists actually increase reading time and amount read (educational television, computer programs, computerized reading motivators).
- Celebrate reading regularly as milestones are reached.
- Create the sense that reading is fun! Cool! Something I enjoy!
- Other:

Reading Activities List – An Idea Smorgasbord

- Principal-sponsored reading motivational events with the library and faculty
- Book fairs
- Author visits; Internet, e-mail, or telephone author interviews
- Book clubs/book discussion groups
- Read-ins or pajama party reading sleepovers
- Year-long reading initiatives and celebrations
- Cooperative public school/public library summer reading programs
- Reading events connected to RIF, Book-It, or other community, state, or national events
- Reading aloud; storytelling sessions
- Writing your own book/ Writing a book to help others students
- Cross-age/cross-language reading buddies
- Movie or TV-Book tie-in activities
- Choral speaking

Signs of Danger to Reading When Not Supported Well by the Library Media Center Program

If *any* of the following describe or approximate what is going on in your school, red flags should be raised.

- Students would not list reading on any list of fun things to do. Reading is *not* cool.
- Book collections in the library media center are old, worn out, and unattractive.
- Budgets are so small that the number of new books purchased each year is insignificant.
- Books available don't match what children or teens would enjoy reading.
- Students only check out one or two books a week from the library media center.
- Classrooms contain few reading materials beyond textbooks.
- Classroom collections are small, outdated, too limited, or stagnant.
- Classroom collections and library media center collections are not connected and are funded separately.
- Reading aloud, particularly as students get older, is sporadic or non-existent.
- There is wide concern that high school students are not good readers, but there is no school-wide effort to do anything about it.
- Teachers of science, social studies, physical education, art, and math don't feel they have any responsibility to teach reading.
- Science, social studies, or other content areas require little or no reading beyond the few textbook paragraphs on a topic.
- No program of sustained silent reading exists in the school; or, it has been tried but has been considered a failure.
- Reading motivation "events" or programs are one-time or annual events of brief duration or non-existent.
- There are very few books in student's homes.
- Students do not have bed lamps or safe places to keep library media center books in the home.
- Parents, care givers, or siblings do not read aloud to younger students on a regular basis.
- Other:

Support of Reading Costs Money:

A Figure-It-Yourself Worksheet

What do books cost?

Hardbacks _____ Example: \$25.00

Paperbacks _____ \$7.00

Estimated average cost of an item
(80/20 ratio hardbacks to paperbacks) _____ \$21.40

(example: .8hb + .2pb = cost per book; .8x\$25 + .2x\$7 = \$21.40 per book)

How many books do you need to buy each year?

One book/year/student—to maintain attractiveness, size, and interest _____

Two books/student/year to *build* the collection when it is in poor shape _____

Compute your own new reading materials budget:

How much would it cost to maintain a collection so that the reading collection of the school is kept fresh, new, and desirable for a school year? _____

How much would it cost to steadily *build* a collection out of obscurity over 5 years? _____

What would one-time reinvention costs be to rejuvenate old/outdated collections? _____

Where might the money come from:

- School site funds
- Regular school district funds
- State special funds
- Federal funds
- Book fairs/sales
- Grants
- Gifts
- Student birthday books (parents and students sponsor one book/year)
- Corporate sponsorships
- Other

Do Your Own Assessment: The Impact of LMC/Reading Program Collaboration

Methodology

1. Gather baseline data on any or all the measures listed below.
2. Implement a library media specialist/classroom teacher collaboration initiative.
3. Measure the results.
4. Use the results in #3 as baseline data to a second cycle.

Research Question: Does a collaborative effort to promote reading by the library media specialist and the classroom teacher affect student literacy?

Possible Data Collection Points:

	#	%
1. Observation: The number of rooms that have a print-rich environment.	_____	_____
2. Survey: The number of students who agree the library contains books, magazines, and newspapers they want to read	_____	_____
3. Count: The number of popular reading materials available to students.	_____	_____
4. Count: The number of new popular reading materials purchased.	_____	_____
5. Count: The amount of money spent on new reading materials collection	_____	\$ for reading
6. Survey: Average amount of time per day students:		
a. Hear books read aloud/storytelling.	_____	# of minutes
b. Do sustained silent reading.	_____	# of minutes
c. Actually read during reading instruction.	_____	# of minutes
d. Have time to read in the library.	_____	# of minutes
7. Count: Number of books per week actually going home. (Count circulation from the library and the classrooms; estimates acceptable.) (Do a lengthy justification if less than 10.)	_____	# of circulations
8. Survey/interviews: Student attitudes toward reading. (% of students who rate reading 😊😐😞)	_____	% 😊
9. Count: Number and duration of reading related activities. (reading challenges, reading events, special programs)	_____	# of events
10. Compute: Scores on reading assessments:		
a. Whole school.	_____	Average
b. Teachers who participated actively	_____	Average
c. Teachers who did not participate or very little.	_____	Average
d. Students who report 20 min.+ of outside school reading/day	_____	Average.
e. Students who report less than 20 min. reading/day	_____	Average

What does all the data collected mean in terms of the impact on reading achievement?

ENHANCING LEARNING THROUGH TECHNOLOGY

Technology is not going away. It will change, evolve, adapt, ebb, and flow. The only question is how much we can force it to contribute to enhanced learning in education. Taxpayers have spent billions of dollars equipping the schools with the hope that a major return would be forthcoming. Results thus far are mixed, but the true impact can be judged in each teacher's classroom, the library media center, and the school.

Technology leaders in most schools worry about networks, capacity, hardware and software upgrades. Library media specialists worry about what's on the networks in terms of quality information. Together, both specialists are poised to partner with teachers in the effort to enhance learning. It's a win, win situation.

National Educational Technology Goals

1. All teachers and students will have modern computers in their classrooms;
2. Every classroom will be connected to the information superhighway;
3. All teachers in the nation will have the training and the support they need to help all students learn through computers and the information superhighway; and
4. Effective and engaging software and online resources will be an integral part of every school curriculum.

Library Media Center Role



Source: <http://www.ed.gov/technology>

Everyone a Skilled User of Technology

In a sea of technological devices, upgrades, and new software versions, the list of skills everyone needs has grown exponentially:

- Equipment operation and care
- Software and materials care
- Word processing, database construction, and spreadsheets
- Layout and graphic design for presentations and communication in print, video, and multimedia formats
- Internet and information system searching and use
- Adapting to new versions and upgrades of software and hardware

Few if any can claim expertise on all machines and information systems. Likewise, keeping a wide array of technologies operational requires a community of supportive and helpful users. Hence the critical compact between adults and students:

**You Teach Me,
I Teach You,
We Teach Each Other,
And, We All Help Keep It Working,
In a Safe and Nurturing Environment.**

Skills and Systems Checklist

- Acquire equipment and hardware able to withstand heavy use.
- Purchase software that is easy to use, teaches itself, and adapts to cross-platform operation.
- Provide training for both students and teachers in two modes:
 - Formal skill-based instruction
 - Just-in-time instruction (at the time of need)
- Many persons including students, teachers, parents, employees, and volunteers, can provide both skill-based instruction and just-in-time instruction.
- Instruction can take place in labs, classrooms, the library, and wherever there is a single piece of equipment.
- Students may carry “technology drivers’ licenses” as evidence of their facility with software and equipment and permission for independent use.
- Other:

Does Technology Enhance Learning? What the Research Says

Numerous organizations including the federal government have probed the state of technology in U.S. education and its impact. Some of the better reports were done by the Milken Educational Foundation.¹ However, this foundation changed its focus in 2000 and will not be issuing any more materials.

The federal government is currently doing a number of evaluative studies on educational technology that will be released in late 2001-2002.² They also publish a number of statistical studies detailing access to technology in the public schools.³

Many of the studies concentrate on availability and the uses of computer technology suggesting:

Access

- Access to computers in library media centers and classrooms continues to improve (although we know little about the age of those computers, their capabilities, and the state of software).**
- Access to the Internet both in library media centers, classrooms, and in the home continues to improve.**
- There is still a digital divide based on affluence and high minority concentration.**

Use

- Approximately half of the teachers report use of computers for classroom instruction.**
 - **Word processing**
 - **Spreadsheets**
 - **Internet research**
 - **Practicing drills**
- Teachers with better training use technology more.**

The question of whether computer technology is actually enhancing learning experiences, and thus, academic achievement is more elusive.

- Research done on school libraries and academic achievement seem to point to the idea that the closer quality information gets to the elbow of the student through the school networks, the better students do. (see p. 7)
- Whether technology makes a difference depends on how it is used by the teacher.

Technology seems to be a neutral element. A tool. Not an end in itself. Thus, the best suggestion is for each school to build a repertoire of excellence in enhancing learning through technology. (see p. 40).

¹ Check their web site at www.milkenexchange.org for numerous documents and research studies.

² See a list of their commissioned research at www.ed.gov/OFFICES/OUS/PES/edtech.html

³ The best way to keep up to date is to monitor the National Center for Education Statistics web site at <http://nces.ed.gov>. Their report: *Teachers' Tools for the 21st Century: A Report on Teachers' Use of Technology* was published in September, 2000 and was updated by the report *Internet Access in U.S. Public Schools and Classrooms: 1994-2000* published in May, 2001.

Building a Repertoire of Successful Strategies Using Information Technology to Enhance Learning

Many times, a simple set of flash cards is just as good as a \$3,000 machine — and more reliable. Technological sophistication is not automatically the answer. Theoretically, technology should help students learn more and more efficiently.

Numerous publications tout effective ways to enhance learning through technology. In reality, they are idea starters. Each teaching team, library media specialist, and student group should, through trial and error, test a variety of techniques and showcase the best. Emphasize technology-based projects where substance is more important than glitz; deep learning over surface learning. Consider the following strategies as a starter list:

Collaborative Data Collection and Analysis - Various student groups in the same school, in the community, state, nation, or internationally, collect data to solve an engaging problem.

Real Problems - Numerous technologies allow students to handle “real” data to solve real problems. The data can be historical, contemporary, or obtained instantly through sensing devices.

A Transparent Learning Tool - When technology is properly used, it often becomes transparent to the learning task at hand. It becomes a true learning tool, not an end in itself. Matching the appropriate technology to the learning task helps them ensure that transparent match.

The Novelty of Technology - Enduring a steady diet of the same teaching strategies is boring. The use of a new technology or a fresh approach to an older technology can stimulate interest both in the technology itself and also in the subject matter to be mastered. Implementing new teaching strategies matched to appropriate technologies keeps the learning fresh.

Capitalizing on Media Characteristics - Each different kind of technology has its own unique characteristics that can contribute to learning. Films have motion and color; books allow easy skimming and scanning; the Internet allows worldwide, almost instantaneous communication; or online databases often allow full-text searches; distance education allows participation from afar. When teachers and students use a particular medium for its strengths, concept delivery and understanding are likely to be enhanced.

Multiple Data Sources - The Internet, online databases, books, periodicals, video sources, and connections to other libraries help students experience a wide variety of information on the topic or question they are seeking. There is something for every student at every level.

Simulations – Simulations, including simulation gaming, provide a way to come close to reality without encountering the dangers, the impossibilities of traveling in time or space, the “what ifs,” or the risks.

Communication Beyond the School - The Internet, the amplified telephone, and e-mail allow students to communicate around the world, to other schools, experts, governments, agencies, libraries, museums, businesses and a host of other sources. This communication supports the learners as they explore ideas, concepts and important issues.

Background Building - Before students can deal intelligently with an engaging problem, they can build the needed background knowledge from a wide variety of media and technology sources in a relatively short period of time.

Efficient learners - Because of technology assists, students write more, produce better products, edit their work more carefully, use more information resources and integrate them into their work. Using the technology to gather as well as organize information and data helps the learner bring order and relevance to the subject matter.

Idea for Principals #1: Do a “Map Your Media Space” Activity With Students

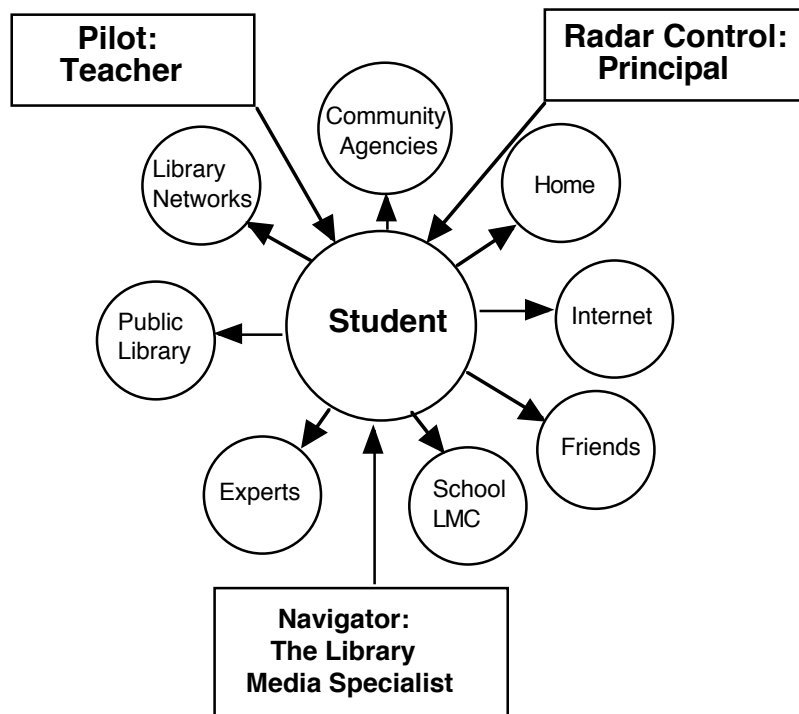
Researchers at Xerox coined the term *media space* as the “information environment connecting real and imaginary places, objects, and people within them.”¹ As schools become information and technology rich, students need help in discerning the multiple information sources to which they have access.

Principals can learn much about student perceptions of the information infrastructure created in a school by participating with the classroom teacher, the library media specialist, and the students as they map their media space.

Activity:

Near the beginning of an inquiry, just after students have formulated their inquiry or question, hold a brainstorming session with students, the classroom teacher, and the library media specialist. During the session, explore with the students the various possible information sources that might be of use to them during their inquiry. Their knowledge or ignorance of the information infrastructure of the school and on into the community and beyond will give clues as to their sophistication level.

A possible media space map might look something like this:



¹ Von Wodtke, Mark. *Mind Over Media: Creative Thinking Skills for Electronic Media*. New York: McGraw-Hill, 1993, p. 21.

Idea for Principals #2: Create a Technology Rubric With Students

When learners participate in creating both the expectations and the assessment for learning experiences, they are much more likely to perform in a desirable direction. This is particularly true when a wide variety of technologies are being used to assist students in their learning.

Principals who are asked to justify major expenditures for technology can get a great deal of insight if, at least once a semester, they participate in the learning activity involving technology. Here's how it could work:

1. At the point when students have gained an understanding of a project or a problem they will be solving, the principal, teacher(s), and the library media specialist consult with students to create a piece of a rubric that will deal with the use of technology.
2. Present the notion that technology assists should help in the learning process and that both the technology and the student will be held accountable as the project progresses and is finally assessed.
3. Build a piece of a rubric together that will measure this one notion—whether the use of a technology enhanced both the process and the product of the inquiry or project.

Sample rubric statements:

1. I chose an appropriate technology for a project.
2. I have demonstrated my skill using the technology.
3. The technology is used to make the message come across.
4. The content of the product is more important than the technology.
5. The content is well organized.
6. The content is presented well.

Hint to Principals: Monitor the project as it progresses whenever your schedule permits. At the conclusion of the project, examine how students were assessed on the rubric. Hold a discussion with the learners on what happened and how technology could be used in a future project to improve their learning. Finally, hold a discussion with teachers and the library media specialist about the positives and the negatives. Create future directions. (See Idea #3.)

Idea for Principals #3:

Do an AAR on Technology With Students

What is an AAR?

AARs or After Activities Review is a common technique in the military to determine “how things went” with leaders and soldiers — everyone involved in a training exercise.

Who Would Conduct the AAR?

The principal with the library media specialist, classroom teachers involved, and the students themselves.

When to Conduct an AAR

- After a learning activity where technology was used heavily as a major learning tool.
- After the grades are in. (Students should feel free to speak up.)

Major Questions of an AAR

- How well did a certain technology help you as a learner?
- What information sources seemed to help you the most?
- What problems did you encounter with either a technology or an information source?
- What could we do to make sure that technology and information sources serve us better in our next projects?
- Did the technology really help you learn?
- How could students help? Leaders help?

How to Conduct an AAR

- Make up your own AAR review sheet listing questions you want to ask and technologies and information sources your school implements.

Sophistication of the AAR

Tailor the AAR to the maturation level and student experience using technology.

What to Do After an AAR

Meet with the teachers and the library media specialists to plan any changes in program.

Technologies Used Checklist

- Library media center catalogs
- Stand-alone computer stations
- Internet terminals
- E-mail systems
- Word processing/publishing stations
- Video production equipment
- Audio production equipment
- Multimedia production stations
- Facilities for use of technology
- Library facilities access

Types of Information Sources Accessed

- Books (fiction or nonfiction)
- Books (Reference)
- Magazines (printed)
- Magazines (electronic)
- Newspapers (printed)
- Newspapers (electronic)
- Online databases
- Computer tutorials
- Simulation games
- Internet information sources
- Museums or field trip sites
- Visiting experts
- Other libraries

Possible Problems Encountered

- Accessibility
- Inoperative systems
- Lack of training on a system
- Lack of assistance during use
- Breakdown of group process
- Too little time to work on technology

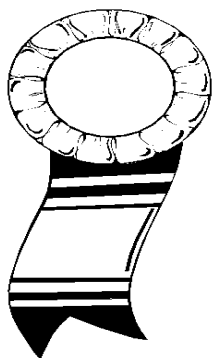
Bottom Line Questions

- What is the sophistication level of the students in their use of technology?
- Is the use of technology really enhancing the learning experience?

Idea for Principals #4: Hold a “Learning Through Technology Fair”

Who Leads: Principal, library media specialist, selected teachers

Activity: Somewhat like a science fair. Individuals, small groups, large groups exhibit projects and inquiries for the school, the community, or the school board. Parent or board judges are trained 30 minutes before the fair how to evaluate enhanced learning through technology and are given a tray of 6 different colored tokens. Using the rubric card (sample below), each judge can give one token for each statement on the rubric that seems to be true about the project being judged. Judging can go on while parents or other students are circulating around the fair or before the fair is open to the public. Prizes can be awarded for every project that receives a certain number or certain color of tokens. Recognition should be widespread rather than for a chosen few.



Learning Through Technology Rating

- Q** - Thoughtful **Quest/Question**
- U** - **Used** multiple information resources
- E** - Used **Excellent** sources only
- S** - Can **Summarize** well what's learned
- T** - **Technology** used well
- !** - **Wow!** They learned a great deal!

Judging criteria elaborated:

Q - The students can verbalize their **Question** or **Quest**. The question seems a significant one for the students, and they were interested in the topic from the beginning.

U - The students should be able to report what information sources they **Used** and should show some ingenuity in locating their sources with the assistance of their teachers and the library media specialist.

E - The students should be able to report not only a wide variety of sources consulted but how they sorted through those sources to use only those that were **Excellent**. This should demonstrate their critical thinking.

S - The students should be able to **Summarize** clearly how and what conclusions they arrived at in their quest.

T - The students should be able to explain how they used **Technology** to assist them in their project and its presentation. They should have gained some skill using that technology as they worked with it.

! - **Wow!** They learned a great deal! is just what it says. As a judge, you are very impressed with what the students learned.

Idea for Principals #5: Plan a “Just in Time” Professional Development for Teachers

Problem: Teachers may have been “inserviced to death” in a particular technology yet when it comes time to actually use that technology in their teaching they have forgotten much of what they learned.

Solution: Plan a “just in time” brief professional development immediately before teachers will use the skills learned in their classroom. It could introduce a new skill or be a refresher mini-class.

Who leads: The principal, library media specialist, and/or selected teachers/consultants.

Goal: To introduce or review during the planning phase of a unit, a technology skill needed to enhance the learning of that unit.

Activity:

- Identify the skill to be taught and integrated into a learning unit.
- Establish the time needed to teach that skill to teachers.
- Calendar the mini-class.
- Select the teachers.
- Plan the activities.
 - Make sure that the tool skill can be mastered.
 - Focus on the skill as one to enhance learning.
- Conduct the mini-session.
- Assess the results after the unit is over.
 - Did the teachers feel comfortable and skilled?
 - Did the technology make a contribution to learning?

Was this form of professional development worth the time and effort compared to full-scale workshops?

Integrating Information Technology into the School as a Whole

When information technology is integrated into the total school community, what might an observer notice by touring the school, the library media center, sports facilities, or special areas of the school?

Student behaviors:

- Students are interested/engaged in learning projects using technological devices and print resources.
- Students are using technology purposefully rather than as recreation.
- Students who are usually disinterested in schooling are engaged.
- Students are pursuing their own interests as a part of learning activities as opposed to pursuing only topics teachers demand.
- Because students are handling multiple data sources, they seem naturally headed in the direction of a problem-solving mode of learning.
- Students seem to be at ease using a variety of presentation technologies.
- Other:

Facilities:

- Students can find whatever technologies they need in a variety of locations throughout the school and are able to get their work accomplished without long waits in line.
- Configurations of technology allow for simultaneous use of technology by individual students, small groups, and large groups.
- Students report that, for the most part, the technologies they need are working almost all of the time.
- Print and computer technologies are integrated into library media centers and classrooms.
- Technology is available to students before and after school, and at noon, in addition to the regular school hours.
- Other:

Adults:

- Teachers and library media specialists obviously have buy-in to a technology-rich environment and feel comfortable teaching in that environment.
- Teachers and library media specialists are in the coaching stance rather than being the principal mechanism for information delivery.
- Other:

Danger Signs Checklist When Technology Not Supported Well by the Library Media Center Program

Students:

- Students regularly use technology for playing games/hacking/surfing.
- Student use technology to glamorize projects, but there is little substance.
- Students merely cut and paste information together for projects—learning very little.
- Time spent working on a project is so technology-dominated, there is almost no time to learn content.
- Students are careless and destructive with equipment, software, and lack respect for other students' work.
- Other:

Teachers:

- Teachers seem afraid and helpless in the face of technology.
- Teachers know how to use technology, but don't.
- Technology is so outdated that students' equipment at home is superior to what's at school.
- Software upgrades won't work on existing equipment.
- Other:

Technology:

- The failure rate (equipment, software, networks, and the Internet) is so high that teachers and students will not risk the time investment.
- No one person is responsible to see that the equipment, networks, and software are in good repair and operational.
- There is no technology plan in actual operation, or, it is ignored.
- Other:

What Does Information Technology Cost? A Figure-It-Yourself Worksheet

- How much does it really cost to provide a student with high-tech access?

Assume that it would cost a school district the same amount to link a student to the Internet as it does at home through a commercial company. A conservative estimate might be \$20 per month.

\$20/month x 9 months = \$180 per student

Total technology budget for your school using this figure _____

- **How does this figure compare to the total cost of providing information/technology for each student in your school (excluding salaries)?**
 - Textbooks
 - Library media center costs for all materials and information sources
 - Technology equipment and network connections

Total current budget for your school _____

- **Realistically, how much does information technology cost over time not only to install, but to maintain, upgrade, and replace?** (Schools and school districts have been experimenting with these figures for over a decade. The question is whether schools can build high quality information systems any cheaper than private industry can. The second question is: Should each learner be provided with high quality support?)

• **Sources for funding:**

- School site funds
- Regular school district funds
- State special funds
- Federal funds
- Book fairs/sales
- Grants
- Gifts
- Corporate sponsorships
- Other:

Are we keeping pace with budgets at the building level?

5 yrs. Ago		Today
_____	Library Media Center Budget	_____
Check what was included in the library media center budget		
5 yrs. Ago		Today
_____	Books and printed materials	_____
_____	Site licenses for information technology	_____
_____	Computer software and upgrades	_____
_____	Printer and copier toner supplies	_____
_____	Internet and telecommunication costs	_____
_____	Projection devices	_____
_____	Equipment maintenance	_____

Do Your Own Assessment: The Impact of Information Technology on Learning

We should see improvement in academic achievement when technologies of all types are used to advantage in the educational process. It is difficult to parcel out exactly how much learning is attributable to technology, but an informed judgment must be made. This page suggests a few areas that might be studied to reveal some major clues.

Skilled Users of Technology:

- The number of students receiving skill-based instruction _____ %
- The number of students receiving just-in-time instruction _____ %

Repertoire of Successful Strategies Using Information Technology to Enhance Learning

(from p. 40) (check the box that most clearly describes your situation or create your own best description:)

- A small repertoire and of insignificant quality
- A small repertoire but of high quality
- A steadily growing repertoire — the quality could improve
- A steadily growing repertoire — the quality is excellent
- A rich repertoire — the quality could improve
- A rich repertoire — the quality is excellent

Or, How would you describe the repertoire of successful strategies using information technology to enhance learning?

From your involvement as principal in using any of the ideas on pages 41-45 or other pages, rate how much of an impact technology is having on enhanced learning experiences in the school.

Little impact 1 2 3 4 5 A great deal of impact

Conclusions drawn:

CREATING AN INFORMATION LITERATE LEARNER

Definition:

Information literacy has been defined in a variety of ways, and while some details vary, the central substance has not.

Information Power, the major standards document of the school library field, defines information literacy as the effective users of ideas and information.¹ Another popular definition is “the ability to access, evaluate, and use information from a variety of sources.”² A review of the research on information literacy looks at many models and their application with children and teenagers.³

For this publication, the information literate student possesses five qualities of mind and skill:

An Organized Investigator
A Critical Thinker
A Creative Thinker
An Effective Communicator
A Responsible Information User

One of the major agendas of the school library media profession is to assist students as they are introduced to an information rich environment and provide them with the research skills they need to survive. Library media specialists are interested in a certain quality of mind, a broadened capacity of information handling, an internalized model of personal research, and an ability to be a good citizen in the information world.

Library media specialists also know that the best way to teach the research process is to collaborate with teachers and teach the process “just in time” when learners must do projects assigned in the classroom.

Because information literacy is a newer, but key concept in education, the balance of this section covers this concept in more depth.

¹ American Association of School Librarians and Association for Educational Communications and Technology. *Information Power: Building Partnerships for Learning*. Chicago: American Library Association, 1998.

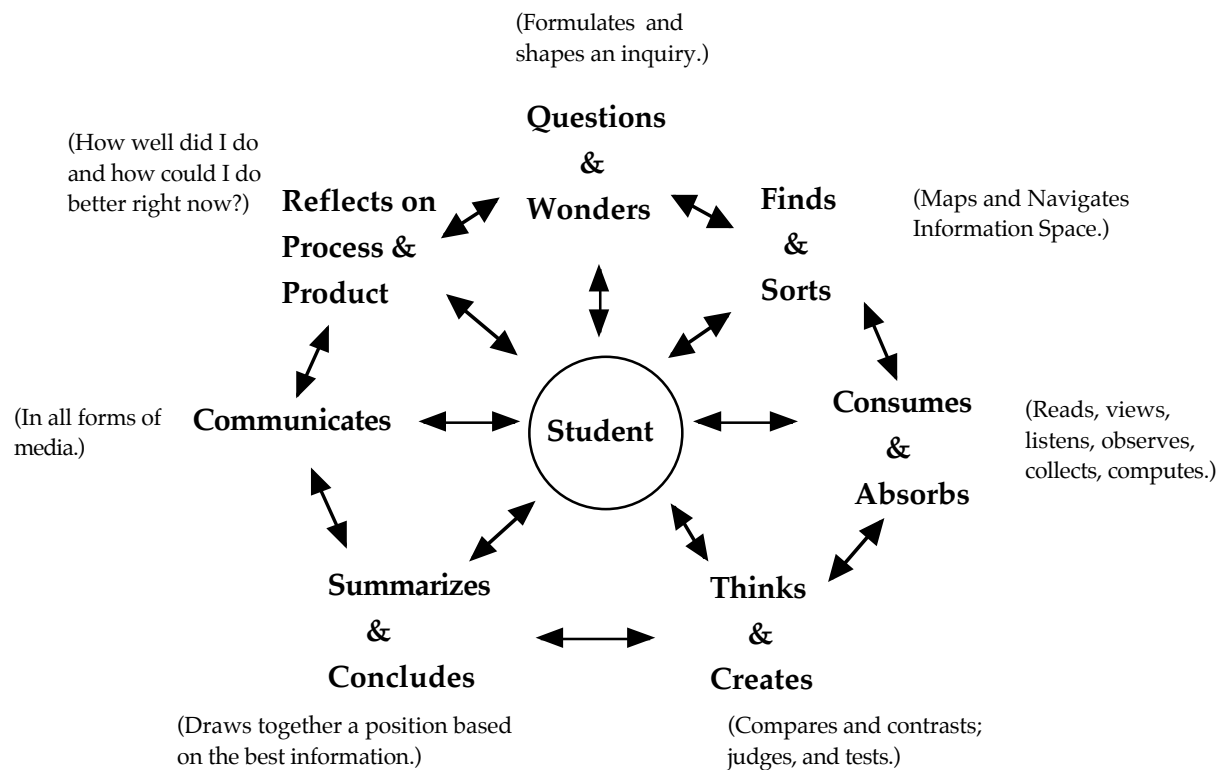
² Doyle, Christina S. *Information Literacy in an Information Society: A Concept for the Information Age*. ERIC Clearinghouse on Information and Technology, June 1994.

³ Loertscher, David V. and Blanche Woolls. *Information Literacy: A Review of the Research*. 2nd ed. Hi Willow Research and Publishing, 2002.
✳ *Reinvent Your School's Library in the Age of Technology*; 2nd ed. © 2002; 800-873-3043 ✳

An Organized Investigator

Traditionally, students have done little “research” or investigation until high school. However, the advent of constructivist principles plus the advent of rich information environments allows all students the opportunity to develop investigative strategies and become problem solvers.

Beginning inquirers need some guidance in developing a process for doing research. Each student can be introduced to a research process model adopted by the faculty for the school. Popular models include the Eisenberg & Berkowitz Big Six Skills, the I-Search Process created by K. Macronie, *Information Power* (1998 ed), and the California School Library Association Information Literacy Model.¹ A sample information literacy model is presented below.



After several research experiences using a research model, students can then develop their own model to match their individual learning style. The library media specialist should have numerous examples of research process models available for consideration by the faculty and can take the lead in teaching this concept to the faculty as a whole. A wonderful activity with faculty is to present them with numerous information literacy models and then challenge them to develop their own. This gives them not only a sense of their own investigative style, but also a much clearer notion of what information literacy is and how it can be used in the classroom.

¹ One of the best sources for information literacy guidance is: *From Library Skills to Information Literacy*, 2nd ed. (1997), authored by the California School Library Association and available from LMC Source, P.O. Box 720400; San Jose, CA 95172-0400; 800-873-3043; sales@lamcsources.com. See also *Information Power*, 1998 ed. published by the American Library Association.

How to Help Students Become Organized Investigators

Children and young adults at any age can begin learning the techniques of conducting inquiries and solving the problems they meet. Rather than concentrate on a scope and sequence chart with rigid requirements at the various grade levels, adults can recognize student sophistication levels. Students may be beginners, intermediates or sophisticated information literates no matter the age, gender, cultural background, or principal language spoken. It is not difficult to recognize the difference in sophistication.



Beginners

- Frazzled
- Lost
- Can't pick a topic for research
- Can't find information
- Desperately needs help
- Needs help constantly
- Distracted
- Uninterested



Intermediate

- Self-starting
- Still a roller-coaster experience
- Needs support
- Has moments of insight
- Interested
- Somewhat systematic
- Will take advice



Advanced

- Independent learner
- Knows where to go and how to get there
- Asks advice to monitor progress

Instead of regimenting the teaching of investigative strategies, the classroom teacher and the library media specialist might try the following with a whole group, small groups, or individual learners:

- Teach a research model as a whole several times at varying intervals. Students will proceed through a problem in a step-by-step fashion and discuss each step as the investigation proceeds and is completed.
- After a research project or inquiry, reflect on the model students have used. At an appropriate time, have students create their own information literacy model. Models will vary since learning styles vary.
- Teach students that real research is generally a very messy process—there are many false starts, problems encountered, progress, backtracking, and enough hassles to require a great deal of patience and hard work.
- Have students test their own model on a second project. Refine.
- When students complete a project, assign a grade for both the process and the product. Students should know in advance, via a rubric, that both the process and the product will be assessed.

A Critical Thinker

Numerous educators have been interested in the idea of critical thinking in the past decade. Indeed, there is a major body of literature on the topic. Library media specialists see critical thinking as one of the major components of the information literate person. But instead of advocating an add-on to the curriculum—a new scope and sequence or curriculum to be taught—critical thinking is best integrated into the subjects and projects at hand.

Teachers and library media specialists should teach critical thinking strategies as projects, lessons, and information use occur. The objective is to create neither students who are sponges (believing everything they read, view, and hear), nor skeptics (believing nothing they read, view, and hear), but healthy skeptics (using evidence and authoritative sources to judge believability).

CRITICAL THINKING CONTINUUM

Sponges - - - - - Healthy Skeptics - - - - - Cynics

One of the major challenges, for example, is to educate students to evaluate information they find on the Internet. Principals might use the following checklist as they question students on how they evaluate a good web site for inclusion in their project information base.

Evaluative Questions for Judging a Quality Web Site

(could be used for most information sources)

How do you know or how did you judge whether:

- The source is/was authoritative.
- The information is/was current.
- The information can be/was judged as fact or opinion.
- The information is/was accurate.
- The information is/was easily understood and is/was useful.
- The information needed is/was easily and rapidly located.
- The site requires/required no personal information to be given.

As students proceed through a learning experience, teachers and library media specialists should constantly probe their critical skills by asking good probing questions. A second method is to give quick mini-lessons at a moment when students are going to have to make numerous judgments. As principal, ask classroom teachers and library media specialists how they are integrating critical thinking into their collaborative activities.

A Creative Thinker

Learning is often so regimented with students receiving points for molding projects to exact specifications that creativity is penalized. Recognizing and rewarding creative thinking even when the student might act like Jim Carey or Robin Williams is a major challenge. Is it being encouraged in your school and in the library media center? Consider the definition of creativity at the right¹ and an advertising poem used by AppleComputer.²

To the Crazy Ones
Here's to the crazy ones.
The misfits.
The rebels.
The troublemakers.
The round pegs in the square holes.
The ones who see things differently.

They're not fond of rules.
And they have no respect for the status quo.

You can praise them, disagree with them, quote them,
disbelieve them, glorify them or vilify them.
About the only thing you can't do is ignore them.

Because they change things.
They invent. They imagine. They heal.
They explore. They create. They inspire.
They push the human race forward.

Maybe they have to be crazy.
How else can you stare at an empty canvas and see a work of art?
Or sit in silence and hear a song that's never been written?
Or gaze at a red planet and see a laboratory on wheels?

We make tools for these kinds of people.
Because while some see them as the crazy ones, we see genius.

And it's the people who are crazy enough to think they can change the world,
who actually do.

Think different.

c. 1997. Apple Computer Inc.

The Creative Process

First Insight

↓

Saturation

↓

Incubation

↓

— Ah-Ha! —

↓

Verification

¹ The creative process is Getzel/Kneller's description in von Wodtke, Mark. *Mind Over Media: Creative Thinking Skills for Electronic Media*. New York: McGraw-Hill, 1993, p. 115.

² © 1997, Apple Computer, Inc. Used by permission.

An Effective Communicator

Students should be able to express themselves and communicate their findings successfully in a wide variety of media including:

- Written reports
- Term papers
- Web sites
- Multimedia presentations
- Video presentations
- Graphic charts, diagrams, transparencies, Power Point presentations, etc.
- Real and constructed objects
- Reenactments, drama, oral presentations
- Portfolios

Student products not only should span the various types of media but should become increasingly sophisticated as experience with technology increases. Student products should be evaluated by some form of rubric. Here is a sample partial rubric:

My product:

- Reports clearly the question or quest.
- Reports the various information sources I used.
- Draws from excellent information sources.
- Reflects my thinking about the topic covered.
- Summarizes of what I have learned.
- Uses technology well.
- Is neat and organized.
- Is presented well.

Student products should be a part of exhibitions to parents, teachers, or might have utilitarian value for other students. Such events encourage students to demonstrate deep learning vs. surface learning—an expectation that encourages a behavior teachers would like to maximize.

For the most part, students should be taught how to communicate in the various media at the time when they need the skill. For example, they can be taught to use the digital camera before a field trip where they will be taking pictures to integrate into a multimedia presentation. In this case, a few students can be taught the skill, and they can be assigned the responsibility to train others—to “check them out” before handing over an expensive piece of equipment.

A Responsible Information User

When only a textbook, some note paper, and a few library reference books were available as the chief student information sources, the need to teach responsible information use was not a common part of education. Now, however, as the information pool deepens, students of all ages handle vast quantities of information resources. With the opportunity comes more responsibility. Consider the following checklist:

Information Responsibility Checklist

- ❑ Students should be ethical and responsible users of information and information networks.
- ❑ Students should respect other student's work on information systems and equipment as it develops.
- ❑ Students understand plagiarism and the cut and clip mentality, avoiding both.
- ❑ Our district has an AUP (acceptable use policy).
- ❑ The library media specialists of the district understand and implement the AUP.
- ❑ The teachers of the district understand and implement the AUP.
- ❑ The students of the district are taught the principles of the AUP.
- ❑ At least 80% of the students if questioned, would know what the AUP was, and would know that they are expected to follow it. They would also help those unfamiliar with the AUP to follow its guidelines as searching and retrieving of information on the Internet happens.
- ❑ Students might be required to carry a student information technology driver's license and post it in a prominent position on a computer or other equipment they are using. The statements on the driver's license should reflect the major points on the school's acceptable use policy. An example is shown below:

Student Information Technology Driver's License	
_____ Name	_____ School
<ul style="list-style-type: none"> ▪ I respect equipment, software, and materials and use them responsibly. ▪ I respect other students' work and networks. ▪ When I quote or copy others, I give credit. ▪ I realize that e-mail is public information. ▪ If I find something inappropriate, I exit immediately and report it. ▪ I don't give out my name or personal information over networks. ▪ I (and my parents) have signed my school's Acceptable Use Policy and I agree to abide by it. 	
<div style="text-align: right;">_____ Student Signature</div>	

The Battle Rages On!

Shall We Teach Content or Process?

What kind of young learner is best able to pass the achievement tests and meet the Academic Standards? Is it the young person who gorges on content: learning the facts, acting like a data sponge? Or is it the person who “knows how to learn” (the information literate), the process learner, the problem solver? Note the diagram below:

		Subject Understanding	
		Poor	Good
Information Literacy Skills	Good	Students know how to learn but are shallow in their subject knowledge.	Students are in the best position to learn.
	Poor	Students are in trouble.	Students soak up content but lack investigative skills.

Behaviorists are certain that subject understanding is paramount. On the other hand, constructivists insist that information literacy or knowing how to learn will equip students for the world in which they must compete. The solution of educating a person with both information literacy skills and subject understanding seems to be a sound course, yet many are not sure such a middle road is possible.

Drawing a library media specialist who understands this dilemma into the teacher’s planning cycle seems to be showing up in the major research dealing with library media centers and academic achievement. Perhaps a choice need not be made if the two creative professionals can integrate the two philosophies in a learning experience.

The Position of National Standards and Guidelines.

Both *Information Power* (American Library Association, 1998) and the *National Educational Technology Standards for Teachers* (ISTE, 2000) are decidedly in the constructivist camp. Both documents are stressing the teaching of process as the best way to expect information and information technology to impact learning.

Methods of Teaching Information Literacy

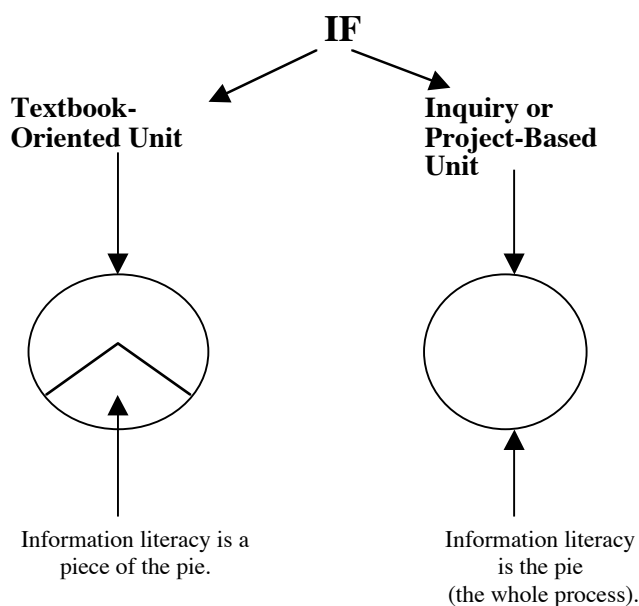
Library media specialists teaching information literacy have sometime succumbed to the temptation of teaching those skills as a course of instruction so that students would visit regularly for their “library lesson.”

Such an approach has been rejected as time consuming and inefficient. Rather, the professional literature recommends the integration of information literacy skills at the point when students will use them.

As the illustration at the top shows, sometimes this teaching will take place as a mini-lesson when students are assigned a project and come to the library media center to do research.

However, if the teacher is doing an inquiry unit or a major project, the information literacy teaching will form the scaffolding of the entire research process. There will be a number of information mini-lessons as the research progresses.

In either method, the illustration at the right shows how the two agendas are co-mingled to insure accountability for both educators.



Information Literacy Skills to be Taught	Unit Planning Form
<ul style="list-style-type: none"> • Building Questions • Finding Information • Absorbing Information • Thinking • Concluding • Communicating • Reflecting 	<ul style="list-style-type: none"> ➤ Academic Standard ➤ ... ➤ ...
<p>List the skills here for a certain grade level. Use as a checklist for integration. Over the year, all should be covered so that students are more sophisticated at the end of the year than they were at the beginning.</p>	<p>Print a favorite unit planning form here. It can be paper or electronic but the result is available to administrators.</p>

How Would I Recognize Information Literacy If I Saw It in Action?

If I walked by the library media center or briefly walked in for an observation, I might see at a cursory glance whether the library media center was full of students or empty, whether it was quiet or noisy, and whether the students were engaged. However, without a deeper probe, the significance of what was going on might well be elusive. The following observational checklist might help.

- The library media specialist/teacher planning session may be in progress.
- A class is doing research with both the teacher and the library media specialist assisting individuals or groups, or, they might be jointly teaching.
- Individual students or groups are obviously engaged in a research project and may not be “quiet.”
- Individuals, small groups, and whole classes might be doing research simultaneously with the library media specialists rotating around to several groups. The teacher would always be present when larger groups would be researching.

If a teacher were interviewed, signs that information literacy skills are being taught might include:

- A lesson plan would have information literacy skills included.
- The teacher would have had a planning session with the library media specialist in advance of the time in the library media center.
- The teacher would be aware of an information literacy model being taught to all students in the school.
- The teacher would understand what information literacy is, and that the library media program is taking the leadership in this activity.

If a student were interviewed, their knowledge about information literacy might include:

- Recognition of the term “information literacy”.
- Knowledge about a helpful process or a procedure of doing research.
- Knowledge about how the library media center and the technology of the school helps them in their learning projects.
- Recognition that both the teacher and the library media specialist guide them in the research process.
- Knowledge that they are getting more and more particular about the quality of information they are finding.
- Compliments for the information technology systems and their contribution to their education.

Costing a Program of Information Literacy

Teaching students to be information literate is a human-intensive activity, so it is automatically expensive. There are two major approaches to teaching information literacy popular with library media specialists. One method is recommended; the other is not.

Method One: Direct Skills Teaching (Not Recommended).

1. District or school adopts some type of scope and sequence chart for each grade level.
2. Library media specialists prepare lesson plans for each skill and teach them to scheduled classes once a week.
3. Purported advantages:
 - a. All students receive the same instruction.
 - b. Instruction is systematic.
4. Disadvantages:
 - a. Disconnected to what students need or related very little to classroom curriculum.
 - b. Students bored; learn very little; usually a waste of everyone's time.
 - c. Potential for very little or no difference on academic achievement.

Costing Out Method One:

% of library media specialist time spent _____ x annual salary _____ = Total Cost _____

Method Two: Integrated Information Literacy Teaching (Recommended).

1. District or school adopts a framework of information literacy competencies to be integrated into the curriculum showing beginning, intermediate, and advanced skill levels.
2. Library media specialists prepare a wide variety of mini-lessons that can be integrated at a moment's notice into any subject matter and project students are working on.
3. Mini-lessons are taught at the point of need — taught when students lack a skill they need to move forward.
 - a. Purported advantages:
 - b. Students learn more and more quickly when a skill is used right after it is taught.
 - c. Instruction makes sense to both teachers and students.
 - d. Teachers receive help when students are lost, uncertain, unorganized.
 - e. Teachers feel they can tackle more difficult projects because two adults are helping.
4. Disadvantages:
 - a. Students are not at the same skill level.
 - b. Tracking who knows what is more difficult.
 - c. Library media specialist has to be much more flexible and organized.

Costing Out Method Two:

% of library media specialist time spent _____ x annual salary _____ = Total Cost _____

(Get data from collaboration logs; p. 20)

Do Your Own Assessment: **The Impact of Information Literacy on Learning**

Methodology

- **Gather baseline data on any or all the measures listed below.**
- **Implement a library media specialist/classroom teacher collaboration initiative.**
- **Measure the results.**
- **Use the results in #3 as baseline data to a second cycle.**

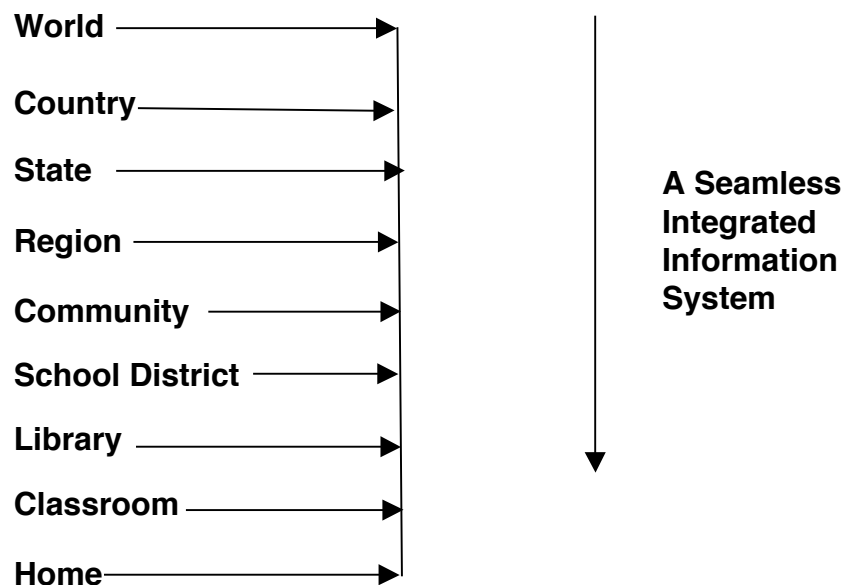
Research Question: When the library media specialist and classroom teachers join forces to teach information literacy skills as an integrated component of projects, inquiries, and investigations, what happens?

Data Collection Points:

1. Ask the library media specialist to furnish a rubric to evaluate a student project in terms of information literacy expertise.
2. As baseline data, ask teachers who would like to be a part of an experimental group to furnish 15-25 student projects at random that have already been graded for content.
3. Ask the library media specialist to evaluate the selected projects based on the information literacy rubric. As principal, participate in this assessment to become knowledgeable of the process.
4. Hold a meeting of the classroom teacher, the library media specialist, and the principal to go over the papers that were evaluated. Ask questions such as:
 - a. Is there any evidence that students went about their research in a systematic fashion?
 - b. What kind of information sources did students use to complete their projects?
 - c. Did students attribute information used? Copy? Summarize? Correctly cite?
 - d. Was there any critical thinking or creative thinking exhibited?
 - e. As a whole, what is the state of information literacy as exhibited by these projects?
 - f. How might we, as a team, infuse more information literacy principles into student work?
5. Plan an intervention for teaching information literacy principles.
6. Before projects begin, have the teacher and the library media specialist introduce a rubric to students to evaluate both the content and the process of the project.
7. Have the library media specialist assist the classroom teacher when projects are evaluated on the rubric. As principal, participate on occasion.
8. Repeat the process above. Has there been a shift?
9. Based on the data collected, what is the state of information literacy in the school?

BUILDING AN INFORMATION INFRASTRUCTURE

Schools and homes everywhere are fast becoming a part of a world-wide seamless integrated information system positioning every participant to enjoy an immense array of information, data, culture, and knowledge. But it comes at a price — not just in creating the system (admittedly costing trillions), but at a heavy cost of information overload, information pollution, information manipulation, and a host of other ills. Adults, awash in an information glut, tend to turn it off.



Will children fare any better than adults in an ocean of information technology? We are beginning a grand experiment. Administrators will and are having a giant role in shaping the destiny and impact of this experiment. Some assume that linking up and logging on is the goal. It is only the beginning.

The final section of this book looks at an architectural framework designed to deliver the best information and at the same time provide the needed human interface to make it an elevating force.

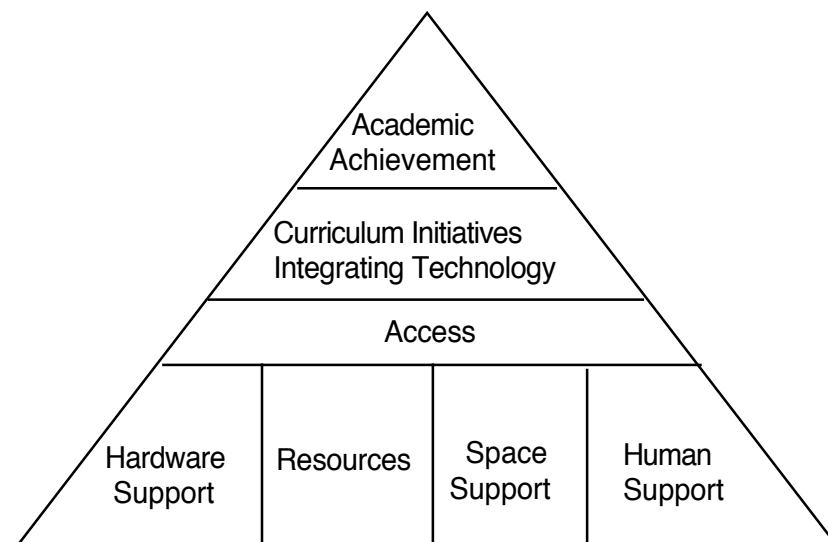
Foundational Elements of the Information Infrastructure

The information infrastructure of a school consists of the backbone or undergirding support structure of information technology for a school. Information technology is defined as all technologies ever used in education or that will ever be used in education. This includes print, multimedia, computer, and electronic delivery mechanisms.

The information infrastructure is the wiring, the networks, the equipment, the shelving, the lighting, the darkening, and the technical expertise to set in place a system to deliver information in all of its forms. This intricate network transforms the entire school into an information-rich learning plaza. The library as Network Central uses both centralization and decentralization strategies to deliver information as close to the student as possible, yet have a centralized network design.

The information infrastructure of the school is governed by a **comprehensive information technology plan** covering all forms of technology (books, multimedia materials, video, educational television, information databases, computers, Internet, etc.).

The following diagram illustrates the basic components of a comprehensive technology plan aimed at supporting academic achievement rather than upon showy networks:



HARDWARE SUPPORT

- a. Equipment
- b. Networking (school-wide)
- c. Software
- d. Technical support
- e. Repair, replacement, and upgrading
- f. Wireless

RESOURCES

- a. Internet sites
- b. CD-ROM/DVD
- c. Video/television
- d. Print resources
- e. Multimedia
- f. Digital resources

SPACE SUPPORT

- a. Network Central (library)
- b. Individual study
- c. Small group work
- d. Large group work
- e. Space for materials, equipment, technology
- f. Comfortable and inviting

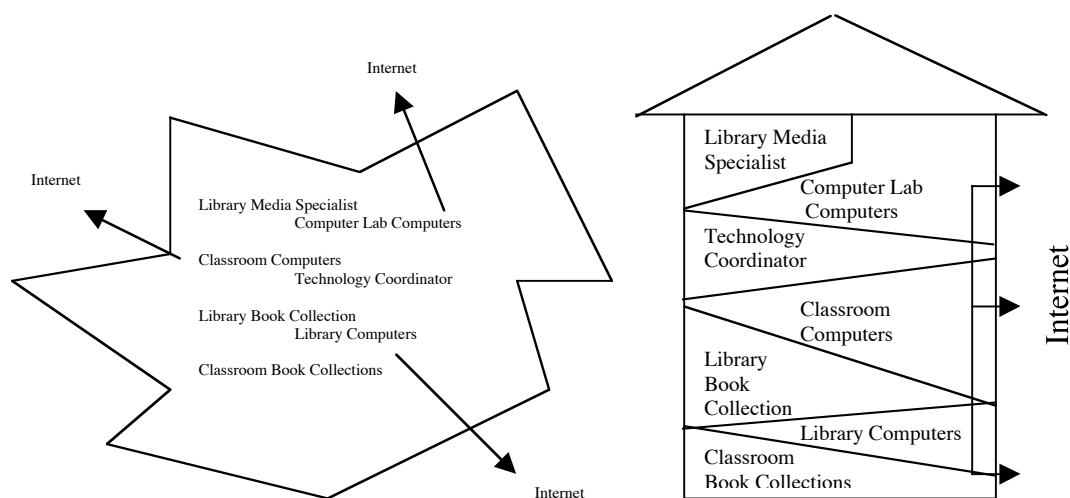
HUMAN SUPPORT

- a. Coaching
- b. Consulting
- c. Guiding
- d. Partnering
- e. Leading
- f. Visioning
- g. Training

Evaluate Your Technology Plan

Use the following checklist to evaluate whether your school's technology plan is comprehensive enough to include the following items:

- Covers all forms of technology including print, video, and multimedia, not just computers.
- Makes a clear statement that the function of technology is to enhance learning.
- Describes the essential elements of the information infrastructure.
 - Backbone wiring, networks, distribution systems, telecommunications throughout the school and the library.
 - Accommodations for print technologies in the library and throughout the school.
 - Locations of technologies as part of learning spaces of all types.
 - Hardware configurations for computers, video, CD-ROM, etc.
 - Repair and maintenance of the information infrastructure.
 - Personnel responsible for the information infrastructure.
 - Initial costs vs. ongoing costs of the infrastructure.
 - Software and information packages/data sources that will be made available and where.
- Repertoire of successful practices for enhancing learning through technology.
- Materials selection policies and acceptable use policies.
- Curricular goals in light of successful learning practices.
- Short- and long-term plans to achieve curricular goals through:
 - Exploration and experimentation.
 - Inservice training.
 - Showcasing success.
- Library staff responsible for collaboration to achieve curricular success.
- Assessment plans for measuring education impact of the technology initiative.
- Other:



Staffing the Library Media Program

After the networks are in, the computers set up, the books purchased, the magazines ordered, the Internet connections made—suddenly the reality comes that machines and materials do not transform themselves automatically into learning enhancers—it takes people!

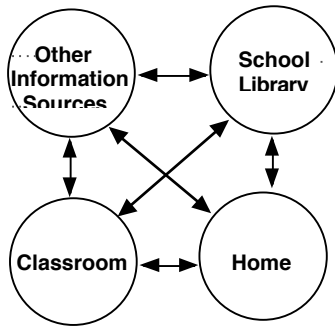
In times past, school libraries were thought to be manageable by a single individual. Now, the idea that a single individual can manage a multi-million dollar, time-intensive organization is ludicrous. Realistic staffing of a complete information technology learning plaza requires:

- Professional expertise
 - Technical expertise
 - Classified staff
 - Volunteers
-
- A full-time library media specialist in every school transforms information technology into academic achievement.
 - A professional technology coordinator creates the information infrastructure and keeps it current, updated, and operational. Coordinators who lead, join teachers and library media specialists in enhancing learning through technology.
 - A full-time technician keeps the component parts of the information systems operational and in good repair.
 - Support staff insure that the warehouse/laboratory systems work for the benefit of the students and teachers.
 - Volunteers provide assistance in so many ways that help the professionals and support staff accomplish the most important tasks with learners.

Schools that have become very expensive operations yet lack the professional vision and leadership a full-time library media specialist provides, have little prospect of enhancing academic achievement. A few of the faculty in a typical school will adopt new technologies as early experimenters, but the wholesale adoption of technological change requires continual professional encouragement, collaboration, and support.

**Can't find a good library media specialist? Grow one!
Pick your best teacher and send that person back to school to get certified.**

Do Collections and Information Resources Measure Up?



The single reason for building a library media collection in the school is to support the curriculum of that school. The collection, formerly mostly print, now contains the right materials for the right learners at the right time in every format available. The trend is to provide this collection not just in the library media center but rotating in and out of the classroom and electronically throughout the school and into the home.

Quality collections are built with great care and nurtured so that when a curricular demand is placed upon it, the collection responds well.

As illustrated at the right, a quality collection is built in two major pieces: the core collection and emphasis collections. The emphasis collections are in-depth segments serving major curriculum initiatives. The process of chunking the collection is called collection mapping.

Does Your Collection Measure Up?

- The collection has been mapped.
- Budget keeps the core collection large and current.
- Emphasis collections match the major research projects of the curriculum.
- Budget keeps the emphasis collections current and changing as the curriculum changes.
- The collection is large enough to rotate in and out of classrooms.
- The electronic collection is available from classrooms and homes.

Core Collection

(basic information on almost any topic)
(bigger helps)

Emphasis Collections

(Chunks of information supporting curricular topics)
(each chunk must serve a topic well)

Sample Emphasis Collections:

- **Civil Rights Emphasis Collection** (Students do a major paper each year.)
- **Hot Topics** (Students are required to take a position on a current topic in the news.)
- **Health and Fitness** (Students track their diet and exercise over a three month period and compare their lifestyle to recommendations of various authorities.)
- **Non-Fiction Easy-Reading Collection** (As a part of first and second grade language arts programs, children are being encouraged to read much more non-fiction to build expository reading skills.)
- **Career Collection** (Students examine various careers for a major career fair each year with the community.)
- **Local Ecology Collection** (The entire school does one service learning project in the community each year connected to ecology.)

Helpful Source:

Loertscher, David V. *Building School Library Media Collections*. Hi Willow Research & Publishing, 1998.

Classroom Collections What to Do?

Classroom collections have become quite popular in the last few years. The notion is that books and information should be at hand in addition to the repository down the hall in the library media center. Sometimes conflict develops over who owns what, inventory, and other matters. Resolution of such conflicts is not difficult when a larger vision is presented and implemented. In the age of technology, the conflict disappears as electronic sources go online.

Advantages of Print Classroom Collections

- Close at hand
- Close at hand
- Close at hand

Disadvantages of static classroom collections (i.e. permanent collections)

- Interesting to students the first few weeks of school and not thereafter.
- Too small to have any significant variety.
- Cannot contain any in-depth information needed for research on various reading levels and in a variety of formats.
- Take up too much room as the collection grows.
- Another management problem for the teacher.

Solution: ROTATING Classroom Collections

- Working with the library media specialist, create rotating classroom collections using the LMC (library media center) as the warehouse.
- The rotating collection should be as large as the classroom can handle.
- Some items might be semi-permanent; others rotating every few weeks.
- The collection would contain materials for free voluntary reading chosen by students.
- The collection would contain materials to be used in a curricular unit.
- The collection might be managed by the students in the classroom.
- Materials could be circulated from the classroom to the home.
- Loss and replacement policies would not hinder the existence or use of the collection; some loss would be considered the cost of doing business.
- The collection would contain materials in many kinds of formats including books, paperbacks, magazines, newspapers, multimedia, etc.
- Every room collection would also contain electronic resources, databases, selected Internet sites, and other digital information and multimedia items flowing from the LMC into the classroom and into the home.
- The electronic classroom collection would contain links to the central LMC collection, local, district, and national resources.

Sample Interview Questions for a Library Media Specialist

During initial and subsequent interviews, administrators have the opportunity to discern the vision and leadership potential of the library media specialist who will translate an expensive laboratory of things, wires, and networks into a learning laboratory supporting the instructional program. In turn, the interviewee will have an opportunity to discern whether you as the instructional leader have a commitment to the potential of the library media program.

Below are a few questions to stimulate a profitable discussion of vision and values:

- ❑ Tell me about your educational preparation for this position as a library media specialist.
- ❑ What is the significance of the national guidelines and standards for the library media program in a school?¹ How might they apply to the educational program of this school?
- ❑ How would you collaborate with teachers to plan, execute, and evaluate units of instruction?
- ❑ What would you do to integrate the library media program with the reading program to produce avid and capable readers?
- ❑ What would you do through the library media program to enhance learning through technology?
- ❑ What would you do to promote a program of information literacy rather than just library skills?
- ❑ How would you integrate technology into the library media program to make the library media center “Network Central?”
- ❑ What is your view of how teachers and students get access to the library media center, its materials, and its technology?
- ❑ Describe what I might see if I were to visit your library media program during a typical hour.
- ❑ What is your view of how you and I could work together to stimulate academic achievement?
- ❑ How might we work together to get the needed financial support to improve the library media program and make it a viable entity over time?
- ❑ Other:

¹ American Association of School Librarians and Association for Educational Communications and Technology. *Information Power: Building Partnerships for Learning*. Chicago: American Library Association, 1998.

Buying a Pig in a Poke: Recognizing Fads and Gimmicks

With the invention of every technology has come the entrepreneurial imaginings of how education could be used to generate a healthy revenue stream for businesses. Grandiose schemes involving technology costing millions of dollars are touted as the solution to a host of educational ills.

The sage advice, “If it sounds too good to be true, it probably is,” applies here. Stories abound of high-powered salesmen influencing administrators on the golf course—and whether there is any truth to that notion, a checklist of quality concerns is in order:

Checklist for Technology System Evaluation

Consideration Stage:

- The advertised benefits match school and district curricular goals.
- The system has a track record that can be verified:
 - Through objective research studies.
 - Through site visitations including interviews with teachers, library media specialists and students.
 - Through site visitations that most nearly match the type of school and community you have.
- What are the disadvantages of the system?
- What will happen to students who do not do well using the proposed system?
- If the promised benefits are not realized, what will the fallout be?
- Other:

Costing Stage:

- An accurate cost projection has been formulated and presented up front.
- Inservice training costs have been included in cost projections.
- What can this system do that cannot be done more simply and at less cost?
- Can a cost/benefit analysis be done?
- Other:

Analysis of Support Stage:

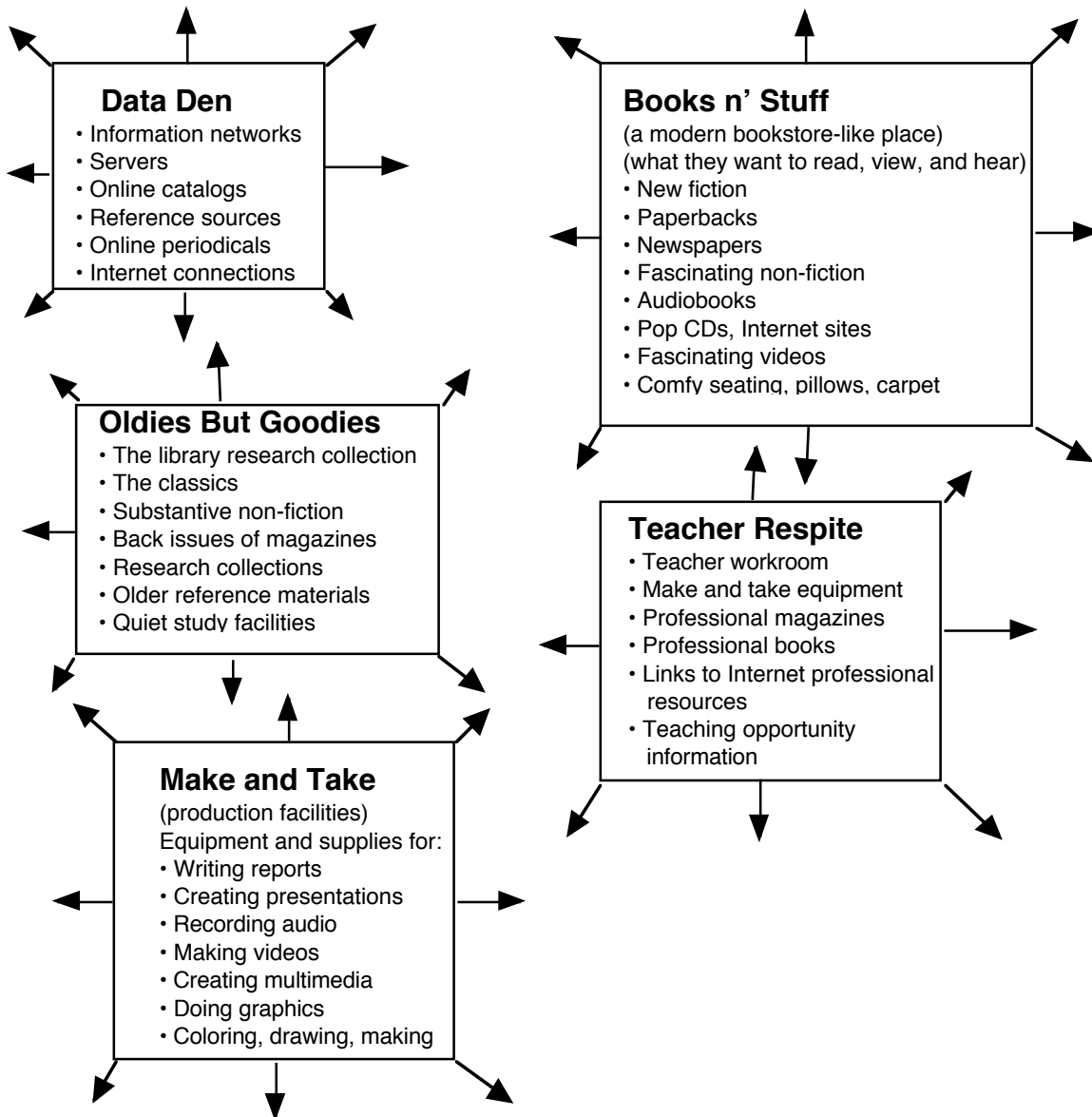
- The company has a track record for supporting its products after the sale. This can be verified.
- Other:

Decisions Stage:

- Contracts do not commit the school or district beyond a reasonable trial period.
- Decisions to purchase the system are made only after extensive input from those who will have to implement the technology.
- Other:

The Five Functional Areas of a Library Media Center Facility

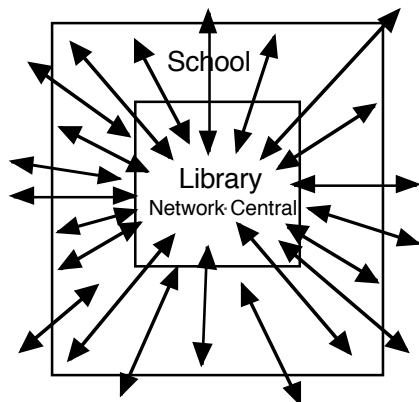
The following diagram shows five major functional areas of the library media center and the concept that services radiate from each functional area out into the total school environment.



Facility Usage of Network Central (The Library Media Center)

Network Central, the hub of the school, is still an important element in the learning laboratory concept of an entire school. Use the following checklist to determine if the library media center space is really supporting a learning laboratory operation.

- ❑ Individual students can be accommodated throughout the school day whether or not other groups are using the library media center.
- ❑ Small groups can be working simultaneously in the library media center using materials, researching, producing, planning, and browsing.
- ❑ Large groups can be accommodated simultaneously without hindering the usage of the library media center by small groups and individuals.
- ❑ The library media center is “Network Central” for all types of materials, technologies, and networks.
- ❑ The central library media center is a pleasant place to be; students and teachers are attracted there.
- ❑ The arrangement of areas of the library media center allows various groupings of students to work and research simultaneously in a busy, purposeful atmosphere without bedlam.
- ❑ Teachers have space in the library media center to “headquarter” temporarily as a base for teaching and research.
- ❑ The automation networks and various information systems of the library media center extend outward into the instructional areas of the school and on into the homes of students.
- ❑ The library media center may be open into the evening hours.
- ❑ Other:



The Elementary Library Media Center Schedule: A Quandary

Ask elementary school library media specialists in the United States to identify their biggest problem and they will say that once-a-week scheduled visits prevent them from having a major impact on academic achievement. Library media specialists often have their jobs because they are funded or under union contract as planning time for elementary teachers. In many schools, the weekly visit schedule ties up the most expensive laboratory space in the school almost the entire week so that individuals, small groups, and other classes needing to use the facility are denied access. The profession advocates the abandonment of “rigid schedules” in favor of flexible ones. That is, the library media center should be open all day every day. Individuals and small groups can come at any time. And classes can be scheduled for research when teachers and library media specialists want to collaborate.

What are the advantages of the flexible schedule?

- The LMC becomes a learning laboratory available to everyone throughout the school day.
- Library media specialists have time to collaborate with teachers on creating enhanced learning experiences – something that the research shows is the best predictor of increased academic achievement.
- The LMC responds to the curriculum, not the curriculum to the LMC.
- Library media specialists teach information literacy at the point of need rather than a less effective “course of instruction” – another factor showing greater increases in achievement.
- Teachers can schedule the “learning lab” to fit into their unit schedule – sometimes every day for several days and not at all other days. And they can schedule the library media specialist, their partner teacher, for projects when two teachers would be better than one.
- Students can get to the LMC when they need it – not just once a week.

If you absolutely must retain the weekly schedule:

- Demand that individuals, small groups, and large groups can use the LMC whether or not a scheduled class is there. Arrange the LMC facility so this can happen.
- Consider having classes scheduled every other week rather than once a week to free up the LMC schedule for collaborative units.
- Consider having the scheduled class do sustained silent reading (SSR) and book checkout during their scheduled visits. The library media specialist would be working with other classes simultaneously on research projects. Have support staff supervise the SSR activity.
- See that more and more information is available on networks to classrooms and homes.

What if flexible scheduling is not working?

- Send a library media specialist and a group of teachers to a place where it is working for a day of analysis and planning.
- Pilot the new plan with a few teachers first, then the school as a whole.

THE BOTTOM LINE

The library media center is a very expensive investment that must pay its way. Locking it up through rigid schedules negates its impact.

Dealing With Challenged Materials and Technologies

Fears from parents and organizations about what students are being taught or exposed to can bring on individual, group, or whole community battles. Pornography on the Internet is just one of a number of concerns currently being discussed widely.

When students are exposed to a wide variety of information sources, they will automatically encounter good information, opinionated information, unpopular ideas, and seditious ideas. There are risks in the world of free ideas and the argument generally revolves around the question: “At what age should children be allowed to encounter various types of ideas?” Consider a few major principles:

- Free speech and ideas found in books, periodicals, the Internet, and from personal contact have always been dangerous to the status quo.
- Controversy generally arises in the areas of politics, religion, sexuality, and foul language.
- There is no such thing as a non-controversial book, movie, or Internet site.

Each school administration, faculty, and library media specialist needs to anticipate controversy and be prepared to deal with it. Waiting until objections arise is not a sound plan!

Preparations checklist:

- We have a selection policy covering all materials and information technologies, including the Internet, adopted and in force.
- Our selection policy includes an acceptable use policy covering student behavior on information networks.
- Our selection policy includes a process for dealing with challenges (written complaints, review panels, rulings, follow-up policy consideration).
- The entire faculty has been educated about the selection policy; the acceptable use policy, and how to apply it in day-to-day situations. They know what to do when someone complains.
- When someone complains, we remember we have a selection policy! We apply it when challenges occur.
- Other:

Hint to Principals: Ask the library media specialist to supply you with a wide variety of information on this topic and study the issues carefully. This is one area that must not be ignored. It cannot be on a “get around to it” agenda.

Networking with Other Agencies

Numerous agencies both within and without the school district, may provide significant assistance in achieving the mission of the library media program in a single school. Public libraries, civic organizations, social service agencies, school district services, regional centers, state departments of education, and libraries in any part of the world are worth checking for assistance, advice, and information.

Be sure to periodically review all contracts and services with outside agencies to ascertain whether the services provided are worth the costs encumbered. Cooperation is not a substitute for serving your own school. It assumes a sharing stance: I have something to lend and would appreciate borrowing.

Many thousands of dollars can be saved, services used, cooperative programs established, and electronic links created. Look for the following and more:

Networking/Cooperation/Contractual Checklist

- Agencies negotiating lower prices because of higher volume purchasing for equipment, software, and materials (as long as quality products and services result).
- Delivery of educational television, video, service contracts, site licenses, Internet access, distance education access.
- Maintenance and repair services or contractual arrangements with reliable firms.
- Grants and funding sources assistance.
- Cooperative connections to various networks and information services at reasonable rates.
- Testing and evaluation analyses of equipment and software.
- Inservice and professional development for all levels of personnel.
- Professional associations, conferences, and exhibits for preview and inservice training.
- Summer reading programs.
- Joint information systems (catalogs and networks).
- Cooperative materials acquisitions.
- Other:

Adding Up All the Costs

Building a school-wide information-rich laboratory is not cheap. Yet, the investment can produce enormous benefits if the library staff and the classroom teachers are working together to enhance learning experiences.

Superintendents and principals must be able to justify the effort and expenditures to the general public—in short, they must compute in their minds some sort of cost/benefit analysis. Numerous ideas have been given in this book for participating in and monitoring the library program just enough to sample the benefits of the program.

Take a final look at all the costs computed in the various segments of this publication, probing for value-added signposts.

1. Collaboration: The Key Element for the Entire Program

- What are the human costs attributable to this program element? (from p. 24)
- What are the benefits of the collaborative program on instruction? (from p. 25)
- Are the benefits known to the community and to the board?
- What needs to be done to maximize benefits in terms of cost?

2. Building Avid and Capable Readers

- What is the cost of providing a print-rich environment in the school? (from p. 35)
- What are the benefits to the reading and literacy programs of the school? (from p. 36)
- Are the benefits of supporting books and library media centers as a part of literacy known to the community and the board?
- What needs to be done to maximize literacy for the amount spent each year on reading materials?

3. Enhancing Learning Through Technology

- What is the cost of providing an information-rich technological environment?(from p. 48)
- What benefits to learning have and are being identified? (from p. 49)
- Are the benefits of increased learning through technology known to the community and the board?
- What needs to be done to maximize the amount of learning from the technology we have?

4. Creating an Information Literate Learner

- What are the human costs attributable to this program element? (from p. 60)
- What are the benefits of information literacy training on students? (from p. 61)
- Are the benefits of increased information literacy known to the community and the board?
- What needs to be done to maximize the amount of learning from the information literacy program we have?

How would you rate the impact of the library program versus its costs?

Do Your Own Assessment: Adding Up the Entire Impact of the Library on Academic Achievement

Compile the evidence suggested throughout the book and then complete a report card for each of the following major statements:

1. The state of collaboration between the faculty and the library staff. (from p. 25) **A B C D F**
2. The contribution of the library program to reading. (from p. 36) **A B C D F**
3. The contribution of the library program to enhancing learning through technology. (from p. 49) **A B C D F**
4. The contribution of the library program to information literacy. (from p. 61) **A B C D F**
5. The state of Network Central: The Information Infrastructure. (from pp. 62-74) **A B C D F**

The Bottom Line:

Are students and teachers doing better?

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