ED 453 785   IR 020 628

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TITLE	IMPACT: Guidelines for Media and Technology Programs.
INSTITUTION	North Carolina State Dept. of Public Instruction, Raleigh. Instructional Technologies Div.
PUB DATE	2000-09-00
NOTE	234p.
PUB TYPE	Guides - Non-Classroom (055)
EDRS PRICE	MF01/PC10 Plus Postage.
DESCRIPTORS	Access to Information; Educational Administration; *Educational Technology; Elementary Secondary Education; Evaluation Methods; Information Technology; Learning Resources Centers; *Library Services; *School Libraries; State Standards
IDENTIFIERS	Learning Environments; North Carolina; *Technology Implementation

ABSTRACT

This document provides the set of standards for K-12 library media coordinators and instructional technology facilitators in North Carolina, including tenets on programs, personnel, budgets, resources, and facilities to guide the building of a technology-rich learning environment. Guidelines are provided in the following areas: (1) teaching and learning, including collaboration for instruction, information access, staff development, and public relations; (2) information access and delivery, including making resources accessible, planning and designing facilities for learning, developing educational specifications, educational specifications for school and media/technology spaces, educational specifications for the school library media center, educational specifications for furniture and shelving, and general technology infrastructure for instruction; (3) program administration, including planning the program, being the change agent, advisory committee membership and responsibilities, staffing the program, budgeting for the program, creating and implementing policies and procedures, building support for vision and programs, and issues and myths; (4) system-level guidelines, including system-level leadership, teaching and learning, information access and delivery, and program administration; and (5) research and evaluation, including how to evaluate programs, using output measures for evaluation, a reference chart of measures and what they support, and program evaluation rubrics. (Includes a glossary.) (Contains 214 references.) (MES)
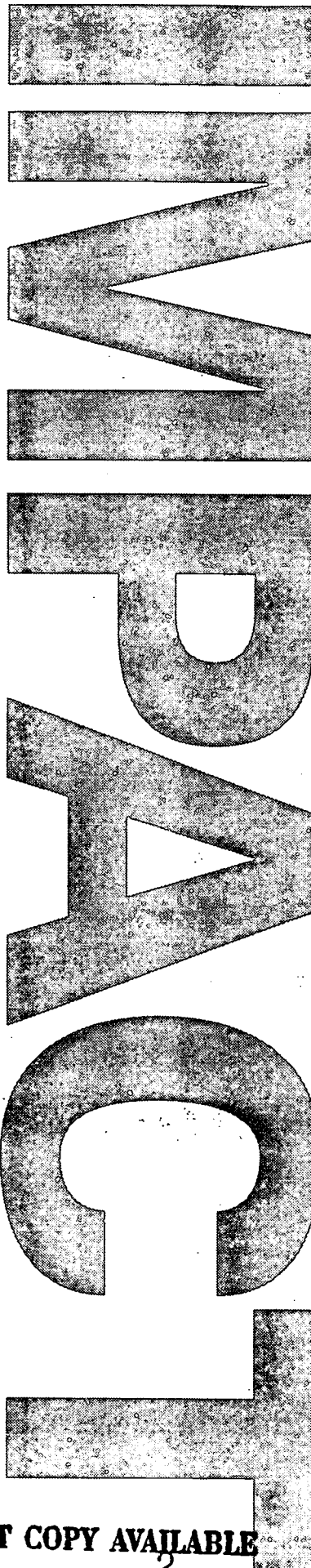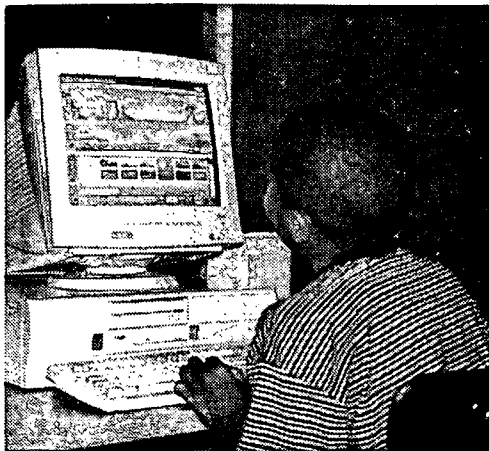
Guidelines for Media and Technology Programs

IMPACT

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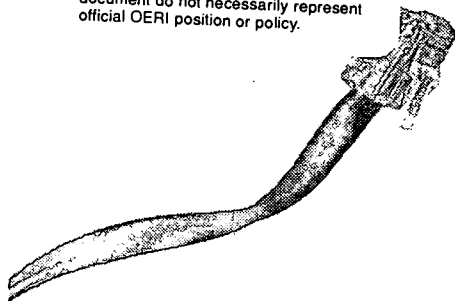
ED 453 785

IR020628

September 2000

Instructional Technologies Division

Public Schools of North Carolina
te Board of Education
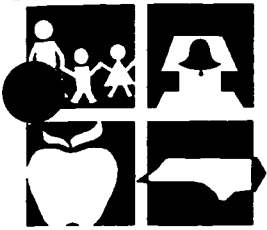artment of Public Instruction

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2

August 7, 2000

North Carolina Media and Technology Professionals:

It is with great pleasure that I commend to you *IMPACT: Guidelines for School Library Media and Instructional Technology Programs.* The acknowledgement of the *equal* importance of both the school library media and the instructional technology programs in teaching and learning is the premise of these guidelines.

We know that school library media and instructional technology programs are the foundation of a twenty-first century education. The access to information that they afford makes the difference between the textbook-bound classroom of the past and the far-reaching, resource-based curriculum of today and tomorrow. Research tells us that instructional technology, used appropriately, results in higher test scores. It is remarkably effective in sparking student interest, increasing motivation, and raising self-esteem, thus positively impacting student achievement. Research also tells us that a school library media center stocked with up-to-date, accurate, and attractive resources managed by a professional media coordinator who collaborates with teachers to augment and enhance classroom instruction also results in increased test scores, especially in reading. IMPACT reflects both the reality of this research and the commitment to assuring that every teacher and student has the academic and personal advantage of access to these high quality programs.

School library media and instructional technology programs and the resources they promote are central to the success of North Carolina's ABCs of Public Education--in fact, to all school reform initiatives throughout the state. IMPACT and the excellence it fosters are a part of the vision and accountability necessary to produce schools that are First in America.

Michael E. Ward
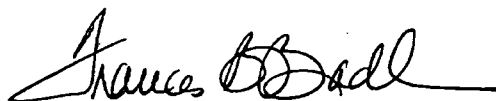State Superintendent of Public Instruction

Foreword

Welcome to *IMPACT: Guidelines for School Library Media and Instructional Technology Programs*—a brand new book, a brand new look!

IMPACT is part of the overall vision of the North Carolina Department of Public Instruction. It recognizes that effective school library media and instructional technology programs are the infrastructure that supports both teaching and learning. These programs are the key to making education relevant to a knowledge-based society and its economy. *IMPACT* is aligned to *Information Power: Building Partnerships for Learning*, the national standards for media and technology programs. Based on media and technology research and reflecting the recommendations of the revised School Technology Plan (2000-2005), *IMPACT* acknowledges the importance of staffing each school in North Carolina with both a school library media coordinator and an instructional technology facilitator. It also reflects a commitment to provide a roadmap for an integrated media and technology program once these positions are in place. It offers assessment instruments to assist in the evaluation of media and technology programs designed to move us toward our goal of schools so effective that they are First in America by 2010.

IMPACT reflects the reality that media and technology programs and resources are not static. In fact, they are constantly evolving, mandating on-going update and revision. Thus, while there is a one-time print run of this document, it is also a Web-based publication *(www.ncwiseowl.org/impact.htm)*. *IMPACT* will be updated regularly, new resources created, further links added. It will always be a work in progress.

IMPACT is also a publication for many audiences. Media and technology personnel can no longer publish a document simply for themselves. Over the next year, various publications, both print and Web-based, will be targeted at those whom our program impacts: students, teachers, administrators, parents, and the community. Only when everyone concerned with the education of our children understands the integral part that media and technology programs play in high student achievement will the commitment to fund these resources be made. Thus, it is imperative that we use *IMPACT* to inform all citizens in North Carolina of the importance of our role in education.

Media and technology professionals live in exciting times. The public is beginning to understand the link between our programs and services and a high quality education. We dare not squander this opportunity. *IMPACT* is a tool that will help media and technology personnel at both the state and local levels work together to plan and build effective, comprehensive teaching and learning environments for the 21st century. We look forward to the challenge!

Frances Bryant Bradburn, Director
Division of Instructional Technologies

Acknowledgements

We welcome the opportunity to express appreciation to the following workgroup participants who contributed their time, enthusiasm, and expertise in the development of this document.

Local Education Agencies

Asheboro City	Mike Ingram
Beaufort County	Sarah Smith
Buncombe County	Carolyn Crew
Carteret County	Mary Forrest
Catawba County	Kathy Kiser
Charlotte-Mecklenburg County	Norma L. Miller
Cumberland County	Edna A. Cogdell
Durham Public Schools	Nelda G. Caddell
Edgecombe County	Rhea Resnik
Harnett County	Ann McCormick
Hoke County	Pat McNeill
Guilford County	Judie Davie
Guilford County	Karen Perry
Jackson County	Peggy Wike
McDowell County	Amy Washburn
Richmond County	Suzanne Griffin
Rockingham County	Joye M. Latta
Rockingham County	Karen Gavigan
Wake County	Jane C. Parker
Wake County	Rusty Taylor

Institutions of Higher Education

Dr. Marilyn Miller, Emeritus
Dr. Kieth Wright, University of North Carolina at Greensboro

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Zena Harvley-Felder	Harriette Sparlin
Angela Leeper	Annemarie Timmerman

Table of Contents

Information Access and Delivery (continued)

9

Introduction

"The challenge facing America's schools is the empowerment of all children to function effectively in their future, a future marked increasingly with change, information growth, and evolving technologies.

Technology is a powerful tool with enormous potential for paving high-speed highways from outdated educational systems to systems capable of providing learning opportunities for all, to better serve the needs of 21st century work communications, learning, and life."

National Educational Technology Standards for Students, Connecting Curriculum and Technology, International Society for Technology in Education, 2000.

"Information literacy—the ability to find and use information- is the keystone of lifelong learning. Creating a foundation for lifelong learning is at the heart of the school library media program. Just as the school library media center has moved far beyond a room with books to become an active, technology-rich learning environment with an array of information resources, the school library media specialist today focuses on the process of learning rather than dissemination of information. The library media program combines effective learning and teaching strategies and activities with information access skills. Information availability will undoubtedly continue to mushroom into the next century, which will make a strong school library media program even more essential to help its users acquire the skills they will need to harness and use information for a productive and fulfilling life."

Information Power: Building Partnerships for Learning, American Library Association , Chicago, 1998.

Through the State Board of Education's Strategic Plan for Excellent Schools, every child has the opportunity to achieve at his or her highest potential in the fast-paced, ever-changing environment of the 21st century. This rapid advance of technology requires that all educators continually upgrade their skills, knowledge bases, and perspectives.

Media and technology programs are the centerpiece of education. Teachers are no longer surrounded by students but, rather, teachers and students work together to answer the questions they encounter on their educational journey. They cannot travel this journey, however, without understanding how information is organized and that technology is the portal. The necessity for information literacy to be a part of a child's education demands that library media coordinators and instructional technology facilitators serve as teacher and student travel guides on this eye-opening journey of learning.

IMPACT: Guidelines for School Library Media and Instructional Technology Programs provides the set of standards for library media coordinators and instructional technology facilitators. National, state, and professional standards are reflected in the development of this document. What follows are recommended tenets on programs, personnel, budgets, resources, and facilities that will guide the building of a technology-rich learning environment.

IMPACT will help meet the technology challenge facing North Carolina schools in the new millennium. As a result, media and technology programs will:

IMPACT teaching,
IMPACT learning,
IMPACT motivation, and
IMPACT student achievement.

11

Teaching and Learning

- Teaching, Learning,
  Media, and Technology

- Collaboration for Instruction

- Information Access

- Staff Development

- Public Relations

- Works Cited

● Teaching, Learning, Media, and Technology

> "Educational technology has demonstrated a significant positive effect on achievement."
> (SIIA 1999)
>
> "Research shows the highest achieving students come from schools with good school libraries."
> (Lance 1993)

Media and technology programs should focus on student achievement and involve the entire staff in planning instructional programs that are enriched by high-quality resources and state-of-the-art technology. A learner-centered approach to instruction focuses attention on media and technology programs as vital instructional forces that expand, support, and complement classroom learning. The integration of media and technology programs with instruction is the joint responsibility of teachers, administrators, students, support staff, parents, and media and technology professionals working together to accomplish objectives that support desired outcomes for students. Media and technology programs should incorporate collaboration, information access, staff development, and public relations, all of which contribute to the success of teaching and learning.

Contributing to Teaching and Learning Success

Media and technology programs can contribute to the success of teaching and learning by incorporating the following:

- Collaboration for instruction
- Information access
- Staff development
- Public relations

● Collaboration for Instruction

"Collaboration, like communication, is essential in today's world. Working with other organizations to promote a common goal has a greater chance of success. Collaboration involves the communication of one's vision in such a way as to generate support for one's program."

(*North Carolina Educational Technology Plan 2001-2005,*
http://tps.dpi.state.nc.us/techplan2000)

"Collaboration is a symbiotic process that requires active, genuine effort and commitment by all members of the instructional team. It may take considerable time and energy to establish truly collaborative relationships, but developing effective collaboration strategies is crucial..."

(AASL and AECT 1998, 51)

Collaboration should be evident in all areas of the school environment as well as at the system, regional, and state levels. Within the school, the school library media coordinator and the instructional technology facilitator work closely with teachers, administrators, students, and support personnel. All of these people must be involved in the planning, implementation, and evaluation of an instructional program infused with media and technology.

☑

**Collaborating to achieve
instructional goals means:**

- Developing strong instructional partnerships with classroom and special area teachers by working together to plan and implement instruction and to evaluate instructional outcomes.
- Using the best available models of instruction, collaboration, and cooperative learning.
- Ensuring that instruction takes place in a student-centered, project-based environment.
- Planning projects and activities with teachers that are relevant to real-life problems and supporting the development of critical thinking and problem-solving skills in students.
- Creating small group activities with heterogeneous groupings to accomplish curriculum goals and objectives.
- Helping teachers to address different learning styles by using high-quality resources in a variety of formats.
- Involving students with setting goals for learning.
- Working with teachers and students to create rubrics for project evaluation.
- Creating and sharing a file or database within the school of collaboratively developed lesson plans and related materials keyed to the North Carolina Standard Course of Study.
- Searching for lesson plans and successful teaching models in other schools, at conferences, and in the professional literature.
- Actively participating in the planning and evaluation of local, regional, and state activities such as Battle of the Books, Multimedia Festival, Quiz Bowl, and the North Carolina Children's Book Award.

A fundamental aspect of collaboration is the involvement of media and technology professionals in all aspects of curriculum implementation.

☑

**Being involved with the curriculum
to achieve instructional goals means:**

- Being knowledgeable about the North Carolina Standard Course of Study for all subject areas and grade levels within the school.
- Working with teachers to infuse media and technology into instruction across all subject areas and grade levels.
- Serving on the school improvement team.
- Taking leadership roles on the Media and Technology Advisory Committee(s).
- Analyzing the school improvement plan for areas of instructional focus.
- Reflecting the school improvement plan in instruction and in the acquisition of resources.
- Analyzing test data with teachers to improve instructional focus.
- Participating in grade level/departmental meetings.

● Information Access

Providing access to materials and equipment is the primary function of media and technology programs. Information access includes both physical and intellectual aspects. Physical access means open, flexible access to facilities for instruction and leisure reading for all populations. Intellectual access must take into consideration students' right to read and intellectual freedom.

"Wiring the schools and populating them with computers is necessary but insufficient to ensure equal opportunity to share in the digital revolution. Children need access to computers and the Net, but they also need appropriate software and services. They need motivation to learn. They need a redesigned education system and teachers who have been retrained and reoriented. Innovative technologies cannot make up for educational professionals who lack innovative methods and merely replicate learning models that don't work."

(Tapscott 1998, 262)

☑

**Ensuring equitable access
to information means:**

- Providing accurate, up-to-date, bias-free print, non-print, and technology resources that meet the curriculum and developmental needs of students and teachers.
- Supporting intellectual freedom and students' right to read. "Intellectual freedom is 'prerequisite to effective and responsible citizenship in a democracy.'" (AASL and AECT 1998, 91)
- Providing access to Internet-based resources that support the curriculum.
- Providing flexible access to media and technology resources and facilities throughout the day.
- Staffing the media center and computer labs before and after school and on weekends for use by students, teachers, and members of the community.
- Providing technologies (such as laptops, portable text devices, and digital cameras) for individual, small group, classroom, and offsite use.
- Purchasing software and assistive/adaptive hardware (such as speech synthesis software, voice input technologies, and touch screens) that provide access to all media and technology for students and teachers with special needs.
- Providing large screen monitors or data/video projection devices for whole class instruction.
- Ensuring that approximately 60% of the instructional budget is used to acquire materials of lasting value for the school library media center so that every student and teacher in the school can use them.
- Designating an area in the school as a Parent Resource Center that offers a variety of family resources to support learning.

"Flexible, equitable, and far-reaching access...is essential to the development of a vibrant, active learning community."
(AASL and AECT 1998, 89)

"Flexibly scheduled media centers provide greater academic benefits."
(Lance 1993)

17

● Staff Development

The library media coordinator and the technology facilitator are advocates for appropriate media and technology staff development for all. They should continue to learn by attending regular system-level and state-level meetings and conferences. They must also work jointly with school-based and system-level administrators to ensure that appropriate staff development is planned and provided for faculty and staff in their school.

"Never before in the history of education has there been greater recognition of the importance of professional development. Every modern proposal to reform, restructure, or transform schools emphasizes professional development as a primary vehicle in efforts to bring about needed change."

(*North Carolina Educational Technology Plan 2001-2005, http://tps.dpi.state.nc.us/techplan2000*)

☑

Planning high quality staff development means:

- Participating in regularly scheduled district, regional, and state meetings and sharing information with school staff.
- Attending state, regional, and national conferences to report back on staff development initiatives and trends.
- Serving on staff development committees at the school and system levels.
- Involving principals, teachers, and paraprofessionals in the planning of staff development.
- Reflecting licensure requirements, ABC goals and objectives, and the school improvement goals in the school staff development plan.
- Providing staff development opportunities that integrate media and technology into all curriculum areas.
- Aligning staff development to the North Carolina Educator Competencies as well as state and national instructional goals/objectives.
- Using research-based models for staff development.

☑

Assessing staff development needs means:

- Conducting an annual staff development needs assessment.

- Prioritizing staff development opportunities based on needs assessment.

☑

**Ensuring high quality
staff development means:**

- Respecting the knowledge and experience of teachers, administrators, and paraprofessionals.
- Providing a variety of staff development opportunities (such as just-in-time, small-group, large-group, and online).
- Ensuring that staff development is relevant to the classroom setting.
- Creating an ongoing calendar of staff development opportunities tailored to meet assessed staff development needs.
- Providing time to learn, practice, and incorporate new skills into instruction.
- Providing follow-up through re-teaching, one-on-one tutoring, troubleshooting, modeling, and other forms of support.
- Evaluating staff development efforts on a continuing basis to ensure they are meeting the needs of teachers and staff.

● Public Relations

Keeping school faculty, staff, and parents informed of program developments and successes is one of the best ways to provide ongoing support for media and technology programs. Public relations efforts can take a variety of forms, from traditional to high tech. The goal of all public relations efforts should be stronger media and technology programs that support the school community.

> "A well-documented, well-publicized program affirms its own excellence and demonstrates its value to the entire learning community. An effective program increases its stature through regular, systematic communication about its mission, goals, functions, achievements, and overall impact."
>
> (AASL and AECT 1998, 112)

☑

Promoting media and technology programs means:

- Sharing and modeling successful instructional strategies with faculty and staff.
- Communicating to faculty and staff current research findings that impact media and technology programs.
- Reporting regularly on policies and program plans at faculty and staff meetings.
- Informing faculty, staff, and students of program resources, activities, and services using a variety of methods such as fliers, newsletters, presentations, displays, and student products.
- Promoting media and technology developments through regular electronic newsletters, the school Web page, PTA/PTO presentations, and family night functions.
- Modeling awareness and use of all resources, especially emerging technologies, to encourage teachers and students to do the same.
- Building a strong, informed Media and Technology Advisory Committee that consistently advocates for media and technology programs with fellow teachers, parents and the community.
- Networking with media and technology professionals across the school system, region, and state to learn about and share successful instructional strategies, lesson plans, and other resources.
- Presenting successful programs at PTO/PTA meetings and board meetings.

20

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21

Information Access and Delivery

- Information Access and Delivery: the Heart of Effective Programs
- Resources, Needs, and Choices
- Making Resources Accessible
- Planning and Designing Facilities for Learning
- Developing Educational Specifications
- Educational Specifications for School Media/Technology Spaces
- Educational Specifications for the School Library Media Center
- Educational Specifications for Furniture, Shelving, and Built-ins
- General Technology Infrastructure
- Works Cited

● Information Access and Delivery: the Heart of Effective Programs

Information Access and Delivery

Program Administration | Teaching and Learning
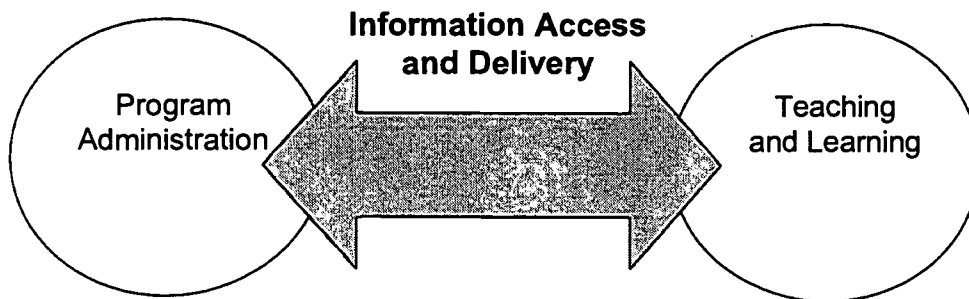
All media and technology programs depend on one primary function: the access and delivery of information. Information access and delivery are multifaceted functions that have different meaning for different people. For example:

- For one teacher it may focus on Web-based resources that allow students to solve a problem through a carefully designed Web quest.
- For another teacher, it may be the assignment of a module from an integrated learning system to bring several of the lowest performing students up to the level of their classmates.
- For a student, it may be the matching of a special book for the latest book report or identifying resources for a research project.
- For the administrator, it may be the ability to access an Internet-based professional development module for graduate credit.

All of these needs rely on the ability of media and technology professionals to access and deliver specific information in a variety of formats and for a variety of reasons. Because information access and delivery are multifaceted, they often overlap with and complement program administration as well as teaching and learning.

The impact of information access and delivery on the quality and effectiveness of the school library media center, computer labs, and classrooms make them the heart of any school media and technology program. Sections in this chapter address the following main topics that are fundamental to information access and delivery in media and technology programs:

- Resources, Needs, and Choices
- Making Resources Accessible
- Planning and Designing Facilities for Learning
- Developing Educational Specifications

23

● Resources, Needs, and Choices

Resources are the cornerstones of effective programs.

"Information is the basic ingredient in the active, authentic learning required of today's student."

(AASL and AECT 1998, 83)

Resources have always been the cornerstones of effective media and technology programs. Once the province of THE BOOK, with an occasional 16mm film or silent filmstrip to supplement its print format, media and technology programs today use myriad formats, reaching beyond the mere four walls of the school building to encompass local, state, national, and international resources.

Access to resources is critical to meeting diverse needs.

The school technology and media programs support diverse needs of learners and teachers with access to high-quality resources (print, non-print, and electronic), equipment, and facilities for classroom activities and personal or professional interests.

Changing resources impact selection and accessibility policies.

Selecting and providing access to diverse resources that meet unique requirements of individual schools and communities can no longer be determined using quantitative standards. In fact, the changing nature and expansion of school resources make these standards obsolete.

Selection of and access to today's resources must:

- Be based on an analysis of many needs.
- Include information in a variety of formats.
- Be supported by equipment and evolving technology infrastructure.
- Be supported by effective policies and procedures that help ensure equity.

24

The Impact of Changing
and Expanding Resources

- New and more appropriate forms of needs assessment have replaced quantitative standards.
- Many more resources must be supported by equipment and technology infrastructure.
- Ensuring equity of access means adding new policies and procedures as well as revising some existing ones to address changing resources.

Diverse needs require diverse formats.

School media centers will continue to provide a wide variety of resources for teachers and students. Media and technology professionals have a responsibility to assist teachers and students in identifying and using the most appropriate format for a given learning activity. For example, the most current information on a topic may be located on the Internet. However, print resources can offer information that has been researched and aggregated into a readily accessible format.

There are many resources to guide selection of materials that are appropriate to a variety of learning objectives and situations. Quotes and sources cited on the next page provide one place to start.

25

When are resources
on the Internet worth mining?

"We keep coming back to the book. For certain questions it remains an excellent piece of information technology. In many cases, the carefully distilled information contained in a book may provide superior access to insight. Library media specialists and classroom teachers whose students are lucky enough to have broad scale access to the Internet need to carefully consider when the resources available on the Internet are worth mining. Chances are, given the current nature of the information available on the highway, time may often be spent more efficiently and productively using other information resources."

(McKenzie 1995)

Teaching Students
to Make Wise Choices

"During this time of change, schools must teach students to make wise choices. They must be discouraged from automatically rushing to a computer when a book or a print source might be the best place to turn for some items. On the other hand, perhaps the "free" NET will prove the best source after all. Perhaps an electronic subscription will offer the best insight. Maybe a CD-ROM or a different, networked information product will outperform the others?"

(McKenzie 2000)

26

● Making Resources Accessible

The Role of Media and Technology Professionals

To provide effective information access and delivery, the school media and technology staff, with other members of the Media and Technology Advisory Committee, constantly:

- Examine the collection to make sure it meets curriculum development needs of students, teachers, and staff.
- Consult with system-level staff to ensure network compatibility of resources.
- Discard old, worn, or obsolete resources and equipment.
- Replace or upgrade with new, more appropriate resources and equipment.

> "A collection of resources must be dynamic; it must change in content and format because the curriculum changes and new formats become available."
>
> (Alabama Department of Education 2000)

An effective dynamic collection requires continual evaluation and yearly inventory. Assessing faculty and student needs without carefully determining how the collection is meeting those needs gives media and technology staff only part of the information necessary for acquiring resources. Adding new resources and equipment without discarding older, less appropriate items results in resources that are difficult to use and impossible to maintain.

27

Vital Components for Resource Access and Delivery

Vital components of resource access and delivery include:
- Adequate and reliable technology and infrastructure.
- Network and desktop software.
- Online resources.
- Online school library media catalogs (media automation).

Adequate and reliable technology and infrastructure	"Connectivity to the school building is only the initial link to the world. It also must extend to the classroom. This connectivity, better known as a Local Area Network, allows instructional and administrative computers to access remote databases and applications, both within the building and to the outside world." (North Carolina Educational Technology Plan 2001-2005, http://tps.dpi.state.nc.us/techplan2000)
Network and desktop software	Electronic resources may be available over the LAN (local area network) or from the local hard drive of a computer. Some examples of these resources would include educational application software, utility software, and Internet browsers. Installation of software on network or desktop computers is determined by a number of technical factors: • Number of users • Speed of the network • Number of software licenses • Dispersion of users (for example, lab vs. several classrooms) • Hard drive requirements Whether to provide access over the network or on stand-alone computers also depends on the type of software content. For example: • Is the software text-based reference resources or multimedia, interactive programs? • Does the software consist of programs that run under a management system or applications that do not track student progress?

28

🗁 For further information about deciding whether to load software on stand-alone desktop computers or on a network server, see the *North Carolina School Technology Plan:Technical Recommendations and Standards, Section V. Comparison of Model Configurations* at http://tps.dpi.state.nc.us/techstandard/ 5_comparison.html

Procedures for loading software

Loading software onto a computer connected to a local area network may affect both the computer and network functioning. Procedures should be in place to ensure changes made to a stand-alone computer follow school network guidelines based on system-level policies.

🗁 For additional information, see the *North Carolina Educational Technology Plan, Policy Section: Statewide Recommendations* at http://tps.dpi.state.nc.us/techplan2000/

Access to online resources
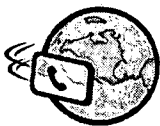
"Today's educational environment fosters the need for global connectivity that enriches the learning environment by allowing teachers and students to access leading libraries, peruse remote information sources (databases), converse with experts in a variety of fields, and complete research using primary sources. The vision of technology resources for North Carolina's K-12 educational community is access to these resources at the point of need, whether it is in the media center, the classroom, the principal's office, or the home."

(*North Carolina Educational Technology Plan 2001-2005*, http://tps.dpi.state.nc.us/techplan2000)

Technology plays a vital role in providing equitable access to a variety of resources. The goal of access to online resources (the Internet) is to help students become self-directed lifelong learners, complex thinkers, quality producers, collaborative workers, and community contributors. The responsible and ethical use of online resources is a significant issue surrounding access for administrators, teachers, and students.

Online school
library media
catalogs
(media
automation)

All school-owned materials should be organized and arranged so students and teachers can obtain any item quickly and easily. Ease of access requires that all resources in the school be readily available through an online catalog accessible from school and remotely (in home).

Organization of the catalog includes classifying and providing entries for all materials that form the basis of the Online Public Access Catalog (OPAC). Entries in the catalog should follow standardized procedures for machine-readable cataloging (MARC). MARC records can be obtained from a variety of vendors and from the Internet sites such as the *Library of Congress* (*http://lcWeb.loc.gov/marc*) or Florida's *Sun Link* (*http://www.sunlink.ucf.edu*).

School systems using MARC may implement union catalogs that represent the collections found in every school. This can foster cooperation with other libraries through interlibrary loan and resource sharing. Also, those who are new to automation may benefit from the checklist on the next page.

30

☑

Getting Started with Media Automation

- Define the district or schools' educational objectives.
- Locate resources describing elements of library automation.
- Gather support and form a planning committee.
- Prepare the library media center's collection, including weeding and inventory.

- Select an online catalog and circulation system.
- Select a retrospective conversion process or vendor.
- Convert the cataloging information to MARC records.
- Bar-code library resources.

- Select and purchase hardware for the local library Local Area Network (LAN).
- Select and purchase network operating and communications software.

- Determine layout of site.
- Select and purchase/construct library furniture.
- Plan for and install network cable, adequate electric supply, and telecommunication lines.
- Install hardware, networking software, and the automation system.
- Consider climate control and a security system.

- Purchase and distribute patron cards with barcodes.
- Receive training to use and maintain the online catalog and circulation system.
- Create an ongoing user group for sharing and training.
- Design ongoing evaluation, upgrading, and extension of system.

(Salmon, et al. 1996, 195-8)

31

● Planning and Designing Facilities for Learning

People and Responsibilities

Planning committee
representation

Designing a new or renovated facility is not a task for one person. Coordinating the ideas and expertise of a variety of individuals ensures that all aspects of media and technology are evaluated properly and incorporated into the facility design. The personnel below should be represented on the committee.

Although it may not be possible for all committee members to attend every planning session, each member should be kept informed and allowed to have input throughout the planning process.

Committee Representation

- Media coordinator
- Technology facilitator
- Teacher
- Student
- Member of the school board
- System-level construction supervisor
- System-level media supervisor
- System-level technology supervisor

32

Leadership
for planning

Media and technology staff from both system and school levels should be represented on the Planning Committee for Media and Technology Facilities. Here are a few guidelines:

- For the renovation or construction of a media center, a building-level media coordinator or system-level media supervisor should provide leadership.
- For technology renovations or new technology facilities, a building-level technology facilitator or system-level technology supervisor should provide leadership.
- The chair or leader of the Planning Committee for Media and Technology Facilities should be represented on the overall facility planning committee and serve as liaison with the architect, the building project coordinator, the finance department, and others involved in the building or renovation process.

Planning consultants

In addition to representatives from within the school system, outside consultants may be involved in the planning process. Assistance from the Instructional Technologies Division, School Planning, and other Department of Public Instruction areas can be requested at various stages of the project. In some cases, paid consultants may be employed. If this is needed, job qualifications and experience should be verified.

To be useful, an outside consultant should:
- Have a working knowledge of the school and system level priorities.
- Be able to offer unbiased opinions, supplement the knowledge base of the Planning Committee.
- Have expertise in overall facility design and/or a specialty in the specific program area.

33

Responsibilities
of the committee

The Planning Committee has a critical role in determining the final outcome of the building project. The responsibilities commonly assigned to the Planning Committee include those below.

Committee Responsibilities

- Carry out the planning process.
- Write educational specifications.
- Review blueprints throughout the design process.
- Check utilities and special requirements.
- Select and determine arrangement of furniture.
- Determine priorities. This means listing those features that are absolutely essential to the program and features that can be modified or eliminated, if necessary.
- Make presentations and/or reports concerning the progress of the facility.

34

Responsibilities
of the
committee chair

Responsibilities of the chair or leader of the
Planning Committee include those below.

Committee Chair Responsibilities

- Establish an atmosphere that encourages
  visionary thinking.
- Define responsibilities for the committee
- Create a spirit of teamwork.
- Establish a timeline for completing tasks.
- Define terminology.
- Provide resources for background reading
  and study.
- Keep all committee members and other key
  people informed of the committee's
  progress.
- Coordinate the development of educational
  specifications for media and technology
  facilities.
- Communicate the educational specifications for
  media and technology facilities to the overall
  planning committee.
- Interpret the educational specifications
  developed by the Planning Committee for
  Media and Technology Facilities to the overall
  planning committee and other involved parties
  (architect, the building project coordinator, and
  the finance department).

Role of planning
committee
vs.
role of design
professionals

As the Planning Committee works together to design a
new facility or renovate an existing one, it is helpful to
remember who does what. The Planning Committee
develops function descriptions and requirements for
each space, but the actual design of the facility should
be left to design professionals.

Overall Facility Design:
Basic Considerations

The considerations below are fundamental to the design of
the overall facility.

Space Requirements and Design:
Fundamental Considerations

1. The mission/philosophy of the school and
   its media and technology program

2. The curriculum, teaching methods, and
   learning styles

3. The quantity and format of resources and
   equipment

4. The number and age range of the school
   population

5. Special needs of diverse student
   populations

Important Elements of Good Design

Read more about each of these important elements of design on the pages that follow.

Access

A highly accessible facility can maximize services and the use of all available resources.

Location

Factors such as convenience and proximity to instructional areas need to be balanced with security issues.

Facilities for Exceptional Children

Media and technology facilities must be barrier-free and able to accommodate wheelchairs and other assistive devices.

Aesthetics and Atmosphere

An inviting and aesthetically pleasing environment can be created with simple solutions.

Ergonomics

Ergonomics maximize use of a facility and can also prevent physical strain and injury.

Mechanics and Engineering

Mechanics and engineering dramatically affect the operations within the facility.

Safety

Many, but not all, safety issues are addressed by building codes.

Security

The goal of any approach to security should be to increase the availability and access to resources for all users.

37

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Access

Before intellectual access to information can occur,
physical access must be addressed. A highly
accessible facility can maximize services and the use
of all available resources.

Access to computer labs, media resources, and
distance learning equipment during the summer,
holidays, and after the traditional school day extends
the potential of the media and technology facilities for
students, staff, and the community. To make this
possible, these facilities must be:

- Located near an exit to the building.
- Accessible to the restrooms.
- Secure from other areas of the building not in use.
- Accessible to a public telephone.

Appropriate signs can greatly encourage independent
exploration as well as speed access to materials. Here
are some suggestions for designing signs into
facilities:

- Identify all areas with signs.
- Label individual shelves, cabinets, drawers, and
  other storage units.
- Label sections of workroom containing works-in-
  progress.
- Use signs for specific instructions in using various
  media and equipment.
- Provide signs that are clear, concise, large
  enough, and attractive.
- Use commercially made, computer-generated, or
  other homemade signs.

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Location

The media center should be:
- One level.
- Located on the ground floor.
- Convenient to instructional areas without being a thoroughfare.
- Convenient to an outside entrance, restrooms, public telephone, (and an elevator if two floors) for extended hours of operation and to expedite deliveries.
- Accessible to the administrative suite.
- Designed with possibilities for future expansion.

Technology facilities should be:
- Located near the media center if designated as general-purpose lab.
- Located near the applicable academic areas if dedicated.
- Easily secured with as few windows and doors as possible.
- Convenient to instructional areas without being a thoroughfare.
- Convenient to an outside entrance, restrooms, public telephone, (and an elevator if two floors) for extended hours of operation and deliveries.

Note
Factors such as convenience and proximity need to be balanced with security issues.

☑

Exceptional Children Facilities

In accordance with Public Law 101-476, Education of the Handicapped Act Amendments 1990 (revised from the P. L. 94-142), media and technology facilities must be barrier-free and able to accommodate wheelchairs and other assistive devices.

- Public Law 99-457 extends the provisions to 3-5 year olds in early intervention programs.
- Section 661 of the law refers to access to resources and the use of assistive devices.
- Section 504 of the Rehabilitation Act of 1973 concerns the civil rights of physically impaired individuals who are not instructional/mentally disabled.

📂For more information on this topic, see *Exceptional Children Facilities Planner, School Planning* at *http://www.schoolclearinghouse.org/*

☑

Aesthetics and Atmosphere

An inviting and aesthetically pleasing environment can be created with simple solutions that provide the following pleasing and useful characteristics:

- Display space
- Plants, terrariums or aquariums (Maintenance time and costs should be considered.)
- Cheerful decoration
- Inviting signage
- Artwork
- Aesthetic treatments (ceiling heights, color, textures and surfaces)

40

Page 32

Ergonomics

Ergonomics is related to aesthetics/atmosphere because it affects the personal comfort of the users and can prevent physical strain and injury. To maximize use of the facility, consider the following guidelines:

- Provide appropriately sized furnishings scaled for the intended users. One size does not fit all. Attempt to provide alternative sizes as needed, particularly in student work and study areas.

- Make sure that different but related activities can be performed without strain. For example: provide a computer keyboard that is within comfortable reach and a monitor that is at eye level. Computers and keyboards require lower-than-normal work surfaces. Attached peripherals should be within easy reach.

- Place screens, monitors, and other viewing devices at proper viewing angle and height. For example:
  - Desk monitors should be at eye level.
  - The most current office and school furnishings are designed to hold monitors below eye level and tilted at just the right angle for effortless viewing.
  - Wall or ceiling-mounted screens span a wider, less-obstructed view when placed at a comfortable angle to the audience.

41

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Mechanics and Engineering

Because adherence to building codes for mechanical features may not be sufficient to cover the program requirements, attention to the following details will dramatically affect the operations within the facility. These features should be outlined in the educational specifications and checked throughout the blueprint review process.

Lighting
- Master control switch should be located conveniently near main entrance.
- Separate lighting zones will allow darkening/dimming in specific areas while other areas remain lighted. Separate controls should be located within each zone.
- Natural light controls should be provided for all areas. Blinds, draperies, shades, or other applications are needed for all openings admitting natural light.

Acoustics
- Noisy activity areas such as the cafeteria, music rooms, theaters, dressing rooms, or the gym should not be adjacent to media and technology facilities.
- Acoustical treatments are needed to counter noise within and outside the facility: carpet, ceiling tiles, baffles, adequate space between areas, and wall treatments.

Climate
- Heating, ventilation, and air conditioning (HVAC) controls should be on separate switches from other sections of the school.
- Moisture and temperature control is needed to preserve sensitive audiovisual resources, computer software, photographic supplies, and equipment.
- HVAC systems should adequately control humidity during periods when the building is not occupied and the cooling loads are reduced.

Mechanics and Engineering (continued)

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Electrical

- Adequate electrical service should meet the needs of technical infrastructure that supports a variety of activities.
- Surge protection is needed for computers, peripherals, and communication lines.
- Adequate number of circuits is necessary to distribute electrical load in all areas, especially in production and computer areas.

Data, voice, and video infrastructure

- Telephone lines should be dedicated, isolated, or direct .
- Data lines should have appropriate bandwidth for the type of transmission: voice, data, or video.
- A distribution system is needed to transmit video signals throughout the school.
- Conveniently located outlets for communications equipment should be planned throughout the facility.

43

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Safety

Many safety issues are addressed by building codes; however, there are additional considerations that should be addressed when writing educational specifications or when selecting furnishings and equipment to ensure maximum safety and accessibility for all users of the facility.

- Adequately protect electrical outlets, especially floor outlets.
- Avoid pits and story wells because they are inflexible, hazardous, limit the ability to move equipment, and limit accessibility for physically impaired users.
- Avoid furnishings and design features that can cause tripping.
- Avoid furniture arrangements that may inhibit traffic patterns and be potentially hazardous.
- Make sure that edges for furnishings, built-ins, and other storage pieces are smooth and rounded.
- Plan for the appropriate management and bundling of electrical cables for computer and audiovisual equipment. For example, make use of trays, fasteners to secure items to table edges, conduits, and other devices that can prevent accidents.
- Provide safety straps for equipment on rolling carts.

44

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Security

The goal of any approach to security should be to increase the availability and access to resources for all users; therefore, attention to security as a preventive measure will eliminate the prospect of a restrictive environment. Some security features can be built into the structure if they are recognized in advance. A few are listed here:

- Limit the number of entrances/exits.
- Plan for adequate visual control throughout the facility.
- Request appropriate locks for doors and windows.
- Consider security system devices, where warranted.
- Locking storage units may be necessary for some media. Use them sparingly because they restrict access.
- Locate the circulation area near the entrance.
- Consider providing an outside "drop" for return of materials.

45

Design Considerations for Spaces within the Facility

School facilities should accommodate numerous functions related to the support of teaching and learning. Dynamic media and technology programs directly support instruction and require space for the diverse learning activities, resources, equipment, technical functions, and program services.

The intent is to construct new school facilities from the inside out and provide areas or rooms for specific activities—but budget constraints may prevent planners from allocating the square footage that is ideal for each function. Therefore, it is always a good idea to design spaces with dual or overlapping uses. Special attention to the interrelationships of the spaces is also essential to ensure efficiency and convenience for users and staff.

Below are considerations to use when allocating floor space for specific and multipurpose areas within a facility.

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Considerations for Meeting Space Requirements

Factors within a school include the following:

- Class size.
- Number of classes/groups to be served at the same time.
- Size of media and technology staff.
- Age and size of users.
- Amount and type of provisions needed for disabled users. (For example, housing special programs for physically impaired students requires additional space.)
- Degree to which spaces can serve multiple uses at different times.

46

Designing for
Growth and Development

While meeting present needs for the design and construction of new and/or renovated facilities, media and technology personnel should also anticipate potential facility requirements that will occur through growth and development of the program. Because construction occurs infrequently, careful planning by a team of committed individuals is essential to ensure that all current and future possibilities are considered.

Although budget constraints can threaten to limit square footage and/or amenities, the trend toward escalating costs indicates that larger square footage allowances and inclusion of enhancement features will have long-range, cost-efficient benefits.

According to Jussim and Vandergrift, in addition to fiscal concerns, the research into the effects of overcrowding on individuals indicates that human behavior is strongly influenced by the amount of personal space allotted each person. Freedom from overcrowded conditions, especially for disadvantaged children, will greatly improve their chances for successful learning experiences. Likewise, the productivity of adults is increased when they are able to temporarily define a comfortable amount of space with limited distractions when performing administrative tasks or planning activities.

(Jussim 1978, 8-9 and Vandergrift 1978, 12)

Designing for
the Infusion of Technology

The infusion of technology into the instructional program influences the design and renovation of media and technology facilities in order to accommodate school-wide networks and to allow access to information sources within the library media center, as well as outside the library media center, through networking and telecommunications. Computer labs, production facilities, and multipurpose classrooms adjacent to or incorporated within the library media center can increase opportunities for the use of newer technologies.

47

Designing for Expanded Hours and Use

Expanded hours of operation beyond the regular school day and year may be an outgrowth of programs that endeavor to meet the personal information needs of students and adults within the schools and the local community. To extend this opportunity, accessibility to the media and technology facilities from outside the school plant is a primary consideration.

Designing for Flexible Use

Facilities can contribute to or detract from the teaching and learning opportunities that are available to students and staff. The ability to access information through various media formats is essential. Although the diverse activities surrounding the acquisition and use of information require special facility considerations, the challenge to maintain building flexibility continues to be important when media and technology facilities are designed.

● Developing Educational Specifications

Details Matter

Educational specifications are developed to communicate the function and requirements of each space to the architects, designers, and engineers who are responsible for creating new or renovated facilities. Since educational specifications must communicate the function and requirements of each space to architects, designers, and engineers, it is essential that every effort be made to describe thoroughly each space and all the desired elements within it. This detailed description will become the foundation for all further work on the facility.

Five Preliminary Steps

Preliminary thought, work, and investigation are essential to the development of credible educational specifications that will translate into a functional facility design. Before writing educational specifications, the Planning Committee should complete the tasks below.

Before developing educational specifications:

1   Define the program.

2   Examine present facilities and needs.

3   Conduct thorough research.

4   Develop a vision.

5   Learn what good design means.

Steps that comprise each task are outlined on the checklists that follow.

☑

1. **Define the program.**

   - Study the school- and system-level plans for media and technology, curriculum guides and plans, and other related documents.
   - Consider future plans for restructuring programs.
   - Examine media and technology applications according to discipline and/or grade level.
   - Determine goals and objectives for students and staff related to media and technology.

2. **Examine present facilities and needs.**

   - Analyze use patterns to determine possible changes for the new or renovated facility.
   - Examine space and identify features to redesign, add, or keep.
   - Survey students and staff regarding media and technology needs.

3. **Conduct thorough research.**

   - Read professional literature on program and facilities.
   - Become acquainted with newer media and technology resources and their implications for facility design.
   - Visit schools with exemplary programs as well as newer facilities; discuss programs/facility features with media and technology personnel, students, teachers, and administrators.
   - Visit schools designed by the architect. Include the architect on these visits if possible.
   - Seek information from School Planning (DPI) and other school systems.

☑

4. **Develop a vision.**

    - Brainstorm functions of the program that could be offered through a state-of-the-art facility.
    - Be aware of program, curriculum, and technology trends for the near future.
    - Develop a well-reasoned picture of media and technology in the extended future.

5. **Learn what good design means.**

    - Study all topics in the previous section: *Planning and Designing Facilities for Learning*

Components of Educational Specifications

1 Discernible trends

2 Educational philosophy

3 Specific objectives

4 Teaching methodology

5 Main instructional areas

6 Peripheral areas

7 Spatial relationships

Additional details about each component
are provided on the next page.

📁 For more information about components of
educational specifications, refer to *North Carolina
Public School Facilities Guidelines* at
http://www.schoolclearinghouse.org/pubs/facguid.pdf.

Components of Educational Specifications

1, 2

Discernible trends
Major trends in the field of media and technology and how they relate to the curriculum and the facility

Educational philosophy
Direct and concise statements of beliefs

3, 4

Specific objectives
Observable and measurable objectives

Teaching methodology
Various ways students will be taught

5

Main instructional areas
Descriptors for main instructional areas include:

- Capacity. List maximum number of students/staff expected to use the area at one time.
- Student grouping. Identify group variations, including age ranges that may use the area.
- Activities. Describe the various activities that may occur in the area.
- Special environmental considerations. List lighting, acoustical, and mechanical requirements.
- Utilities required. List special utility requirements.

- Infrastructure required. List quantity and format of all materials, technology, and equipment to be used in the area.
- Storage space required. Describe all storage spaces and dimensions and indicate security needs if appropriate.
- Furniture required. List type, size, and quantity.
- Miscellaneous requirements. Anything not appropriate in another area.

6

Peripheral areas
Describe areas that relate to or support media and technology functions. Describe in as much detail as possible.

7

Spatial relationships
Describe relationships among areas within the library media facility and also how all media and technology facilities relate to other parts of the school.

53

● Educational Specifications for School Media/Technology Spaces

The charts that follow contain recommendations for infusing media and technology spaces *throughout the school facility* to support teaching and learning.

Recommendations are made for the following:

- Classrooms
- Multimedia Computer Lab
- Distance Learning by Satellite
- Distance Learning via N.C. Information Highway
- Staff Offices
- Work Rooms
- Conference Areas
- Auditoriums, Cafeterias, and Gyms

SLMC

Important Note:
Recommendations specific to the school library media center are *not* outlined in this section. Look for them in the section that follows, where they can be quickly recognized by this icon (left).

Classrooms

Activities

Whole class, small group, and individual instruction; research; online remediation and instruction

Size

To support classroom technology, add 15–20 feet per computer to standard classroom space requirements.

Spatial Relationships

- Computer stations located in areas easily accessible to students and teachers
- Computer stations located away from window areas
- Monitors visible from all locations within the classroom to allow teachers to observe student utilization of technology
- Telephones located near teacher workstations
- Television located away from strong light sources and mounted from ceiling or wall
- Ceiling-mounted screen located away from strong light source and in location easily seen during instruction
- Floor-based electrical receptacles located conveniently to allow projection device(s) to be used without extension cords

Furniture/Equipment

☞ For additional information on hardware, refer to the *North Carolina Educational Technology Plan 2001-2005*, *http://tps.dpi.state.nc.us/techplan2000*

- Cabinets for secure storage of software and smaller technology devices
- Tables and chairs as needed to enhance instruction
- Ergonomically designed furniture
- Filing cabinets
- Clock
- Intercom
- Telephone
- Stand-alone tables for each multimedia computer and printer, or built-in counters designed to be used with technology devices
- At least one workstation designed for handicapped access
- One multimedia computer teacher workstation w/200-volt UPS with surge suppression
- Four multimedia computers with peripherals and at least one inkjet or better printer
- A minimum of eight data ports with adequate electrical outlets in locations convenient to computers and printer
- One projection device (data projector, overhead projector, etc.)
- One multimedia center for every 5 classrooms with 200-volt UPS with surge suppression and a digital camera and scanner
- Appropriate technology for course content (manipulatives, probeware, midis, CADware, etc.)
- Assistive/adaptive devices to meet student/teacher needs
- Television with hardware needed to provide video-on-demand access and connectivity to at least one computer

55

Multimedia Computer Labs

The multimedia computer lab provides opportunities for whole-class instruction and activities as well as independent use. A multimedia computer lab must be large enough to include student stations, a teacher station, work areas, and storage space. Forty square feet should be allowed per workstation, resulting in 1200 square-foot minimum to accommodate a typical thirty-student class.

📂 For additional information, refer to *IMPACT Online* at *http://www.ncwiseowl.org/impact.htm*

Activities
Word processing, data management, desktop publishing, computer-assisted instruction, presentations and multimedia

Size
Suggested minimum for K-12: 40 sq. ft. per workstation. For example, 1200 sq. ft. is the recommended minimum for a class of 30 students, plus additional space for instruction and storage. Size varies depending on student population and needs.

Spatial Relationships
Accessible to classrooms and media center. If managed by media coordinator, direct physical and visual access from the media center is necessary.

Furniture/Equipment

- Ergonomically sound and age-appropriate furniture
- White board
- Tables or counters
- Chairs
- Storage units for software and supplies
- Bookshelves
- Telephone/clock
- Sufficient networked multimedia computers (to accommodate the largest class)
- One surge protector per computer
- Teacher workstation with 200-volt UPS with surge suppression
- Assistive/adaptive devices as needed
- Inkjet or better printer(s)
- Flatbed scanner
- Overhead projector
- Screen
- Multimedia data/video projection device
- TV/monitor
- Adequate electrical outlets

Distance Learning by Satellite

Distance learning is the acquisition of knowledge and skills through mediated information and instruction. A variety of technological options are available to the distance educator such as voice, video, and data. Effective distance learning begins with careful planning and a focused understanding of course requirements and student needs. Once the elements are understood, appropriate technology can be selected.

📂 For additional information, refer to *IMPACT Online* at *http://www.ncwiseowl.org/impact.htm*

Activities

Viewing and participating in instructional or staff development programming (one-way video); interacting with the presenter via telephone

Instruction is conducted as in standard classrooms. Staff development activities are provided for professional staff.

Size

Should accommodate a minimum of 16 students with facilitator desk, file cabinet, and other equipment.

Spatial Relationships

Ideally this will be a regular classroom and located near other classrooms and the satellite feed head-end. There may be security considerations for access after regular school hours.

Furniture/Equipment

- Desks and/or tables and chairs for each student
- White boards
- Standard telephone line
- Downlink equipment (TV monitor, VCR, CLI)
- Multimedia computer with Internet connection and surge protector
- Secure standard storage for resources
- Adequate electrical outlets

57

Distance Learning via N.C. Information Highway

Activities

Viewing and participating interactively in instruction, staff development, or ad hoc meetings (two-way video, two-way audio). This room could also be used for Distance Learning by Satellite if the downlink equipment, telephone, and computer with Internet connection are provided.

Size

Should accommodate a minimum of 25 students with facilitator desk, file cabinet, and other equipment.

Spatial Relationships

Ideally, this classroom will be located near other classrooms. There may be security considerations for access after regular school hours. It is advisable to locate the room close to the head-end for the fiber optics cable.

Furniture/Equipment

- Tables and chairs for each student
- Microphones for every 2 students
- 3 video cameras
- At least 3 large monitors and 3 small control monitors
- Control panel
- Computer with Internet connection and surge protector
- Codec and other equipment to control and connect to the North Carolina Information Highway network
- Adequate electrical outlets

Important: The specialized equipment and facilities required for an Information Highway room must be installed or constructed by a state-approved company due to the complex wiring and audio/video standards that must be met.

Staff Offices

Activities
Lesson plan development, one-on-one conferences, small group conferences, research, collaborative efforts with other staff members

Size
Varies with number of staff occupying the space and activities to be undertaken; should be large enough to accommodate personnel, technology hardware, storage of personal items, and needed workspace.

Spatial Relationships
Proximity to instructional areas

Furniture/Equipment

- Desk(s) and chair(s)
- Filing cabinet(s)
- Table
- Telephone(s)
- Multimedia computer(s) and peripherals (including flatbed scanner)
- One 200-volt UPS with surge suppression for every administrative computer
- One data port per computer and printer
- TV monitor
- Assistive/adaptive devices as needed
- Adequate climate control
- Adequate electrical outlets

Conference Areas

Activities
One-on-one conferences, small group conferences, research, collaborative efforts with other staff members and students

Size
Varies with number of staff occupying the space and activities to be undertaken

Spatial Relationships
Proximity to instructional areas

Furniture/Equipment
- Table and chairs
- Telephone
- One data port
- Adequate climate control
- Adequate electrical outlets

59

Workrooms

Activities
- Photocopying
- Producing instructional materials
- Storing supplies
- Laminating
- Computing
- Collaborative planning (if no other space is available)

Size
Varies with number of staff occupying the space and activities to be undertaken

Spatial Relationships
Proximity to instructional areas

Furniture/Equipment
- Table and chairs
- Telephone
- One data port
- One multimedia computer with 200-volt UPS with surge suppression
- Adequate climate control
- Adequate electrical outlets
- Surge protector

60

Auditoriums, Cafeterias, and Gymasiums

Activities
Large group interaction, assembly programs, meal preparation and serving

Size
Varies with activities to be undertaken

Spatial Relationships
Located conveniently within the school or on the school campus

Furniture/Equipment

- Tables and chairs
- Telephones
- Multimedia computers and peripherals where applicable
- One surge protector per computer
- One data port per computer and printer [data port near stage areas; data port(s) next to cash register(s); additional data ports located throughout the facilities for use during assemblies or group interactions]
- Adequate climate control
- Adequate electrical outlets

● Educational Specifications
for the School Library Media Center

SLMC	**Note:** The SLMC bar will appear on every page of this section to identify recommendations specific to the School library media center (as opposed to recommendations for media and technology areas throughout the school, outlined in the previous section).

Visualizing Use of Space: One Example

As shown in the example on the next page, media center facilities can include a variety of areas or rooms. In selecting the areas, each space must be justified by a close link to the program objectives that will be advanced by including these areas in the facility design.

Some Key Design Questions

In planning and designing the school library media center, many questions must be answered, including, but not limited to, these:

1. How many square feet does a school library media center need?
2. What are the needs and requirements for each area of the center?
3. What furniture and equipment are appropriate for the various areas and what specifications should be considered for each?
4. Where and how will furniture and equipment be stored?
5. What general technology infrastructure should guide purchasing and installation decisions?

Charts of Recommendations

The remainder of this section provides charts of recommendations for planning an effective multipurpose school library media center.

Classrooms

SLMC
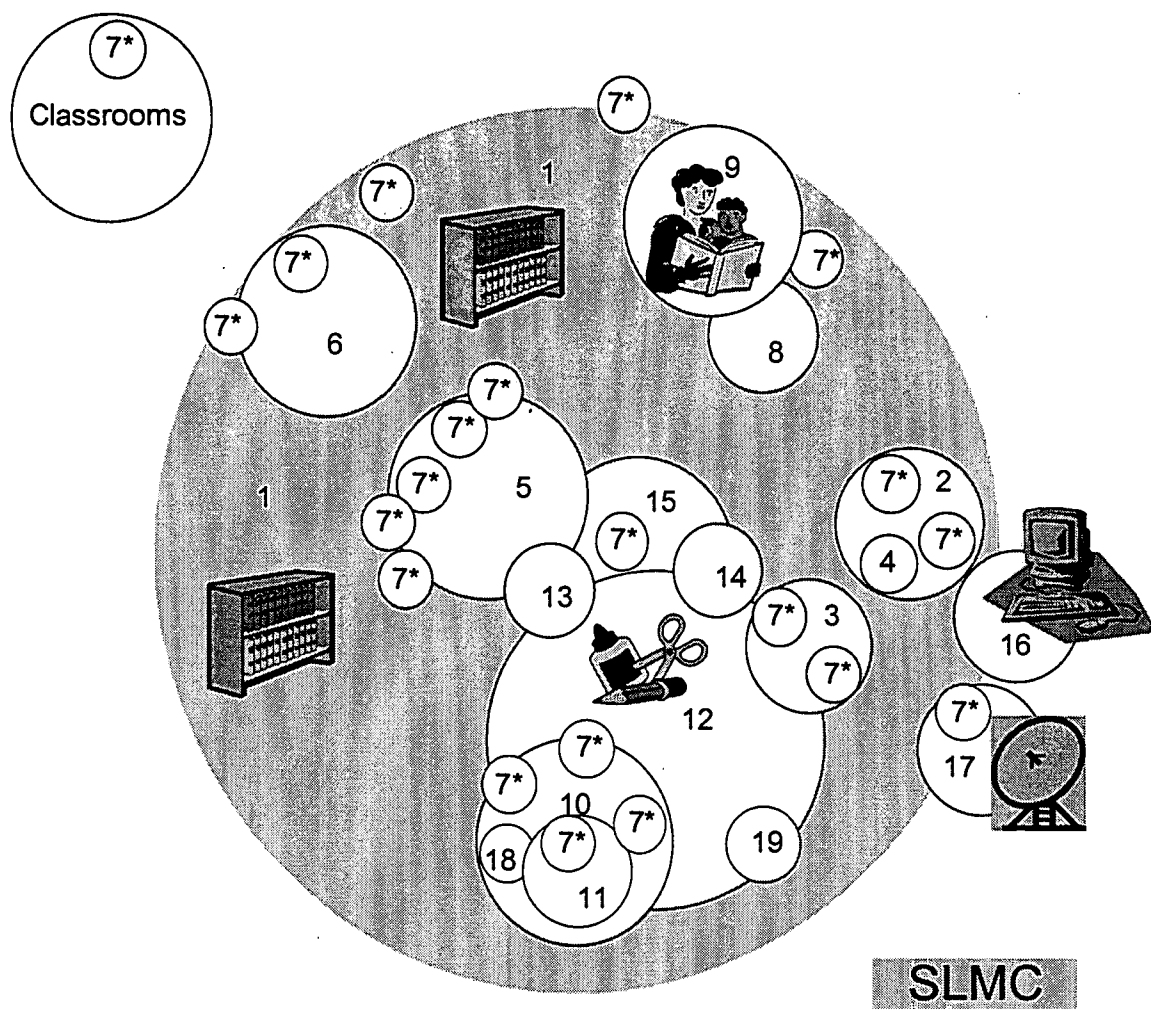
1	Collection	11	Equipment Storage, Distribution, and Maintenance
2	Circulation	12	Workroom
3	Administration	13	Periodical Storage**
4	Display and Exhibit	14	Professional Area
5	Reference	15	Small Group Activity
6	Large Group Instruction	16	Multimedia Computer Lab
7	Independent Work Areas*	17	Distance Learning
8	Informal Reading	18	Darkroom
9	Story Sharing	19	Head-end
10	Production Area		

*   Also serves as automated catalog access
**   Periodical storage may be reduced where a majority of back issues are available online or on CD-ROM.
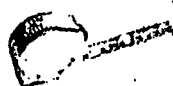
Minimum Square Footage for the School Library Media Center and Support Areas

|SLMC|

Meeting Recommended Minimums

All schools should have school library media centers no smaller than the recommended *minimum* square footage listed in the chart below. Since schools with **enrollments below 400** must offer the same scope and variety of resources as schools with higher student enrollments, their space requirements will be similar.

Minimum Recommended Size for School Library Media Centers	
From *North Carolina Public Schools Facilities Guidelines* (revised March 2000), developed by School Planning, NCDPI, available at *http://www.schooolclearinghouse.org/*	
Elementary Schools	At least 2800 sq. ft. + 1200 sq. ft. for support areas
Middle Schools	At least 3400 sq. ft. + 1800 sq. ft. for support areas
High Schools	At least 3600 sq. ft. + 2000 sq. ft. for support areas

Planning for More than 400 Students

Schools with more than 400 students should use guidelines in the chart below for additional space allotments.

Planning for More than 400 Students	
From *North Carolina Public Schools Facilities Guidelines* (revised March 2000), developed by School Planning, NCDPI, available at *http://www.schooolclearinghouse.org/*	
Elementary Schools	4-6 sq. ft. per student for the school library media center
Middle Schools	4-6 sq. ft. per student for the school library media center
High Schools	4-6 sq. ft. per student for the school library media center

64.

Support Areas

The size and types of various support spaces needed are dependent upon the size and grade level of the school. The charts that follow list some typical support areas and their recommended sizes, including recommended square footage for office, workroom, storage and video production areas.

Recommended Size for Typical Support Areas: Office, Workroom, and Storage	
From *North Carolina Public Schools Facilities Guidelines* (revised March 2000), developed by School Planning, NCDPI, available at *http://www.schooolclearinghouse.org/*	
Area	**Plan for:**
Media office and administration	200 sq. ft. + 50 sq. ft. for each additional staff member
Workroom	400-600 sq. ft.
Professional area	150 sq. ft.
Conference room, small office	150 sq. ft.
Equipment storage, distribution, and maintenance	175 sq. ft.
Periodical storage (if not CD ROM or other electronic storage medium)	150-200 sq. ft.

Recommended Size for Typical Support Areas Video Production Areas	
From *North Carolina Public Schools Facilities Guidelines* (revised March 2000), developed by School Planning, NCDPI, available at *http://www.schooolclearinghouse.org/*	
Area	**Plan for:**
Darkroom	150 sq. ft.
Video studio	400 sq. ft.
Control and editing	260 sq. ft.
Equipment storage	80 sq. ft.

Large Group Instruction

☑

Activities

Whole class instruction, study, reference, viewing, listening, reading, browsing, staff development programs, meetings, presentations

Size

Large enough to accommodate the largest class. (For each 3' x 5' table and 4–6 chairs: 143 sq. ft.) Additional space for teaching station that will accommodate use of audiovisual and multimedia computer-related equipment

Spatial Relationships

Near reference area and book stacks

Furniture/Equipment
- Tables and chairs
- White board
- Various audiovisual and multimedia computer-related equipment
- One 200-volt UPS with surge suppression for every teacher computer; one surge protector per student computer
- One networkable printer per10 computers
- Assistive/adaptive devices as needed
- Two TV/monitors
- Screen

Reference

☑

Activities

Reading, studying, finding information in various formats, accessing electronic and print indexes, accessing microform (as required), accessing back issues of periodicals, printing information, word processing, listening, viewing, photocopying

Size

Varies with student population, grade levels, and size of collection

Spatial Relationships

Accessible from administrative and circulation areas; ideally located near main entrance

Furniture/Equipment
- Tables and chairs
- Shelves
- Filing cabinets
- Carrels or individual work stations
- Specialized storage formats
- Copy machine
- Networked multimedia computers with peripherals - for research and online public access catalog (OPAC)
- One surge protector per computer
- Assistive/adaptive devices as needed
- Inkjet or better printers
- Laser disc players (as required)
- Cassette players
- Microform reader (as required)

Story Sharing

Activities

- Elementary: Storytelling, individual reading, reading/presenting to groups, puppetry, teaching, role-playing or acting, listening, viewing, housing everybody/picture books
- Middle and High School: Booktalking to literature discussion groups, informal reading (See *Informal Reading* section)

Size

- Elementary: Open floor space for seating a class of 30 (approximately 6 to 9 sq. ft. of open space per student or approximately 180 to 270 total sq. ft.)
- Middle and High School: Informal reading space is used for this purpose

Spatial Relationships

- Elementary: Away from heavy traffic flow, near easy picture books
- Middle and High School: (See *Informal Reading* section)

Furniture/Equipment: Elementary

- Divided shelving for Everybody/picture books
- Rocking chair
- Stool
- Floor cushions
- Extra carpet padding
- Various audiovisual and multimedia computer equipment as needed
- Permanently-mounted white board
- Portable puppet theater
- Easel
- Flannel board

Furniture/Equipment: Middle

- Informal furniture

Independent Work Areas

Activities

Listening, viewing, computing, studying, reading

Size

Varies

Spatial Relationships

May be merged with other areas such as reference or conference

Furniture/Equipment

- Table (or carrels) and chairs for independent work
- Various audiovisual equipment as needed
- Multimedia computer with surge protector
- Assistive/adaptive devices as needed
- Inkjet or better printer per workstation
- Storage for software

67

Small Group Activity

Activities
Consultations; meetings; small group reference and study; independent study, listening, viewing, and computing

Size
Minimum 150 sq. ft.

Spatial Relationships
Accessible with visual control from reference area

☑

Furniture/Equipment
- Table and chairs
- Multimedia computers with one surge protector per computer
- Inkjet or better printer per workstation
- Assistive/adaptive devices as needed
- Screen
- White board

Informal Reading

Activities
Reading; browsing

Size
Varies

Spatial Relationships
Away from quiet study areas

☑

Furniture/Equipment
- Comfortable informal seating
- Tables that complement seating arrangement
- Magazine and newspaper display unit/shelving

Production

Various production facilities may be located throughout the building with specific functions serving the adjacent areas. The production facilities are intended to support the media and technology program as it serves the school.

Activities

☑

Making transparencies, books, book jackets, videotapes, audiotapes, multimedia computer graphics, graphics, posters, signs, bulletin board materials, photographs, enlargements of pictures or maps; duplicating; laminating; producing video programs (such as news shows); transmitting live audio and video to classrooms.

Size

Varies with intended uses, 400-600 sq. ft.

Spatial Relationships

Adjacent to or incorporated in the workroom, accessible from administrative area; audio/video production area can be a portion of larger production space

Furniture/Equipment

- Water and stain-resistant tables and countertops
- Chairs
- Sink with warm and cold water
- Storage units, drawers, cabinets
- Legal-sized filing cabinets
- Flat files for oversized storage
- Bookbinding equipment

Furniture/Equipment (continued)

- Video camera/recorder
- Curtain or backdrop
- Tripod dolly
- Video editing equipment
- Video graphics generating equipment
- Tape recorder with synchronizer
- Slide projector
- Sound mixer
- Microphones
- Networked multimedia computer and peripherals
- One surge protector per computer
- Assistive/adaptive devices as needed
- Laserdisc player
- LCD panel or data/video projector
- Digital camera with tripod
- Camera copy stand
- Lettering devices
- Light table or screen
- Copy machine
- Laminator
- Dry mount press
- Tacking iron
- Overhead projector
- Opaque projector

Darkroom

Activities

Developing, enlarging, printing, drying negatives and prints, mounting slides

Size

Minimum 150 sq. ft.

Spatial Relationships

Accessible from workroom and production area

Furniture/Equipment
- Baseboard cabinets with countertops
- 4' wide shallow sink with warm and cold water
- Light-tight door
- Safe lights
- Timers
- Plastic trays
- Enlarger magnifier
- Paper cutter
- Plastic chemical containers
- Liquid thermometers
- Funnels
- Tongs
- Film developing tanks
- Stools

Periodical Storage

Periodicals are becoming increasingly more available in online format, requiring less storage space for back issues of hard copies. However, students will continue to need and prefer to have access to hard copies of certain magazines for leisure reading and browsing. For this reason, storage space for the back issues of periodicals should not be completely eliminated.

Activities

Storage, management, and retrieval of back issues of print magazines and newspapers

Size

Varies with size of school and grade levels; 150-250 sq. ft. (may be reduced when a majority of back issues are available online or on CD-ROM)

Spatial Relationships

Accessible to reference area, copy machine, workroom, circulation, periodical indexes, and independent work areas with networked multimedia computer/printer, microform reader

Furniture/Equipment
- Adjustable shelving
- Magazine files
- Microform storage units (as required)
- Kick-step stool
- Table
- Counter or other furniture for periodical processing
- Computer hardware and microform return (as required)

70

Administration and Planning

Activities

Administrative tasks, consultation, collaborative program planning, management functions, and visual control of other areas.

Size

Minimum 200 sq. ft. plus 50 sq. ft. for each additional staff person

Spatial Relationships

Easily accessible to circulation, reference, workroom

Furniture/Equipment

- Storage for files, books, and supplies
- Locked storage for coats and personal items
- Desks, tables, and chairs
- Networked multimedia computer with 200-Volt UPS with surge suppression
- Assistive/adaptive devices as needed
- Inkjet or better printer
- Flat-bed scanner and other peripherals for administrative uses
- Telephone

Circulation

Activities

Checking out and returning materials, processing overdues, general inquiries, visual supervision of facility

Size

Varies, but should be limited to bare minimum needed for activities

Spatial Relationships

Easily accessible to administrative area, workroom

Furniture/Equipment

- Work surfaces at appropriate height for students
- Seating for 1 or 2 personnel
- Two multimedia computers with barcode readers (one computer for student checkout and one computer for media coordinator access)
- One surge protector per computer
- Printer
- Storage for personal items of student workers and supplies
- Files for patron barcode cards
- Security system for theft prevention (secondary only)
- Clock
- Telephone

71

Automated Catalog

Activities
Searching the index to the collection, printing bibliographies

Size
Varies with furniture and equipment needed to support the collection and serve the school population

Spatial Relationships
Easily accessible from reference stack areas, the main entrance, and from all networked computers in the school.

Furniture/Equipment
- Minimum of one networked computer station in the media center per 150 students with inkjet or better printer and printer stand
- One surge protector per computer
- Tables or counters (Note: furniture that requires standing to access the automated catalog may encourage faster use of the catalog)
- At least one station handicapped-accessible station

Professional Area

In some schools it may be advantageous to merge the school staff lounge area with the professional resources area. If so, the space allotment should be expanded. In addition, the space should be directly accessible to a hallway.

Activities
Storing professional materials, planning, previewing instructional materials, doing paperwork, computing

Size
Minimum 150 sq. ft. (allow 60 sq. ft. per person expected to use the space at one time)

Spatial Relationships
Accessible to workroom/production areas

Furniture/Equipment
- Table and chairs
- Leisure furniture
- Storage cabinets
- Sink
- Refrigerator
- Variety of audiovisual equipment
- Networked multimedia computer and peripherals
- 200-volt UPS with surge suppression
- Assistive/adaptive devices as needed
- Telephone
- Shelving
- One surge protector

72

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Parent Resource Area

The National Parent Teacher Association has recommended that every school have a parent resource area located somewhere on the campus. A logical location for this area would be the media center where relevant materials can be easily displayed and processed for circulation.

Activities
Previewing materials related to parenting and the role of parents in supporting learning at home

Size
Varies with size of media center and availability of space

Spatial Relationships
Proximity to circulation desk and professional area

Furniture/Equipment
- Shelving
- Table and chairs (optional)

Workroom

Activities
Selecting, ordering, receiving, mending, and processing media resources; photocopying; producing instructional materials; storing supplies; laminating; computing

Size
Varies with activities: approximately 400-600 sq. ft.

Spatial Relationships
Accessible to administration, equipment storage, and overlapping with production and professional areas; visual access to instructional areas

Furniture/Equipment
- Cabinets with countertops
- Sink with warm and cold water
- Tables and chairs
- Stools
- Telephone
- Multimedia computers and peripherals
- One surge protector per computer
- Assistive/adaptive devices as needed
- TV monitors
- VCR
- Laminator
- Paper cutter
- Copy machine
- Filing cabinets
- Clock
- Intercom

73

Display and Exhibit

Activities
Display projects or artifacts, display information

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Size
Varies

Spatial Relationships
Varies according to purpose

Furniture/Equipment
- Display cases
- Shelves
- Bulletin boards
- Tables

Equipment Storage, Distribution, and Maintenance

Activities
Security and storage for back-up and specialized equipment, maintenance and circulation of audiovisual equipment

☑

Size
Minimum 175 sq. ft. (size varies with amount of equipment needing storage)

Spatial Relationships
Direct access to a hallway, access to workroom

Furniture/Equipment
- Shelving
- Storage bins
- Countertop or worktable
- Chair
- Filing cabinet

74

● Educational Specifications for Furniture, Shelving, and Built-ins

General Considerations

Furnishings are selected and arranged for efficient use and housing of all types of media. The facilities planning committee best determines the quantity of furnishing/shelving to purchase by calculating the housing requirements for the facility's collection, as well as the workspace requirements. A scaled furniture layout is also useful in determining furnishing/shelving needs. Below are general considerations when planning for storage and furniture needs.

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- Dimensions should be scaled to physical differences and special needs of users.
- Furniture requirements should be calculated accurately to meet program needs without over-estimating furniture needs.
- Placement of furniture should adhere to fire codes and other safety requirements.
- Flexibility in arrangement of furnishings should be considered (for example, island shelving with wheels).
- Changing resources and services may alter furniture requirements.

75

Guidelines for Shelving

Following are guidelines, standards, and formulas to
help you select the correct amount and type of shelving.

General Guidelines for Shelving

1. Shelving should be:
    *   Sturdy with adjustable shelves.
    *   Wood, wood laminate, or steel.
    *   Single-faced for perimeter,
        double-faced for freestanding.
    *   Be divided shelving for elementary schools,
        especially for Everybody/picture books.
        Dividers should be 5" high, spaced 7"– 8"
        apart.

2. The width of shelves should be determined by the
    size of materials to be stored on shelves.

3. Quantities should be determined by the size of the
    collection and by anticipated growth of the
    collection.

4. Calculate linear feet of shelving needed based on
    educational specifications. The chart that follows
    provides some helpful formulas.

76
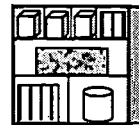
Formulas for Calculating Shelving Needs

Linear feet of storage =	Number of items to be stored	÷ (divided by)	Number of items per 3-ft.shelf

Shelving flexibility. Although some items can be stored on more narrow shelving than indicated, it is highly advisable to limit the number of shelf widths to be purchased in order to maximize flexibility.

Type of Shelving	Capacity per 3-foot shelf	Depth	Shelf Dividers
Standard books	30	10"– 12"	
Reference books	18-20	12"	
Everybody/picture books*	40-50	12"	5" high 7" to 8" apart
Periodicals**	34	16" slanting	
Videocassettes	25	12"– 16"	
CD-ROM/DVD *	10-25	16"	5" high 7" to 8" apart

* This type shelving is highly recommended for all of the general book collection for elementary schools.
** Specialized storage units may be used in lieu of standard shelving.

Number of ranges =	Linear feet	÷ (divided by)	Number of shelves per 3-ft. section

Converting Height to Number of Shelves		
42" high	=	2 or 3 shelves
48" high	=	3 shelves
60" high	=	4 shelves
66"–72" high	=	5 shelves
84" high	=	6 shelves

77

Maximum Heights for Different Types of Furniture and Shelving

When selecting furniture and shelving, make sure both are an appropriate height. Use the chart below to make sure furniture and shelving are not too high or low.

Furniture

Tables and Carrels		
Elementary	Middle	High
25" - 28"	26" - 30"	29" - 30"
Chairs/Other Seating		
14" - 17"	16" - 18"	18"

Shelving

Perimeter Shelving (maximum heights)		
Elementary	Middle	High
60"–66"	60"–66"	72"
Freestanding Shelving		
48"	48"	48"

More Helpful Tips
about Furniture and Shelving

Tables and carrels
- Standard 3-ft. x 5-ft. tables seat 4 comfortably with sufficient workspace.
- Standard 4-ft. round tables provide less workspace than rectangles for similar floor space.
- Workspace heights vary with activities (reading, writing, viewing, computing) and size of users.
- Multimedia computer tables should allow a working surface that is 36–40 in. wide and have lower work surface for comfortable keyboarding with minimum of 30-in. clearance under the table.
- Carrels should be equipped with electrical outlets for maximum flexibility.
- Wheelchairs require a minimum height of 28 in. between floor and bottom of table or carrel.

Tips about chairs and other seating
- Use sled-type chairs for carpeted floors.
- Chairs with curved backs are more comfortable.
- Make sure seating is scaled at the appropriate height for users and is correctly scaled and positioned in relationship to work surfaces.
- For professional staff, use rolling, upholstered chairs with pneumatic and mechanical adjustment devices.
- Upholstered furniture (sofas, love seats, individual chairs) with backs, scaled to users, should be used for informal seating for all grade levels.

Tips about equipment storage
Store equipment on shelves that are:
- Metal, wood, or wood laminate.
- Adjustable, built-in, or moveable.
- Sturdy enough to hold heavy pieces without bending.
Note: Rolling carts also can be used for some storage.

Tips about built-ins
- Because built-in units lack flexibility, it is important that they be designed for the intended functions and checked throughout the blueprint review process.
- Built-in storage units are generally included in the standard contract and are usually more cost efficient than adding storage units after construction.

79

Tips about
other furniture

- Automated catalog
  Work surfaces are needed to accommodate users who are standing, seated, or in wheelchairs.

- Built-in units, tables, carrels, or counters should have adequate space for computers, peripherals, inkjet or better printers, and paper. They will also need space and devices to manage power cords and connecting cables. There should be a minimum of 1 workstation per 100 students.

- Circulation Desk
  Limit furniture to absolute necessities (a computer and peripherals, CD-ROM drive, barcode reader, and inkjet or better printer) and scale the surface height to the size of users.

- Filing Cabinets for administration may be legal sized, vertical or lateral, with or without hanging files.

- Flat Files for storing oversized print materials (such as prints, bulletin board materials, and posters) need to be 40"H x 30"W x 3"–5" deep.

- Information File with legal-sized filing cabinets with hanging folders, either vertical or lateral may be needed. Open, hanging lateral files may also be used.

- Specialized alternatives to shelving:
  Check library supply catalogs and furniture manufacturers for customized shelving for items such as:
  - Audiocassette recordings
  - CD-ROM/DVD
  - Microforms
  - Paperback books
  - Periodicals
  - Slides
  - Videocassettes

80

● General Technology Infrastructure for Instruction

Network Server Head-End Area

Activities	Houses the building's computer network services, telephone system infrastructure, reception, and distribution equipment for video/television programming.
Size	450–800 sq. ft. with adequate space for all equipment and personnel.
Spatial relationships	Centrally located in a well-ventilated, climate-controlled environment (with a separate thermostat). Requires adequate electrical service, lighting, and security.

☑

Furniture/Equipment

- Wire racks
- Cabling or wireless devices
- Servers and connectivity (hubs, routers, and switches)
- Video distribution system
- Telephone switching panel
- Desk
- Multimedia computer with 200-volt UPS with surge suppression and printer
- Telephone
- Storage space
- Surge protector

81

Satellite Wiring Closet Area

Activities | Houses computer network (distribution and connectivity hardware as well as wiring).

Size | 15–120 sq. ft. with adequate space for all equipment and personnel.

Spatial relationships | Distributed throughout the campus as needed to support network services. Room should be well ventilated and have adequate electrical service, lighting, and security.

☑

Furniture/Equipment

- Wire racks
- Cabling or wireless devices
- Hubs, routers, and switches
- One surge protector

82

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Program Administration

- Planning the Program
- Being the Change Agent
- Advisory Committee Membership and Responsibilities
- Staffing the Program
- Budgeting for the Program
- Creating a Policies and Procedures Manual
- Building Support for Vision and Programs
- Issues and Myths
- Works Cited

84

● Planning the Program

Why Plan?

"Comprehensive, collaborative, and creative planning is essential to the library media program's long-term success. Plans are road maps for achieving program goals and objectives, and ongoing and dynamic planning is required to keep the library media program at the core of the school's learning community. Long-range, strategic plans must reflect the mission of the library media program, support the school's overall mission, and establish the program as critical to that mission."

(AASL and AECT 1998, 106-107)

Vision: the Key to Success

A crucial element of planning is the vision to bring about change. Vision can improve programs and services that affect student achievement and the instructional process by being directed toward changes in goals and objectives, instructional practices to improve student learning, and the use of new resources.

Visions should:

- Be inspiring.
- Be clear and challenging and about excellence.
- Make sense and stand the test of time.
- Be stable, but constantly challenged and changed.
- Be beacons, not controls.
- Be empowering.
- Prepare for the future but honor the past.
- Be lived in details not broad strokes.

(Peters 1987)

85

Short-term and
Long-term Planning

Planning and change

Planning must be based on:

- The overall missions for the school and various programs.
- Policies adopted by the local school board and the school itself.

Since both of these change over time, those involved in the planning process must:

- Be alert to changes in curriculum, program initiatives, and staff development requirements.
- Develop and continuously revise both short-term and long-term plans to meet the needs of the instructional program and to develop support for new efforts.

Short-term plans

Short-term plans generally are useful for:

- Efforts for approximately a year or less.
- Making minor changes.
- Solving problems.
- Covering smaller scale expenditures.

A short-term plan might be used for:

- Acquiring and using resources
  (such as books, software, and computer equipment).
- Re-locating areas of the collection.
- Developing procedures for work room use.

Long-term plans

Long-term plans generally:

- Provide vision and direction for a two to five year period.
- Are more appropriate for major changes or acquisitions that require large expenditures.

When developing long-term plans, it is advisable to establish time lines to represent various stages and due dates for completion.

Some examples of long-term plans are:

- Collection Development Plan.
- Building-level Technology Plan.
- School Improvement Plan.
- Facilities Plan for new or renovated facilities.

● Being the Change Agent

What is a change agent?	"Being a change agent or an instructional leader means not being content with the status quo, it requires personal commitment and hard work, it goes far beyond the requirements of the job...We have a dream or vision of what can be, perhaps a passion for excellence, and we have acted on it." (Brown 1998, 70-71)
Who is responsible for being an agent of change?	Once a concept for the future has been envisioned and outlined through a well-designed process, it remains the responsibility of the instructional technology facilitator and school library media coordinator to act as change agents by providing leadership and by being proactive in directing and overseeing the change process. In this way, they become catalysts for educational reform.
How do you fulfill this role?	"If you want to fulfill this role, you will need to be lifelong learners, to constantly seek new answers and solutions to educational problems, to stay in touch with the public, the students, and your fellow teachers. You will need to keep faith in what you are doing, never losing sight of the value of what you have to offer. You will need to keep your vision simple, and you will need to learn to work with your fellow teachers in true partnership, treating them with a sense of dignity and respect." (Brown 1998, 70-71)

87

● Advisory Committee Membership and Responsibilities

Planning is most effective when those responsible for the instructional program are involved in:

- Designing the planning process.
- Implementing the planning process.
- Making decisions about the process.

Effective student-centered media and technology programs are based on careful planning by one or more building-level advisory committees. There may be a combined Media and Technology Advisory Committee OR two separate committees, one that is a Technology Advisory Committee and one that is a Media Advisory Committee.

Whether there is a combined committee or two separate committees, the committee(s) should include both the instructional technology facilitator and the school library media coordinator and be chaired by one of these professionals.

The charts that follow outline the makeup and functions of the Advisory Committee(s) and the responsibilities of the committee chair and members.

Media and Technology Advisory Committee(s) participate fully in:

1
Planning
the process

2
Implementing
the process

3
Making decisions
about the process

Advisory Committee Membership

- Principal
- Instructional technology facilitator
- School library media coordinator
- Representative from each grade level or department
- Representative from special areas
- Parent representative
- Student representative (at the middle and high school levels)
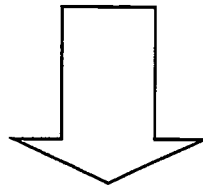
Advisory Committee Responsibilities

- Set goals and priorities
- Promote initiatives
- Communicate expectations
- Evaluate program effectiveness
- Solve problems
- Handle challenges to instructional materials

- Identify and recommend resources, hardware, and infrastructure. (This responsibility requires members to follow the *North Carolina Educational Technology Plan* and board-approved collection development plans to meet the curriculum and individual needs of students and staff.)

89
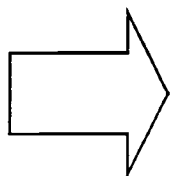
Responsibilities
of Committee Chair

- Attend grade level or departmental meetings to become knowledgeable about the school curriculum and instructional initiatives.

- Keep up-to-date on available resources, equipment, and trends.

- Plan and prepare for committee meetings and provide agendas.

- Provide the committee with relevant resources and information for consideration or discussion based on current standard selection tools.

- Follow through on any recommendations, directives, or decisions reached by the committee.

- Provide leadership in implementing and adapting plans and monitor planning processes and results.

The committee should be chaired by either the instructional technology facilitator or the school library media coordinator.
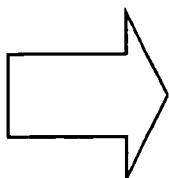
Responsibilities
of Individual Members

- Seek input from teachers and students.

- Participate in the decision-making and other work of the committee.

- Support the decisions and actions of the committee.

- Keep faculty informed of actions and recommendations of the committee.

- Assist the instructional technology facilitator and school library media coordinator with public relations efforts.

• Staffing the Program

System-level Personnel

Competent and well-trained personnel in media and technology must be in place at the district or school system level to provide vision, leadership, and technical assistance. Without adequate personnel to serve these three roles, integrating information technology and computer applications into the instructional program can be difficult.

The number of personnel employed will vary according to the size of the school system, the installed computer base, the level of access and utilization of technology, and the extent of Local Area Network (LAN) and Wide Area Network (WAN) development. However, each school system should work to ensure that basic personnel are in place. The list at right reflects positions and/or functions that are fundamental to establishing and supporting effective media and technology programs within a school system.

☐ For more information about technology staffing guidelines based on size of school system, school, and number of networked computers per school: refer to *IMPACT Online*, *http://www.ncwiseowl.org/impact.htm*.

☐ For more information about class specifications and job descriptions, refer to *IMPACT Online*, *http://www.ncwiseowl.org/impact.htm*

☑

**Recommended
System-level Staff**

- Technology Director/CTO
  To oversee administrative and educational programs
- Media Supervisor, certified
  To oversee school library media programs
- Technology Coordinator
  One for every 10 schools
- Computer technician(s)
- LAN engineer, if no WAN is present
- WAN engineer, if WAN is present
- SIMS/NC Wise Coordinator/LEA

Note: This list is based on recommended personnel for each school system or LEA in the *North Carolina Educational Technology Plan*, *http://tps.dpi.state.nc.us/*

Building-level Personnel

As educational institutions move into the 21st century and confront the challenges of the electronic information age, books and computer hardware alone do not create information-literate citizens. Schools must be transformed from facilities well stocked with print and electronic resources into facilities where students and staff can effectively use these materials to support and enhance the curriculum and contribute to student achievement. Only with a variety of skilled and trained personnel in both media and technology can this goal be achieved.

Staffing patterns at the building level depend upon the size of the school, facilities, amount and type of equipment, the curriculum, and special programs. However the basic level of qualified personnel listed in the chart on the next page can help ensure exemplary technology and media programs within a school.

Only with a **variety** of **skilled** and **trained** personnel in **both** media and technology can schools effectively use resources to:

☆ Support and enhance the curriculum.

☆ Contribute to student achievement.

92

☑

**Recommended Building-Level
Media and Technology Personnel**

Note: Large schools will need more media and technology
personnel to adequately serve a large, diverse student population.

- School library media coordinator(s),
  Full-time with appropriate license or certification.

- Instructional technology facilitator,
  full-time, with appropriate license or certification.

- School library media assistant, full-time.

- Technology assistant, full-time.

- SIMS/NC WISE data manager/school

📁 For more information about the above positions, refer to *IMPACT Online,*
http://www.ncwiseowl.org/impact.htm.

93

Additional
positions

Qualified staff also includes a number of paraprofessionals who are appropriately prepared to perform clerical and technical duties. In recent years, many new positions have been added to schools to accommodate the influx of technology into the classrooms, computer laboratories, technology-based information services on the school local area network, distance learning, and network management. These positions include but are not limited to those in the box below. Following are brief descriptions of these positions and responsibilities they might be assigned.

**Additional Building-level
Media and Technology Positions**

- Distance Learning Facilitator

- Computer Laboratory Technical Assistant

- Adult Volunteers

- Pre-Service Intern

- Student Media And Technology Assistants

- SWAT Team (Students Working To Advance Technology)

- Teacher Substitutes

📁 For more information about the above positions, see *IMPACT Online, http://www.ncwiseowl.org/impact.htm*

94

● Budgeting for the Program

Some Facts about Budgets and Funding

Does funding make a difference?

"A variety of research studies indicate that funding for school library media center resources has direct impact upon student learning, especially upon reading and writing test scores. (Lance, 1992/1999) The economic value of well-equipped, flexibly-accessed school library media centers has been validated by The Places Rated Almanac (1998) and School Match. (NPR, 1992)."

(North Carolina Educational Technology Plan 2001-2005, http://tps.dpi.state.nc.us/techplan2000)

Does continuous funding help?

"The most effective implementation of learning and instructional management technologies occurs when the funding program is continuous over a multiyear period. Continuous funding facilitates the development of high-quality, long-range local plans and allows for the deployment of resources to be coordinated with staff development and infrastructure improvement. Funding strategies and acquisition activities must be well-planned, organized, and coordinated."

(North Carolina Educational Technology Plan 2001-2005, http://tps.dpi.state.nc.us/techplan2000)

95

Developing an Effective Budget

The budget
cycle never
stops.

As the financial component of program planning,
budgeting should begin with the overall goals of a
school's instructional program—and these goals should
be reflected in the budget priorities and details.

Effective budget development is a continuous cyclical
process. Wise budget planners *continuously* complete the
cycle of steps shown on the next page.

1
Establish the plan,
expressed as goals
and objectives.

2
Determine specifics
of how much money
is needed and how it
will be spent.

**The Budget Cycle
Never Stops**

3
Identify sources
of revenue.

4
Assess if allocated
funds met goals
and objectives.

5
Revise plans or develop new
plan based on assessment.
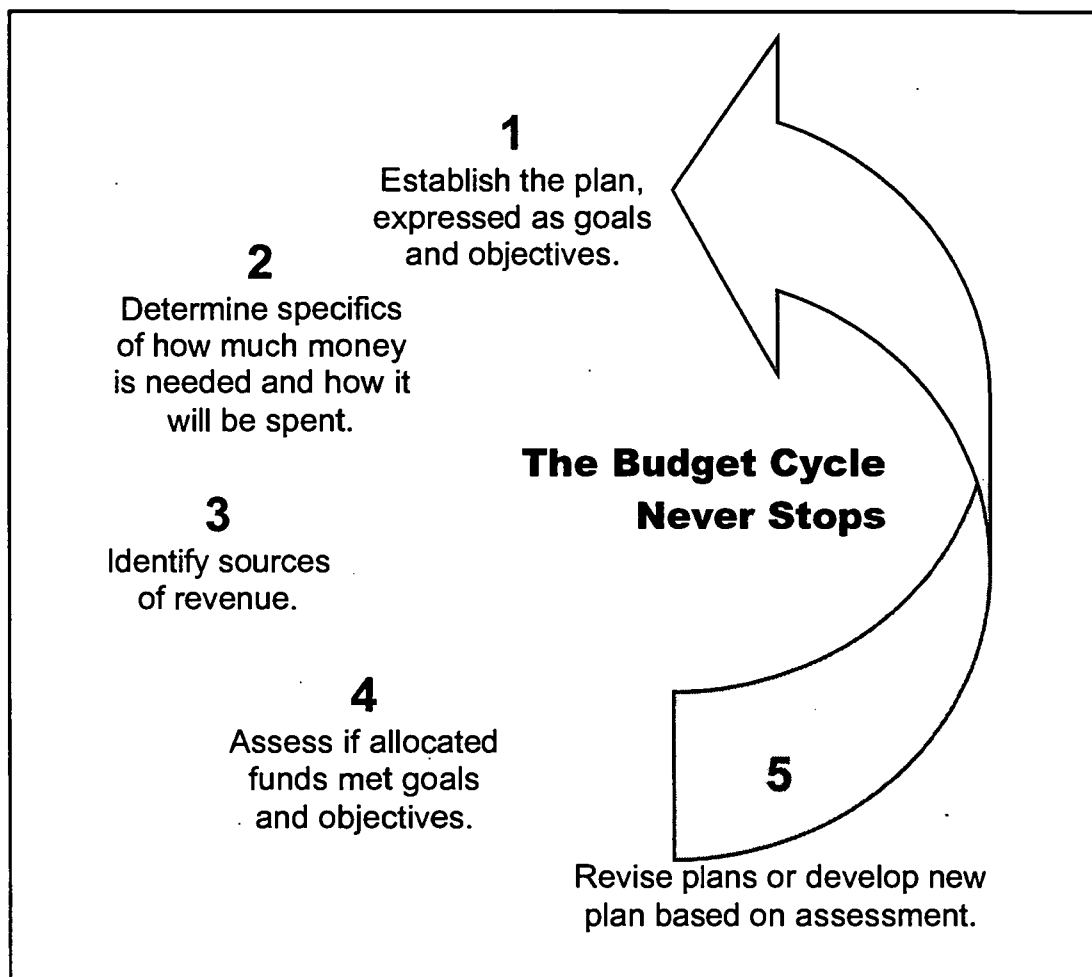
Budgeting is a collaborative effort.

The budget needs the support of teachers, administrators, students, and the community. Acting in their leadership roles, the instructional technology facilitator and the school library media coordinator seek the support of these groups and use school and community public relations strategies to:

- Ensure that budget requests are presented and considered within the appropriate context of program goals and objectives.

- Heighten awareness of the need for a wide variety of up-to-date resources and infrastructure to extend and enrich learning opportunities.

The budget process is implemented by building-level site-based management teams.

The budget process in North Carolina schools is implemented at the building level by site-based management teams whose members:

- Discuss the needs of the entire school program.
- Set overall goals and objectives.
- Work with grade level teams and departments in developing budget needs lists.
- Generate a priority list for expenditures.

Building-level school library media coordinators and instructional technology facilitators:

- Coordinate the efforts of the Media and Technology Advisory Committee.
- Advocate for adequate funding for media and technology programs by making budget recommendations that reflect the components shown on the next page.

97

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What Budgets Should Reflect

1. The overall mission of the school
2. Long-range and short-range goals and objectives of the school
3. Assessments of specific needs
4. Teaching methodologies and student learning styles
5. Strengths and weaknesses of existing informational and instructional resources
6. Regional and state accreditation standards
7. State and national guidelines and standards (including those developed by National Council of Teachers of Mathematics, National Science Teacher Association, American Association of School Librarians, Association for Educational Communications and Technology, etc.)
8. Priorities set by the Advisory Committees in conjunction with teacher and student recommendations
9. Necessary cycle of replacement and updating of materials and equipment
10. Average cost of items
11. Total cost of ownership (TCO)

98

Primary Sources of Funding

- Local – funds allocated for each school determined by the local school board.
- State – funds allocated for current operating expenses for each LEA; funds allocated by the legislature for implementation of the North Carolina Educational Technology Plan.
- Federal grants – funds allocated on the basis of an application process (For example: E-Rate, Technology Literacy Challenge Fund).

Other Sources of Funding

Technology and media professionals should be proactive in securing additional funding from the following sources:

- PTA/PTOs - contributions that may be allocated by an established formula or based on specific requests to support program initiatives.
- Local businesses and community organizations – allocations based on specific requests to support program initiatives.
- Grants – awards for special programs and purchases based on an application process.

$ Local Funds

$ State Funds

$ Federal Grants

$ PTA/PTOs

$ Local Businesses

$ Community Organizations

$ Grants

Writing Budget Proposals

To create new programs or expand services, instructional technology facilitators and school library media coordinators should develop funding proposals that include the components listed in the box.

"We as educators must do a better job of selling our programs to the public. Without public support, initiatives are much more difficult to begin and to maintain. It has been proven time and time again that the organization that projects its needs and accomplishments the most effectively usually receives the most support.

Collaboration, like communication, is essential in today's world. Working with other organizations to promote a common goal has a greater chance of success."

(*North Carolina Educational Technology Plan 2001-2005,* *http://tps.dpi.state.nc.us/techplan2000)*

☑

Basic Components of a Budget Proposal

1. Statement of needs

2. Goals and objectives

3. Plan of action

4. Description of local resources

5. Budget for requested resources

6. Evaluation component

● Creating a Policies and Procedures Manual

Four Steps to Improved Policies and Programs

Policies are powerful tools for shaping the quality of media and technology programs. To tap the power of policy, each school should take the four steps described below.

☑

Four Steps to Improved Policies and Programs

1

Be familiar with state and system-level policies and procedures that impact building-level media and technology programs.

2

Maintain a school policies and procedures manual for media and technology programs in the school library. The manual should address all facets of media and technology programs, including the policies and procedures discussed in this chapter.

3

Periodically review the policies and procedures manual to make sure the content is:

- Closely linked and consistent with state and system-level policies and procedures.
- Current and adequate to address all facets of the media and technology programs.

4

If needed, work with system-level personnel and use guidelines in this chapter to update, revise, or create policies and procedures.

101

Creating Policy:
A Few Do's and Don'ts

National and state guidelines, professional literature, and published research are primary sources for developing policy. When creating and writing policies for building-level media and technology programs, use the guidelines outlined below.

☑	☒
A Few Do's	**A Few Don'ts**
1. Check local board-adopted policies and procedures. Everything you create must be in accordance with those adopted by your local school board.	1. Never write a policy for an issue already covered by another policy.
2. Check existing building-level policies and procedures to see if policy and procedures for an issue are already stated in another policy.	2. Never write a policy when you can modify someone else's.
3. All policies should clearly state how students benefit.	(Johnson 1997)

102

Policy Topics That Schools Should Address

In rapidly changing learning environments, it is difficult, if not impossible, to anticipate all the policies and procedures a school might need. However, the policy topics listed below, and discussed in the sections that follow, are among the most important for schools to consider as they develop effective and comprehensive policies and procedures for media and technology programs.

**School Policy and Procedure:
An Overview of the Sections That Follow**

Materials and Equipment Selection Policy
Describes policy, procedures, criteria, and strategies that should guide schools in selecting and maintaining media and technology resources. Subtopics include:
- Policy Purpose and Components
- Guidelines for Selecting Materials
- Mapping the Collection
- Assessing the Collection
- Handling Challenges to the Collection
- Weeding the Collection

Accessibility Policy
Outlines important access issues that schools should address. Subtopics in this section include:
- Accessibility Issues and Characteristics
- Materials and Equipment Circulation
- Equipment Maintenance and Repair

Copyright Policy
Points to resources that can help schools understand and comply with copyright laws for a variety of media and technology formats.

Acceptable Use (AUP)
Explains the importance of having an AUP and recommends AUP components and strategies.

Web Site Development
Explains why policy and procedures are required for developing a school Web site and suggests what should be included in them.

Materials and Equipment Selection Policy

What is a Materials Selection Policy?

Because all staff and students use a vast range of materials that reach beyond the walls of the school, a materials and equipment selection policy is fundamental to the school's policies and procedures manual for media and technology programs.

Generally, a materials and equipment selection policy outlines guiding principles and strategies for:

- Developing a collection that supports teaching and learning.
- Maintaining the collection.
- Dealing with challenges to materials in the total instructional program.

The process and criteria for selecting materials should be guided by local policy that is based on a sound, system-level, written policy as specified in *Public School Law of North Carolina, General Statute 115C-98(B) and (C)*. State-recommended components for a Materials and Equipment Selection Policy are listed on the next page.

104

☑

Materials and Equipment Selection Policy: Components Suggested in North Carolina Statute

Introduction
- Mission of the selection policy
- Intellectual freedom statement
- Audience served by the collection

Scope of policy
- Types of materials covered by the policy

Staff who are responsible for policy recommendations
- School library media coordinator
- Instructional technology facilitator
- Media and Technology Advisory Committee

Challenge procedures
- Building and system-level response procedures
- Required forms

Selection process
- Selection tools
- Consideration files
- Recommendations from others
- Previews

Materials and Equipment Selection Criteria
- Content and scope
- Appropriateness
- Cultural pluralism
- Technical qualities
- Presentation elements

Acquisition and management
- Funding
- Sources for purchases
- Gifts policy
- Weeding guidelines
- Inventory
- Needs assessment
- Collection mapping

📂 *Workbook for Selection Policy Writing*,
http://www.ala.org/alaorg/oif/workbook_selection.html

105

Points to Remember
When Selecting Materials

"Working collaboratively with teachers and others, the library media specialist is the catalyst for creating collections that promote curricular achievement and information literacy for all learners."

(AASL and AECT 1998, 91)

"A library collection needs to match the curriculum, be current in its information and its appearance and have materials in sufficient quantity to support varied use by classes, small groups, or individual students engaged in research and inquiry."

(Zweizig and Hopkins 1999)

The questions in the checklists that follow reflect several universal criteria used to develop a quality collection of resources.

Five "Rights" to Remember

Deliver

1 the right *information*

2 to the right *person*

3 at the right *time*

4 in the right *format*

5 and in the right *location*

(Loertscher 2000)

☑

Selecting Materials:
Some Guiding Questions

1. Do the resources meet criteria and guidelines developed by the North Carolina Department of Public Instruction?
   📂 For more information on North Carolina guidelines, refer to *http://www.evalutech.sreb.org/criteria/index_frames.htm.*
2. Is this the best format for presentation of the information?
3. Can this technology or format be used by many students with various ability levels and learning styles at approximately the same time?
4. Can the school provide ongoing support for this format?
5. Does this format take into consideration the school's goals and objectives for its students/teachers?
6. Is this the best use of limited funds?
7. Do the items selected require adherence to State Purchase and Contract guidelines?

   📂 For more information on State Purchase and Contract guidelines, refer to *http://www.doa.state.nc.us/PandC.*

Additional Questions

1. Are materials selected based on school board plans and policies?
2. Do programs provide access to local, regional, statewide, national and global information?
3. Are resources bibliographically and physically accessible?
4. Are resources developmentally appropriate?
5. Do resources reflect diversity?
6. Are resources evaluated, inventoried, and managed according to school board policies?

(ISLMA 1999, 17)

107

Mapping the Collection

"The collections of the library media program are developed and evaluated collaboratively to support the school's curriculum and to meet the diverse learning needs of the students."

(AASL and AECT 1998, 90)

"One technique to accomplish this task is to map the collection: ascertain its strengths and weaknesses, create targets for growth, and track the impact of expenditures."

(Loertscher 2000, 213)

Collection mapping has been simplified with the use of automated systems.

☑

**Steps for Developing
a Collection Map**

1. Describe the community.

2. Describe the curriculum of the school.

3. Provide a statement of the vision of the school library media program.

4. Draw a collection map that shows the strengths and weaknesses of the current collection.

5. Draw a proposed collection map for a one- to three-year period.

(Loertscher 2000, 211-213)

Assessing the Collection

Various methods should be used to assess collections so that professionals can determine how well the resources align with the curriculum and meet teaching and learning needs. Information gathered from diverse measures, including measures listed in the checklists, can be used to plan and to develop budget proposals.

"Using output measures requires much more than mastering formulas and collecting data. A good understanding of what information each measure conveys, judicious selection of which measures to use, and careful construction of your case are all necessary for presenting convincing data to support a proposal and their use can guide your planning."

(Bradburn 1999, XV)

☑

Quantitative Assessment Measures

- Statistics by materials type
- Electronic resources hit rates
- Analysis by copyright date
- Circulation statistics

☑

Qualitative Assessment Measures

- Direct examination for alignment with curriculum topics, instructional units, etc.
- Comparison with standard selection sources, bibliographies, etc.
- User perception surveys

109

Handling Challenges to the Collection

Intellectual freedom and censorship

Even with effective policies in place, any type of material—whether it is located in the media center, technology lab, or classroom—can be challenged as inappropriate by any individual, at any given time. Therefore, library media and technology personnel must work diligently to avoid censorship.

When materials are challenged

Once a resource is challenged, procedures for dealing with the complaint must be followed carefully as outlined in local board-approved policy.

📁 For more information, refer to
http://www.ncwiseowl.org/impact.html

> "Intellectual freedom is 'prerequisite to effective and responsible citizenship in a democracy....' Freedom of access to information and ideas is essential for students and others to become critical thinkers, competent problem solvers, and life-long learners who contribute productively and ethically to society."
>
> (AASL and AECT 1998, 91)

Freedom of access to information

> "Freedom of access to information and ideas is essential for students and others to become critical thinkers, competent problem solvers, and lifelong learners who contribute productively and ethically to society."
>
> (AASL and AECT 1998, 91)

Censorship

In *Censorship and Selection: Issues and Answers for Schools* Reichmann defines censorship as follows:

> "Censorship is the removal, suppression, or restricted circulation of literary, artistic or educational materials – of images, ideas, and information – on the grounds that these are morally or otherwise objectionable in light of standards applied by the censor."
>
> (Reichman 1993)

110

School policy and state-mandated policy

School policy should support students' right to read and intellectual freedom. All resources used in the instructional program should adhere to the Materials Selection Policy of the school and to the Acceptable Use Policy (AUP) for accessing Internet resources.

A step-by-step policy should be in place at the system level to communicate and defend materials selection decisions. The state-mandated policy for this purpose is entitled *Suggested Guidelines for the Reconsideration of Instructional Materials in the N.C. Public Schools.*

For more information

For more information on intellectual freedom and censorship, consult these resources:
- *Library Bill of Rights*
  (American Library Association)
  http://www.ala.org/work/freedom/lbr.html
- *Access to Resources and Services in the School Library Media Program*
  (American Association of School Librarians)
  http://www.ala.org/aasl/positions/ps_billofrights.html
- *Censorship Statement*
  (International Reading Association)
  http://www.ncwiseowl.org/impact.html
- *Freedom to Read Statement*
  (American Library Association)
  http://www.ala.org/alaorg/oif/freeread.html
- *Freedom to View*
  (American Film and Video Association)
  http://www.ala.org/alaorg/oif/freedomtoview.html I
- *Statement on Intellectual Freedom*
  (Association for Educational Communications and Technology)
  http://www.ncwiseowl.org/impact.html
- *Student's Right to Read*
  (National Council of Teachers of English)
  http://www.ncte.org/positions/right.html

111

Conducting Inventory of the Collection

What is
inventory?

Inventory is a systematic procedure that verifies the location of every item in the resources collection. Conducting inventory should be part of the on-going process of maintaining a collection of resources that meets the needs of students and teachers.

Library automation systems allow resources to be inventoried quickly and accurately with the use of a barcode scanner and an electronic database of resource holdings. Information derived from the inventory can be used to determine budget needs for collection development.

Why
inventory?

An accurate inventory provides multiple benefits to a school, including these:
- Helps assure more appropriate selections by identifying weak areas or gaps in the collection.
- Helps assess the extent to which students and teachers are provided a wide variety of resources suitable to different learning styles and curriculum areas.
- Helps identify resources that need minor repairs or those that should be discarded because they are physically deteriorating, out of date, inaccurate, or duplicate.

112

When should inventory be conducted?

☑

Guidelines for Scheduling Inventory

- The schedule chosen for inventorying materials will depend on circumstances in the individual schools.
- Inventory can be performed throughout the year or annually.
☆ • At no time should media or technology facilities be closed to complete the inventory process when school is in session.
- The inventories listed below should be performed each year.

☑

Inventories That Are Performed Each Year

- School equipment inventory:
    - Should be inventoried at the beginning and/or end of each school year.
    - It may be convenient at the same time to make sure that each item is in operative condition.
    - In any case, preventive maintenance should be conducted on each item periodically.

- Hardware inventory
    - Should be performed by the technology staff.

- Media and technology inventory
    - Must be performed by media and instructional technology personnel.
    - The technology inventory is reported to the state as the *Annual Media and Technology Report*. *http://amtr.dpi.state.nc.us*

Weeding the Collection

Weeding and quality

The weeding of materials that are no longer relevant or accurate is an essential component of collection development and should be done as systematically and objectively as possible.

A planned method of weeding on a regularly scheduled basis is an integral part of maintaining a quality collection that assists students and teachers in the learning process. Teaching staff and trained volunteers can be enlisted to assist in the weeding process.

"A smaller, more attractive collection of relevant, up-to-date materials is more important to students and teachers than a large collection of mostly useless materials that will be ignored by all but the most aggressive students."

(Woolls 1999, 169)

Factors to consider when weeding

- Curriculum
- Student interests
- Teaching methods
- Learning styles
- Community information
- Established standards for the weeding process

The goal of weeding

In general, the goal of weeding is to identify resources that:
- Are outdated or inaccurate.
- No longer meet curriculum needs or current grade levels
- Are in poor physical condition.
- Have not circulated for three to ten years (varies by subject area).
- Represent multiple copies or versions that are no longer needed.

114

Using the
MUSTIE
acronym

The MUSTIE acronym is worth memorizing before weeding. If any materials or resources match the descriptors, weed them.

☑

Misleading (and/or factually inaccurate)

Ugly (worn or beyond mending or rebinding)

Superseded (by a truly new edition or by a much better book on the subject)

Trivial (of no discernible literary or scientific merit)

Irrelevant to the needs and interests of your community

E May be obtained expeditiously elsewhere through interlibrary loan.

(Texas State Library 1995)

Items that may
be kept

Even if they meet all weeding criteria, the following items may be kept:

- Historically significant works of literature that cannot be replaced
- Works with unusual illustrations or illustrations done by a well-known artist
- Works by a local author or illustrator
- Descriptions of local history or personalities

🗁 For more
information

For detailed guidelines for weeding resources in various subject areas, refer to http://www.ncwiseowl.org/impact.html

115

Selecting Equipment,
Hardware, and Infrastructure

Selection is a joint responsibility of administrators and media and technology staff.	Equipment/hardware is required to permit access to audiovisual and computer-based instructional resources. Securing appropriate equipment/hardware in sufficient quantities to serve the needs of teachers and students is the responsibility of administrators and media and technology staff. To ensure standardization of equipment, guidelines should be developed at the system level.
It is important for schools to be aware of options.	Making choices based on the needs of individual schools is essential. The Department of Administration, through the Division of Purchase and Contract, is charged with maintaining state term contracts for equipment, materials, supplies, and services. Schools should be aware of the options provided by current policies, procedures, and statutes for the purchase of these items with state funds.
Many aids are available to help schools.	The Department of Public Instruction (DPI), and the State Information Technology Services (ITS) have developed a series of technical standards, recommendations, statements of direction, and other aids to assist schools and districts in implementing a wide range of instructional and administrative technology. The purpose of these recommendations is to provide a blueprint of what the minimum level of infrastructure (walls, wires, hubs, routers, computer hardware) should be in each school system throughout North Carolina.

☞ For more information, refer to *North Carolina School Technology Plan:Technological Recommendations and Standards* at *http://tps.dpi.state.nc.us/techstandard/*

116

Accessibility Policy

Accessibility Issues and Characteristics

Providing access to materials and resources is the primary function of library/media and technology programs. Policies should address issues of physical and intellectual access, consider strategies in the checklists on this page, and address points on the next page about loaning resources.

Physical access policy should include statements about:
- Open, flexible access to facilities for instruction and leisure reading.
- Provisions for those with special needs, including the use of assistive/adaptive equipment.

Decisions must also be made about building access for parents and community members after normal school hours.

Policy statements for intellectual access must take into consideration the students' right to read and intellectual freedom.

☑

Physical access means:

- Physical facilities, arranged to meet the needs of students, teachers, parents, and community members (for example, assistive/adaptive equipment).
- Open hours within and beyond the school day.
- Flexible, equitable access that provides instruction for all at the point of need.
- Free, timely, and easy access to program services, resources, and facilities.

☑

Intellectual access means:

- Well-organized collection of resources.
- Information in a variety of formats.
- Accurate, current information that meets the needs of learners.
- Methods for finding, judging, and using information.

117

Materials and Equipment Circulation

Circulation policies and procedures should encourage borrowing and use.

Policies and procedures for circulating and loaning materials must encourage users to borrow materials and equipment for use throughout the school, at home, and in the media center and technology labs. Decisions will need to be made regarding loan periods for various types of materials and users (such as overnight loans for reference materials or longer loan periods for teachers using materials in instructional units).

Loaning means expanded access.

Access to materials should not be denied to students who cannot afford printing or photocopying fees. Policies should also include provisions for the circulation of equipment, including laptop computers. Review circulation policies periodically to ensure that all students and teachers have equal access to information and that no obstacles inhibit the use of media and technology resources.

Loan policies and procedures must address a variety of topics.

When developing policy for loaning resources, consider these options:

- Loans for school and home use
- Manual vs. automated systems
- Maximum access vs. minimal access
- Deposits, late fines, and payment
- Amortization and replacement of equipment
- Insurance coverage

(Salmon, et al 1996)

Equipment Maintenance and Repair

Tips for
maintenance
and repair

> ☑
>
> ### Suggestions for Maintaining and Repairing Equipment
>
> - Use the equipment record card or database to keep a record of each complaint about and service to the equipment.
> - Check for yourself to see if you can duplicate the reported problem.
> - Before repairs are made, determine whether the cost of repair is worthwhile in terms of new equipment costs.
> - When necessary, send equipment for repair. Check to determine whether it is still under warranty.
> - When the equipment is returned, check to make sure the problem has been corrected.
> - On the equipment record card or in a database, maintain repair records for each piece of equipment.
> - Clean equipment yearly or more often.
>
> *(Oklahoma State Department of Education 2000)*

When is
equipment
obsolete?

Equipment can be deemed obsolete when software or other media are no longer available for use. There should be an ongoing cycle to replace certain types of equipment (such as televisions or computers) with newer versions.

119

Total cost of ownership (TCO)

The Consortium for School Networking estimates that the total annual cost of ownership (TCO) for educational technology is approximately $500 per pupil or about $2000 per computer for a desktop connected to the Internet.

The TCO of a piece of equipment includes:
- Maintenance and repair
- Electricity and HVAC
- Telecommunications charges
- Staff development (20%-30%)
- Downtime
- Virus protection
- Furniture
- Upgrades

(Fitzgerald 2000 and COSN 1999)

Total Cost of Ownership

$500 per pupil per year $2000 per computer per year
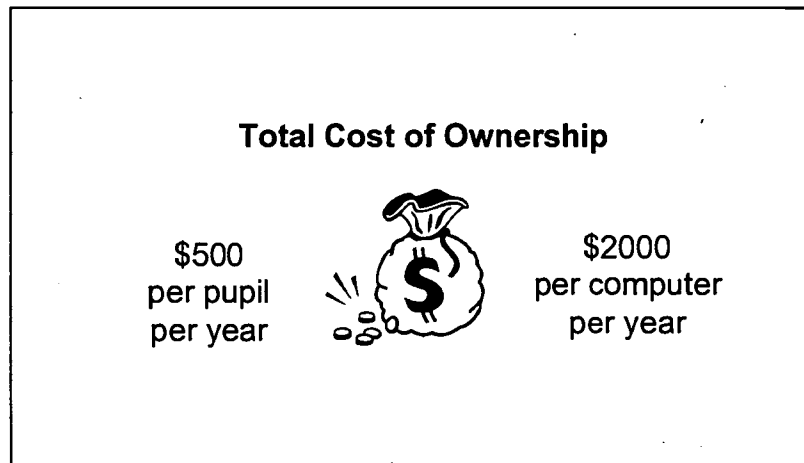
LEAs and schools need to take the total cost of ownership into account when budgeting for technology.
(North Carolina Educational Technology Plan 2001-2005, http://tps.dpi.state.nc.us/techplan2000)

Setting priorities

It is extremely important that technical support guidelines be established and communicated to all users in a school or district. Personnel limitations are a reality and dictate that all stakeholders have an awareness of 1) the volume of technical support requests and 2) the fact that not all requests are equally important. Establishing a priority system for different types of help requests can help with this issue. Systems are increasingly using online resources like locally created databases or free Internet sites to track technical support calls.

Tracking requests | Whatever system is decided upon, a mechanism must be in place to track the number and nature of technical support requests. It is also important to identify the person(s) at the school who is authorized to contact district and network personnel when needed.

Copyright Policy

Copyright requires attention and modeling. | The issue of copyright is one that demands increasing attention as new resources become available in a variety of formats. It is the ethical and professional responsibility of media and technology staff to be informed about copyright laws and issues and to model adherence to copyright law for students and staff.

Copyright policy must be shared. | Copyright policy must be shared with teachers and administrators on a regular basis, along with explanations of its importance. Information on copyright should be presented at the beginning of each school year, with updates throughout the year as needed.

Copyright information covers many topics. | Issues related to intellectual property rights are included in guidelines on electronic copyright and Fair Use for Educators. Copyright is too broad a topic to adequately address in this manual, but there are numerous resources to consult, including these:

☞ For more information about copyright,
refer to *http://www.dpi.state.nc.us/copyright1.html*
☞ For more information about fair use guidelines, refer to *http://www.dpi.state.nc.us/copyright1.html#2*
☞ For more information about video rental, refer to *http://www.ncwiseowl.org/impact.htm*

121

Acceptable Use Policy (AUP)

Internet use continues to increase.

Ever-increasing access to the Internet is making the use of online resources an integral part of the instructional program, on a par with all other types of resources. Parents and caregivers need to be educated about the important role that all resources have in the learning process.

AUPs address challenges that come with online learning.

The online environment creates special challenges for educators. Before students have access to the Internet, an Acceptable Use Policy (AUP) needs to be developed that establishes clear rules and expectations for appropriate use of online resources, as well as the consequences of inappropriate use. In addition, networks must be protected adequately to insure the smooth operation of administrative and academic programs.

As with all policies, an AUP should:
- Have the support of the stakeholders within the school community—students, faculty, and parents
- Be a part of local board-approved policy.

In addition, Acceptable Use Policies must be explained clearly to students and require signatures before accessing Internet resources.

Some schools include AUPs as part of the handbook provided to students at the beginning of each year. As AUPs are being revised over the next few years, schools should consider broadening their scope to include the ethical use of all resources, not just the Internet.

Standard AUP
components

Standard AUP Components ☑

- Types of materials that can be accessed
- Expected behaviors
- Access rights
- Network privileges
    - Password security
    - File storage on network drives
- System safety
- Vandalism
- Destructive behavior
- Copyright issues
- Academic integrity
- Privacy and personal safety
- Illegal activities
- Appropriate language and material
- Proper use of computer time

📁 For more information about developing AUPs,
refer to *http://www.rice.edu/armadillo/acceptable.html* and
http://www.ncwiseowl.org/impact.htm

123

Web Site Development Policy

The school Web site is one of the best ways to communicate program goals and successes with parents and community. It is a wonderful forum for advocacy, but guidelines must be carefully followed. A policy should address the procedures to be followed for school and teacher Web sites, and should include the components in the checklist.

📁 For more information, refer to
http://www.ncwiseowl.org/impact.htm

☑

Web Site Components

- Definition of acceptable content

- Signed statement by students transferring ownership of Web site design and content to school

- Identity of the person ultimately responsible for content hosted on school servers

- Procedure for posting teacher Web pages

- Procedure for allowing/disallowing student access to school Web pages

- Rules governing commercial content/links

- Procedure for gaining permission to use hyperlinks to other sites

- Procedure for dealing with photographs of students and/or their work

- A reminder of copyright laws

- Procedure governing the posting of faculty/staff email addresses

124

● Building Support
for Vision and Programs

**Building
Support
for
Vision
and
Programs**

→ **Communicating
the Vision**

→ **Building Support
within
the School**

→ **Building Support
within
the Community**
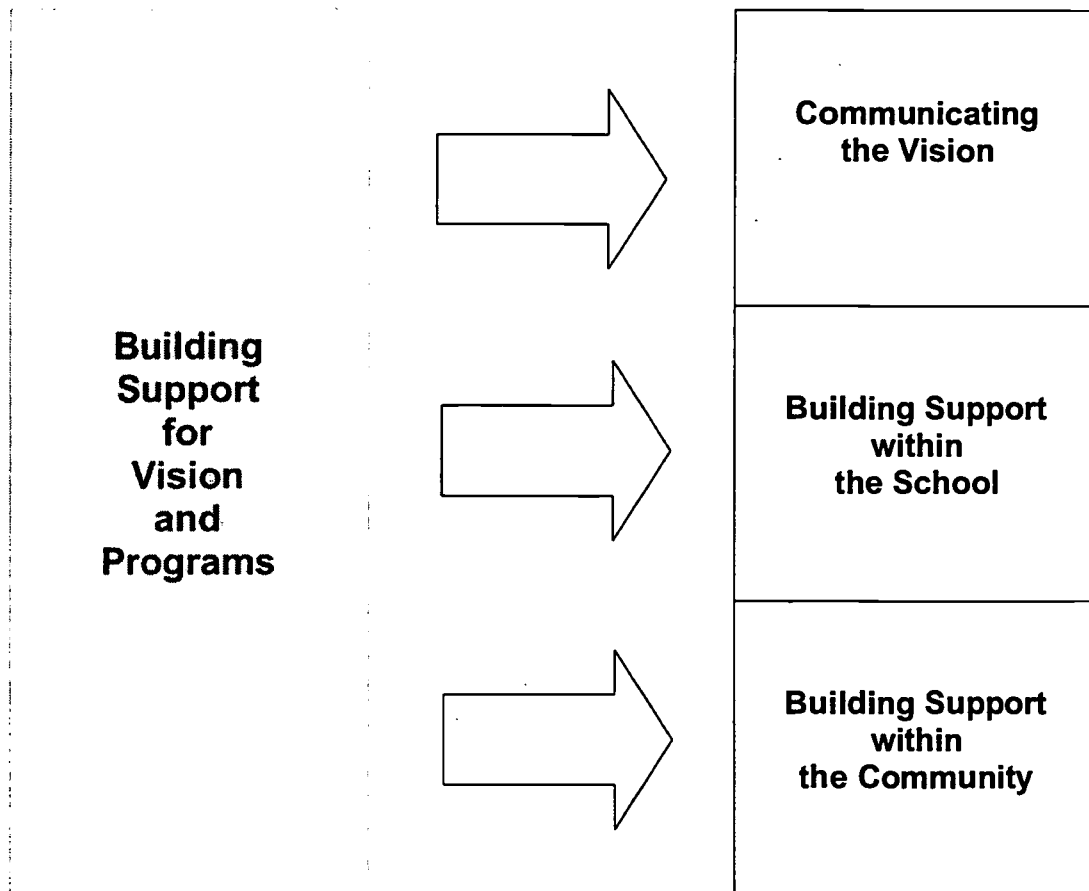
Communicating
the Vision

Who must be
involved?

It is important that the vision of media and technology
programs reflect the instructional mission of the school
and that all stakeholders in the learning process
acknowledge and support this vision.

Who should
provide
leadership?

Because the library media and technology programs work
at the instructional heart of the school, it is especially
important that these programs assume leadership for
communicating the vision for their programs within the
school and in the community.

> "A well-documented, well-publicized program affirms
> its own excellence and demonstrates its value to the
> entire learning community. An effective program
> increases its stature through regular and systematic
> communication about its mission, goals, functions,
> achievements, and overall impact."
>
> (AASL and AECT 1998, 112)

126

Building Support within the School

Two strategies

There are a number of ways to build support within the school for the vision of media and technology programs. Two important strategies are:

- Create a positive atmosphere wherever programs are located.
- Win the support of faculty.

Create a positive, welcoming, and student-centered environment.

The patrons of media and technology programs must first feel welcome—without a sense of ease and belonging, learning cannot take place. The school facility will dictate how students perceive and interact with media and technology resources and staff.

Students and staff will avoid areas that appear to be disorganized and have out-of-date resources and equipment that cannot meet learning needs. Likewise, they will not approach technology or library media professionals for guidance and assistance if they perceive that they will not be given courteous and timely help.

Library media and technology professionals need to be constantly aware of the importance of a smile, and having a friendly, caring, "can do" attitude no matter the stresses of their roles. The checklists that follow suggest ways to create a positive and welcoming environment and provide tips for beating the "study hall syndrome."

127

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Creating a Positive and Welcoming Environment

1. Talk to students and listen to their opinions.
2. Re-examine priorities if you discover you do not have time to work with students.
3. Encourage teachers to assign research projects so that students may be led to develop research skills.
4. Leave the library to promote its services.

(Pearson 1999)

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Beating the Study Hall Syndrome

1. Schedule plenty of meaningful activities.
2. Add technology to the arena.
3. Share the space with other people.
4. Have few rules.
5. Provide alternate activities: books, magazines, scavenger hunts.
6. Change the school climate: educate teachers and administrators, serve on site-based management teams, work to change teaching strategies to make media [and technology] indispensable.

(Johnson 1997, 34-35)

128

Win
faculty support.

Faculty and administrative support are vital to the success of school media and technology programs. Below are some simple strategies for winning this support.

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**Tips for Getting
Support of Faculty**

1. Use faculty as subject area specialists.
2. Offer to assist faculty in the process of curriculum development.
3. Assist the faculty in compiling bibliographic lists of available materials for specific subject areas.
4. Publish a newsletter for faculty and administration.
5. Meet with all first-year teachers for a tour of the library and discussion.
6. Take student, faculty and administrator opinion polls on the library and technology programs.
7. Help teachers find applicable grant sources.
8. Be an active participant in school meetings and committees.
9. Meet with individual teachers to discuss needs and interests.

(Pearson 1999, 17-18)

129

Additional strategies

Other strategies for fostering communication with faculty and administration include:
- Exchange comments, questions, and information via e-mail.
- Provide staff development and presentations.
- Sponsor contests, competitions and promotions like Battle of the Books, ThinkQuest, Computer Learning Month, Children's Book Week, North Carolina Children's Book Award.
- Coordinate efforts with Workforce Development personnel
- Offer Intranet offerings and/or in-house news programs
- Make advocacy an ongoing priority. Of all the strategies, this one may be the most important.

Stay focused on advocacy.

"The school library media specialist is the chief advocate for the library media program and documents its effectiveness so that the full learning community recognizes its value and supports is role. Seeking both formal and informal opportunities to raise public awareness, the library media specialist uses a variety of techniques to demonstrate the program's significance. Through regular administrative reporting, as well as ongoing advocacy, the library media specialist conveys the program's leadership in fostering information literacy, in encouraging collaborative teaching and learning, and in developing sophisticated uses of information technology."

(AASL and AECT 1998, 113)

130

Building Support
within the Community

Communicate program developments and successes.	Keeping community members apprised of program developments and successes is one of the best ways to build ongoing support for libraries and technology programs.
Use the Internet.	The Internet is a simple method for this— and is one that can be easily updated.
Become the connection to outside resources.	The school library media center also can be the connection to other outside resources such as museums, businesses, community agencies and individuals, online services, and state agencies and resources.
Use the strategies that follow.	The checklists that follow contain additional ideas and strategies for communicating program development and successes and for getting the community involved in media and technology programs.

131

☑	☑
Ways to Communicate Program Development and Successes	**Ways to Get the Community Involved**

Ways to Communicate Program Development and Successes

- School Web sites or pages
- Newsletters for PTA/PTO
- Media articles
- Presentations for the Board of Education and community groups
- Membership in professional organizations
- Book discussion groups
- Involvement of community in program evaluation
- Thank you notes/gifts for volunteers.

Ways to Get the Community Involved

- Develop and keep a list of volunteers.
- Develop a file of community experts willing to present programs.
- Open the library/technology facilities for use in the evenings and on weekends.
- Develop a file of community organizations, businesses, and individuals who may be contacted for fundraising purposes.
- Become a collection point for local history resources.

(Pearson 1999)

132

● Issues and Myths

Throughout our careers as media and technology professionals, we will face attitudes and decisions that run counter to best practice in our professions. Sometimes we will know instinctively that a better way exists, but have no information to counter balance the majority. This section, *Issues and Myths*, is designed to introduce "positions" from which to begin building a case for policy change.

Placed in the *Program Administration* chapter of *IMPACT* because it reflects the public relations and change agent portion of our jobs, *Issues and Myths* is not all-inclusive information, but a succinct overview of best practice and research in a variety of media and technology practices. We have started with several familiar issues that media and technology professionals encounter on a daily basis.

As you encounter other issues and myths that need position papers, please contact Frances Bradburn at *fbradbur@dpi.state.nc.us*. We will continue to publish *Issues and Myths*, and will welcome your suggestions.

133

Information Literacy: Everybody's Job

What is information literacy?

Ultimately, information literate people are those who have learned how to learn. They know how to learn because they know how knowledge is organized, how to find information in such a way that others can learn from them. They are people who are prepared for lifelong learning, because they can always find the information needed for any task or decision at hand.

(American Library Association Presidential Committee on Information Literacy: Final Report 1989)

The process oriented approach

Perhaps one of the most significant changes in library media programs during the last two decades has been the shifting of the instructional focus away from "library skills" towards a more process-oriented approach of "information literacy." Traditional library skills—such as how to use a table of contents or encyclopedia index, what to use an atlas or almanac for—were primarily print-based in format and dealt largely with locating information.

The development of audio, video, and multimedia formats, and, of course, computers reinforced the importance of instructional technologies in the learning process, resulting in cries for further instruction in how to use and manipulate those new technologies. Information processing skills, the core of the information literacy approach, emphasize critical and creative thinking, problem solving, decision making, the collaborative nature of the learning process, and stress the importance of authentic learning.

Mirroring the learning process

The focus of information literacy mirrors the learning process itself. Indeed, they are virtually the same—the active finding, manipulation, evaluation, interpretation, construction, and communication of information is how students learn, enabling them to become lifelong learners and informed decision-makers.

134

Integrating curriculum through collaboration

The North Carolina Standard Course of Study outlines both the Information Skills Curriculum and the Computer Skills Curriculum, which form the core for both library media and instructional technology programs. These curriculums incorporate current national standards from such organizations as the American Association of School Librarians, the Association for Educational Communications and Technology, the International Society for Technology in Education, and others. Both curriculums verify that information processing and technology skills are not the job of the instructional technology specialist and the library media specialist alone; real learning is most successfully achieved when these thinking skills are taught in collaboration with classroom teachers, other specialists, and the total instructional staff.

The Computer Skills and Information Skills Curriculums

A close look at the Computer Skills and Information Skills Curriculums reveals many parallels, sometimes practically identical, with other components of the Standard Course of Study—further confirmation that the basic skills of reading, language arts, math, science, social studies, etc. are all concerned with the business of processing, manipulating, evaluating, creating, and communicating information. Information processing skills are basic skills, they are thinking skills, and information literacy is literacy—the goal of everyone teaching and working in schools today.

135

Flexible Access: For the Children

What is
Flexible
Access?

Flexible access is the ability of any student, teacher, or staff member to access the school library media center and the computer lab and their resources when needed.

What is the
goal of flexible
access?

To make available the school library media center and the computer lab resources when they are needed to support, supplement, and enhance teaching and learning, thus impacting student achievement.
To enable the school library media coordinator and the instructional technology facilitator to plan with teachers and staff for instructional purposes.
To guide students in their search for information and resources, thus fostering independence and life-long learning.

What flexible
access is NOT.

Flexible access does not mean that the school library media coordinator or the instructional technology facilitator teaches a fixed schedule of classes while teachers and students move in and out of the facility. Nor does it mean that the school library media coordinator or the instructional technology facilitator teaches a fixed schedule of classes during a portion of the day and opens the facilities for flexible use during the remainder of the day. This is termed a combination schedule and is a recipe for media coordinator or technology facilitator burnout.

Flexible access does not mean that the school library media center or the computer lab is open before and after school and during lunch for browsing, surfing, book checkout, and assignment preparation, with a fixed schedule of classes being taught during the regular school day.

Flexible access does not mean that the school library media coordinator and the instructional technology facilitator sit around and wait for students, teachers, and staff to take the initiative to use the facilities and their resources. On the contrary, the media coordinator and the technology facilitator are constantly in the classrooms talking with teachers about their plans and encouraging them to use the resources and facilities available.

What do the experts say about flexible access?

"In a student-centered library media program, learning needs take precedence over class schedules, school hours, student categorizations, and other logistical concerns. To meet learning needs, the program's resources and services must be available so that information problems can be resolved when they arise. Predetermined timetables without other options and practices that limit access to resources on the basis of age, ability level, or other means of grouping can stifle intellectual curiosity and authentic learning. Flexible schedules can also allow the school library media specialist more opportunities for collaborative planning with teachers. Flexible, equitable, and far-reaching access to the library media program is essential to the development of a vibrant, active learning community."

(AALS and AECT 1999, 89)

"Excellent staff, facilities, and resources are not enough for a successful program. When the time spent in the library is dictated not by student need but by the clock, the "teachable moment" may never arrive. Opportunities for teachers and librarians to plan together are usually nonexistent. The time problem can be resolved by accepting, implementing, and promoting flexible access to the library."

(Lankford 1994, 21)

Lessons learned from the real world

- Flexible access is beneficial to the learner.
- What is taught and learned in the library must not be separate from what is taught and learned in the classroom.
- Multiple activities can successfully co-exist in the library, and more than one grade level or class can access resources simultaneously.
- Flexible access results in no loss of control by the librarian. Instead…the librarian has become a full-fledged, integral part of the teaching and learning process.
- Flexible access helps create students who are excited about learning and are able and eager to complete research assignments.

137

- Even kindergartners and first graders can find their way to the library and independently check out their own books.
- A library under siege by learners has a higher noise level, is not always in perfect order, and contains some worn out resources.
- Flexible access gives full visibility to the creative capabilities of librarians.

(Lankford 1994, 23)

What does flexible access look like?

At any point in time:
- Students and teachers move freely in and out of the media center and the computer lab for activities such as checking out books, creating a spreadsheet or word processing a paper, and looking up information for an assignment.
- Teachers check with the school library media coordinator and instructional technology facilitator for available blocks of time to bring in their classes to begin work on a unit--or send a small group of students to work with the media coordinator and/or the technology facilitator.
- One grade level group of teachers is planning with the school library media coordinator and/or the instructional technology facilitator for a new unit of instruction while two or three children come from various classes to check out a book or sit quietly to read a magazine.
- Later, a class of kindergartners comes in for storytime while a fourth grade class and their teacher enter the computer lab to work on their North Carolina portfolios.
- Those same fourth graders may leave the computer lab periodically to find a book or magazine article in the school library media center, everyone working with the school library media coordinator and the instructional technology facilitator to find resources and learn skills that will help them finish their assignment.
- While the kindergarten class may stay in the media center only twenty minutes during storytime, the fourth graders may be in the computer lab and the media center for two or three hours, depending on the time allotted for the activity.

138

What strategies can I use to facilitate flexible access if the media center or computer lab is needed to create planning blocks for the teachers?

- The goal is to help administrators understand the high price of baby-sitting both academically and financially. Base all arguments on the research that supports the appropriate use of the school library media center and the computer lab to impact student achievement.

- Volunteer to help the principal brainstorm alternatives for coverage of teacher release time so that the media center and computer lab are outside the planning block.

If flexible access cannot be implemented, here are some *interim strategies* to employ until flexible access can be achieved.

Allow the media assistant or the teacher assistants to be responsible for meeting classes on a fixed schedule.

- Weekly, plan lessons for each grade level--a story and worksheet for the kindergartners, an encyclopedia scavenger hunt for the 4th graders, etc.

- Place activities in file folders, making sure you have sufficient handouts for every student, in an area where the assistants can find them.

- Allow the media or teacher assistants the independence to carry out the plans.

- Move in and out of the media center or computer lab while the assistants carry out the lessons, making sure you are planning with teachers, working with small group of students, or even teaching another class during this time.

Within the media center, have classes enter on a fixed schedule, each child silently reading at the library's tables during the scheduled time. This is not a punitive measure! Research shows that the more children read, the higher their reading test scores. Emphasize the importance of the time the children will spend reading weekly while they are in the media center.

- Monitor the children's behavior during the first week or two of school, emphasizing to both the students and teachers that this is a silent reading time. Gather teacher and principal support for appropriate behavior during this time frame, and throughout the school year.

- Do your best to ensure that a parent volunteer or teacher assistant is in the media center during this time so that you may move in and out of the center freely.

- Move in and out of the media center while the children are reading, making sure you are planning with teachers, working with small group of students, or even teaching another class during this time.

Note: NCDPI has created a video, *Flexible Access to the School Library Media Center: For the Children,* which is available via video streaming or for tape duplication.
http://video.dpi.state.nc.us/media/StaffDev.html

140

Are Books Obsolete?

The following article is reprinted from *The Educational Technology Journal* with the permission of Jamie McKenzie.

> **From Now On**
> **The Educational Technology Journal**
> Vol 5, No 6 -- February-March, 1995
>
> **When the BOOK? When the Net?**
> **by Jamie McKenzie**

Sometimes the BOOK is better than the NET!

Perhaps it goes without saying. But bandwagons have a way of distorting reality and swaying behavior. All of a sudden the world is rushing willy-nilly onto the Information Highway in a dash to explore just about any topic and any question. It's as if they believe the NET can illuminate any subject. Well, it's time we set the record straight and point out the weaknesses of conducting research on the NET. When is a BOOK the best place to turn? When is the NET the best source? When will a CD-ROM encyclopedia or periodical collection outperform them both?

1. When it comes to history and complex issues . . .
A student recently asked me where was the best place to learn about the Cuban Missile Crisis on
the Internet. I dashed onto the Net full of confidence, having recently located the VIRTUAL LIBRARY for HISTORY. I thought I had a wonderful list of sources which would return hundreds of valuable documents. Not so! More than an hour later I was still wandering around with almost no information to show for my efforts. I stepped off the highway and pondered my failure. Why was there so little about the Cuban Missile Crisis on the Net? I began with profit as a hypothesis. People who study something for thousands of hours, collecting and reviewing hundreds of documents, usually try to sell their work to a publisher. The publisher then tries to make money by selling a book. I could find references to such books on the Net, but the books themselves were still in hard copy formats. No one had rushed to place free electronic versions on the Net. Carefully synthesized information is still a valuable commodity in our society. One pays for such information, either by purchasing a book or subscribing to pay-per-view data services such as DIALOG. It reminded me of my first glimpse at Internet versions of magazines offered in the Electronic NewsStand. I rushed to open a few of these free documents and found they were little more than. Tables of Contents or teaser introductions to lead articles. If you want the real stuff, you subscribe.

The highest quality free information on the NET is generally the governmentally funded studies which have been conducted by university scholars and scientists who have filed them for global sharing on their gopher sites. Historical work on issues like the Cuban Missile Crisis is in generally in short supply. A VERONICA search across gopher sites turned up a dozen documents, the majority of which were either e-mail messages between amateur historians debating the crisis or were documents which refused to open because their file server was not operating:

Search GopherSpace by Title word(s) (via PSINet): Cuban Missile Crisis
1. Cuban Missile Crisis (fwd).
2. Re: Cuban Missile Crisis .
3. Re: Cuban Missile Crisis (fwd).
4. Kruschev/Cuban Missile Crisis.
5. Cuban Missile Crisis.
6. Re: Cuban Missile Crisis .
7. Re: Cuban Missile Crisis (fwd).
8. RE: Cuban Missile Crisis (fwd).
9. Cuban Missile Crisis.
10. CUBAN_MISSILE_CRISIS.
11. COLD WAR: CUBAN MISSILE CRISIS
12. Cold War: Cuban Missile Crisis/
13. The brink : Cuban missile crisis, 1962 - by David I did find one valuable resource, a research question filed for students of a college course in Cold War International Relations which pointed students toward, of all things, books:

ESSAY FOR:

Rachael Bradley TR HIS 1992
Beth Hartland TR HIS 1992
David Morgan AI HIS 1991
Paul Owen AI HIS 1992 Andrew Robinson CS HIS 1992

TITLE: To What extent did the Kennedy Administration's management of relations with Castro's Cuba and the USSR, leading up to the Cuban Missile Crisis, illustrate its general practice in the conduct of "Cold War" confrontations?
READ: 145 [Divine]; 167 [Heath], 169 [Miroff], 173 [Schlesinger]; 287 [Ambrose], 299[Gardner], 300[Garrison & Gleason], 301 [Graebner], 311 [LaFeber], 314 [McCormick], 316 [Paterson], 318 [Schulzinger] for background--i.e. there are plenty of good general books. Plus--or just use some of these mongraphs, if you prefer:
Graham T. ALLISON 327.73092 Essence of Decision: Explaining the Cuban Missile Crisis (1971)
Jules R. BENJAMIN 327.73097 The United States & the Origins of the Cuban Revolution (1990)
Michael R. BESCHLOSS 327.73094 The Crisis Years: Kennedy & Khrushchev, 1960-1963 (1991)

(The actual list was much longer).

142

I also encountered a few good documents, such a letter from Kruschev to Kennedy. It seems that the Net provides some excellent archival information at times.

All in all, the pickings were very slim. I began to form a generalization that the Net was better for currently breaking issues than it was for older questions which had been the focus of serious scholarly thought. Authors in the 1990s will most often seek publication of their best work in hard copy journals and magazines. It is rare that they would start by posting them to the Net, especially since publishers are reluctant to print such electronically compromised articles.

The best thinking on topics such as the Cuban Missile Crisis is probably still captive of the old technology. Until someone purchases the electronic rights to those articles and books with an eye toward making them available on the Net, we may still find the book the best place to start our inquiry regarding certain questions.

2. Books provide synthesized information . . .
Because most of us grew up with hard copy books serving a central role for research we conducted from high school on, most of us probably haven t stopped to think very long about their advantages over the kind of material available on the Internet. A carefully crafted book on a complex non-fiction question is often the result of someone spending 18 months carefully collecting and then culling thousands of documents in order to distill all that information down into a relatively compact parcel we call a book. Books save us a whole lot of trouble - which is both a blessing and a curse - as the selection and culling process can be a powerful aid to bias. If we want to evaluate Kennedy's leadership, we can consult half a dozen books, find the authors opinions, weigh their evidence and build out own case. If we tried to conduct the same inquiry from scratch, it might take us 18 months to sort through the Info-Glut. Good books have done the sorting for us. If the thinking of the author is sound, books take us quickly to the insight level and they also provide enough data to show the foundations of the author's thesis. Researching on the Internet, in contrast, usually requires us to start with raw ingredients. If we hope to reach the insight level, we must first cull through the Info-Glut, sorting and sifting our way toward meaning.

3. Electronic books would be even better . . .
This is in no way meant to suggest that hard copy books need maintain their dominant role. If we could convince the publishers of books and journals to make their files available on the Information Highway without exorbitant fees, the searching capabilities of new software might make such electronic books superior to the hard copy versions. Imagine being able to scan quickly a dozen books on Kennedy's decision, locating the crucial passages and sections in mere moments. Electronic text can be swiftly downloaded and collected in formats which make later consideration and review much easier than the antiquated note cards we grew up using. For those who have used electronic books on the Internet (Project Gutenberg, for example), the power of such formats is evident. We should all work to expand the texts available throughout the gopher sites of the world so that history, social science and complex issues can be explored via the Internet.

4. CD-ROM may also beat out the Internet . . .
EBSCOs Full Text Elite contains thousands of contemporary magazine articles, some of which include full text. A search for Cuban Missile Crisis calls up 73 documents containing those words. Quite an improvement over my search with Veronica. Until one begins to survey the 73 articles and discovers that almost every one of them contains nothing more than an oblique reference to the Cuban Missile Crisis. Most compare Clinton's handling of some foreign policy crisis to Kennedy's handling of the Cuban Missile Crisis. The two or three most promising lead the reader to a review of a BOOK! A few short paragraphs leave us with little insight and fewer facts. Buy the book! It seems that CD-ROM collections of current periodicals are not much more helpful than the Internet when it comes to study of events which took place 34 years ago.

Conclusion
We keep coming back to the book. For certain questions it remains an excellent piece of information technology. In many cases, the carefully distilled information contained in a book may provide superior access to insight. Library media specialists and classroom teachers whose students are lucky enough to have broad scale access to the Internet need to carefully consider when the resources available on the Internet are worth mining. Chances are, given the current nature of the information available on the highway, time may often be spent more efficiently and productively using other information resources.

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Site-based Management

What is site-based management?

Site-based management, the education model, can be defined as the process where local decisions for an organization are made by a team of stakeholders who have an interest in the outcomes of the organization. The stakeholders include teachers, students, parents, education administrators, and community members.

Decentralized management has a long history in the corporate environment. High-involvement management as defined in business decreases centralized control to encourage self-management by employees. Studies of decentralization in business suggest that high-involvement of employees in management is most appropriate in organizations in a rapidly changing environment and where the work is best done in teams. Education leaders adopted the high-involvement model prevalent in the corporate world and applied it to education

Resources for decentralizing an organization

The business community has documented four resources that need to be decentralized throughout the organization in order to restructure for high performance:

1. **Power** to make decisions that influence organizational practices, policies, and directions.

2. **Knowledge** that enables employees to understand and contribute to organizational performance including technical knowledge to do the job or provide the service, interpersonal skills, and managerial knowledge and expertise.

3. **Information** about the performance of the organization, including revenues, expenditures, unit performance, and strategic information on the broader policy and economic environment.

4. **Rewards** that are based on the performance of the organization and the contributions of individuals.

(Lawler 1986)

145

Site-based management in education	In the knowledge-based environment in which media and technology personnel work and teach, the educational setting continues to evolve from the isolated teacher standing on center stage to a more collaborative and collective learning environment. Education now requires a team in which educators and students determine the path of discovery. The necessity for information literacy and computer skills to be a part of a child's education demands the change in educational method
Site-based management in education	In education, site-based management is a large-scale change that requires a long-term process. When policy makers adopt site-based management, they should plan for change at all levels of the educational system. District and state administrators must move away from a top-down, authoritative approach to a service-oriented environment where incentives are provided for school-level change.
Making site-based management work	For site-based management to work, employees at the school site must have authority over budget, personnel, and curriculum. That authority must be used to introduce changes in school functions that actually impact teaching and learning. A set of action steps or initiatives that district and state administrators can take to help schools implement site-based management in ways that enhance school performance are listed on the next page.

146

Making Site-based Management Work

1. Work together with all parties to remove as many constraints as possible to give school-level decision-makers greater flexibility in the areas of budget and personnel. Strategies might include providing schools with a lump sum budget, allowing schools to recruit and select staff, and giving schools the authority to design their own decision-making bodies.

2. Offer direction for curriculum and instruction reform through the creation of an instructional guidance system that includes standards, curriculum frameworks, and assessment components. Within this context, schools must be allowed considerable discretion to determine how to deliver the curriculum.

3. Create a set-aside for professional development and training at both the district and school levels. Also, promote alternative modes of professional development in terms of training topics, service providers, training sites, and instructional approaches.

4. Invest in building a district-wide computer network that allows schools access to information from the central office regarding resources (revenues, expenditures), student performance, and teacher performance to enhance the school's capacity to monitor performance. Districts could also conduct a one- or two-year survey of community and parents regarding satisfaction with the schools.

5. Promote information sharing across schools, districts and states through an electronic communications network and through information dissemination channels at the state and district level.

6. Encourage experimentation with compensation systems that connect rewards with desired behaviors, such as trying innovative instructional practices, helping to design new curricular modules, and becoming actively involved in school decision-making.

(Wohlstetter and Mohrman 1995)

147

School-based Media and Technology Advisory Committee and site-based management

The School Media and Technology Advisory Committee provide the optimal medium for facilitating site-based management in the media and technology program. Comprised of school and community representatives the school media and technology advisory committee is a key component in creating a strong school media and technology program. The committee serves in an advisory capacity to the media coordinator and the technology facilitator in the selection of media and technology materials and resources to support the school program. Secondly, the committee establishes the budget priorities for the media and technology programs based on the needs and goals of the school.

(Bradburn 1998, 14-18)

Technology and site-based management at the district level

A tenet of site-based management is that decisions must be made at the level of the system most appropriate for the particular decision. What should district-level technology personnel consider when making decisions that impact building-level technology program?

- The technology must be accessible and suited to the task.
- The user must have the necessary training, knowledge, and technical support to use the technology appropriately. This means that the technology adopted must be compatible with the hardware and infrastructure already in the school.
- The technology must work and be easy to use before teachers and students are willing to use it.
- Teachers must have the skills to use the technology appropriately.
- Delegating decisions about technology to schools without also providing the knowledge and support (technical and instructional support, time to learn, and time to plan) is unlikely to increase the quality of the decisions. Keeping up with the intensive, rapid pace of technology requires skilled, knowledgeable professionals who are certified in the field of technology.

Making decisions	To make thoughtful decisions, both technical and instructional expertise is important. Knowledge of product reliability and compatibility is also necessary. Therefore, decisions about media and technology may necessitate input from a variety of sources. Decisions must be driven ultimately by their connection to student learning. Different decisions about media and technology may require input from groups within and outside the local school.

District and state level personnel offer direction for curriculum and instruction reform through the creation of a standardized, instructional framework. District and State level school library media and instructional technology programs can follow this same model. District level media and technology departments should serve as clearinghouses of information on media and technology models and resources. Decisions should be made collaboratively based on state and district standards and guidelines. State and district resource recommendations and standards, however, do not remove decision-making responsibilities from school-based personnel about where, how, and who will use hardware once it is purchased. |
| District role in technology | District and state-level personnel should provide electronic communications and information. Determining compatibility of software and hardware requires technical skill that most often cannot be found at each school site. Maintaining hardware and infrastructure as well as managing electronic resources usually requires a level of support that is not affordable or available on site. Centralized, shared, district-level resources and district-level, decision-making input provide the most sufficient level of support. |
| Importance of ongoing participation and communication at all levels | It is important to make the planning process for media and technology both ongoing and participatory at each level of the education system. Continuous communication and education about available resources and technologies and their potential is essential for the success of the instructional program.

Stakeholders face the quandary of balancing the need for local decision-making in the planning process against the need to make knowledgeable decisions and provide satisfactory service and support that is most optimal and affordable at the district level. |

149

Lawler lists power as one of the resources necessary for site-based management to succeed. Perhaps, the word *power* should be changed to teamwork where all parties work together to make informed decisions that best impact student learning.

150

The Digital Divide

What is the digital divide?	Digital divide is defined as the difference between those who have access to technology and online information and those who do not.
Is it myth or reality?	Initially, it was believed that computers and the Internet would be the equalizer between cultures and socio-economic groups. The reverse, however, may be true. Access to online information and technology has furthered the gap between rich/poor, educated/less educated, male/female, white/nonwhite, and youth/middle age/elderly.
What the research says	Computers and the Internet are changing the way we teach and the way we learn. According to a brief, *Internet Access in U.S. Public Schools and Classrooms: 1994-1999,* from the National Center for Education Statistics (2000), 63% of all U.S. public school instructional classrooms are connected to the Internet. Nationwide differences remain between schools with high concentrations of poverty (39% have Internet access) and schools with lower concentrations of poverty (62-74% have Internet access).
Implications	The implications of the digital divide are far-reaching. Government bodies, community organizations, and corporations are increasingly using the Internet as a channel of communication. Lack of access to this information affects the future of our society. The digital divide issue has received comprehensive study from federal government agencies, private foundations and organizations. Ironically, exhaustive research and data can be found about the digital divide on the Internet. Attached is a Webliography of the most up-to-date and comprehensive resources on the digital divide.
☐ For more information	*Closing the Digital Divide* (National Telecommunications and Information Administration) *http://www.digitaldivide.gov* *Computers and Classrooms: The Status of Technology in U.S. Schools* (Policy Information Center, Educational Testing Service) *http://www.ets.org/research/pic/compclass.html* *Digital Divide* (U.S. Department of Education) *http://www.ed.gov/Technology/digdiv.html* *eLab Research on the Digital Divide* (Hoffman & Novak) *http://ecommerce.vanderbilt.edu/digital.divide.html*

📁 For more
information
(continued)

- *Falling Through The Net*
  (National Telecommunications and Information
  Administration)
  http://www.ntia.doc.gov/ntiahome/digitaldivide/
- *The Growing Digital Divide In Access For People With
  Disabilities: Overcoming Barriers To Participation*
  (Office of Equality Assurance)
  http://www.digitaldividenetwork.org/acc.adp
- *Internet Access in U.S. Public Schools and Classrooms:
  1994-1999*
  (National Center for Education Statistics)
  http://nces.ed.gov/pubs2000/2000086.pdf
- *Losing Ground Bit by Bit: Low-Income Communities in
  the Information Age*
  (Benton Foundation)
  http://www.benton.org/Library/Low-Income/
- *Online Content for Low-Income and Underserved
  Americans: The Digital Divide's New Frontier*
  (The Children's Partnership)
  http://www.childrenspartnership.org/

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155

System-level Guidelines

- **System-level Leadership**
- **Teaching and Learning**
- **Information Access and Delivery**
- **Program Administration**
- **Works Cited**

This chapter, designed expressly for the system-level media and technology professional, reflects those responsibilities that are best carried out by a central office advocate, one who is certified in media and technology and whose daily tasks are not divided among other curriculum areas. These system-level responsibilities, however, are based on building-level practice, and reflect the support, nurturing, and decision-making that move individual program excellence to over-all LEA program excellence.

IMPACT is organized to assist the system-level professional in this quest for excellence. By referring to the other chapters, as well as this one alone, central office staff will broaden their knowledge of and support for building-level programs so that they might mirror best practice and expand the services needed to make possible world-class schools.

● System-level Leadership

It is imperative that schools graduate students who can collaborate; solve problems; think critically; function at higher literacy levels; adapt readily to change; and create, synthesize, and apply information. A system-level advocate for the appropriate role of media and technology in the learning process can be a catalyst for developing an environment that meets individual learning needs and provides students with survival skills for the "Information Society."

System-level programs, functioning under the direction of licensed school library media directors, supervisors and instructional technology directors and coordinators, offer a broad range of services to individual schools and system-level personnel. Through the use of media and technology, these services improve, enhance, and support learning and teacher performance. System-level leadership of media and technology programs increases the opportunities for equitable and effective programs at each school within a school system.

To develop equitable and effective media and technology programs, system-level leaders should be actively involved in teaching and learning at all levels, in developing workable and useful information access and delivery strategies, and in managing an evolving complexity of programs. In implementing these three roles, the system-level leader provides vision and demonstrates an understanding of the value and uses of collaboration in developing media and technology programs.

Areas for Leadership

1 Teaching and Learning

2 Information Access and Delivery

3 Program Administration

157

Entire System

Elementary Schools

Middle Schools

System Level

Teaching and Learning
- Collaborating to Achieve Goals
- Being Involved with the Curriculum
- Providing Staff Development
- Planning, Research, and Development

Information Access and Delivery
- Establishing Infrastructure and Connectivity
- Standardizing Resources and Equipment
- Planning for New and Renovated Facilities
- Ensuring Equity
- Managing Resources

Program Administration
- Strengthening Communication and Public Relations
- Establishing Policies and Procedures
- Recruiting, Selecting, and Retaining Personnel
- Attending to Budget Basics
- Developing Collections
- Evaluating Programs

High Schools

Community

158

● Teaching and Learning

Being an active participant in teaching and learning should be the system-level leader's role and professional passion. To become active participants, leaders must model the process of collaboration among disciplines, across grade levels, and within the community.

Using the collaborative model, the system-level leader participates in curriculum development in a variety of ways, such as being a contributing member of curriculum committees, a designer and promoter of literacy and computer skills continuums, and in assessing, encouraging, and consulting on staff development.

To stay abreast of contemporary developments, the system-level technology and media leaders are active researchers, consultants, and disseminators of appropriate information that will assist building-level staff in improving student achievement.

159

Collaborating to Achieve Goals

"Collaboration is a symbiotic process that requires active, genuine effort and commitment by all members of the instructional team."

(AASL and AECT 1998, 51)

"Collaborating with the full range of school personnel to identify and solve information problems presents a model of the approach that students and others must take to thrive in the information age."

(AASL and AECT 1998, 51)

Collaborating to achieve goals means:

☑

- Participating in curriculum decision-making at all levels.
- Participating in curriculum, budget, grade-level, subject area specialists', and principals' meetings.
  ☐ For additional information, see *Curriculum Matrix.*
  http://www.dpi.state.nc.us/curriculum
- Maintaining liaison with other system-level curriculum/program directors and school-based administrators.
- Disseminating best practices through a variety of means–print, non-print, and electronic.
- Working with business, civic, and community groups to give these organizations the opportunity to provide resources for instruction.

**Being
Involved
with the
Curriculum**

☑

Being involved with the curriculum means:

- Promoting the integration of media and technology across all curriculum areas.

- Participating, as a member of the system-level instructional team, in the development and implementation of the statewide curriculum, alternative teaching/learning strategies, and in the use of appropriate resources, including technology.

- Consulting with building-level administrative and instructional staff to ensure that carefully selected, high quality, and appropriate resources are purchased to enhance the curriculum.

- Designing and promoting–in collaboration with system and building-level media and technology professionals, administrators, and teachers–sequential information skills and computer skills continuums to be integrated with classroom instruction in all curriculum areas.

161

Providing
Staff
Development

☑

Providing staff development means:

- Ensuring that staff development supports the integration of media and technology programs across all curriculum areas.

- Establishing and maintaining on-going assessment of staff development needs for media and technology professionals and paraprofessionals.

- Planning, providing, and evaluating follow-up support for staff development through workshops, one-on-one training, online training, and distance learning.

- Ensuring that media and technology staff at the system and building levels have opportunities to participate in subject-area staff development.

- Planning, delivering, and evaluating staff development for all educators that satisfies the 3-5 technology CEUs requirement mandated for license renewal by the North Carolina State Board of Education.

- Planning and delivering staff development that is based on the North Carolina Technology Competencies for Educators.

- Encouraging building-level media and technology staff to assess needs and to provide media and technology staff development for teachers and administrators.

- Consulting with building-level administrators, media and technology staff, and instructional staff to ensure that appropriate staff development opportunities are provided for all educators.

162

Planning, Research, and Development

Planning, research, and development means:

- Promoting media and technology programs as central to the educational process and as shown in the research literature.

- Consulting with building-level administrators and site-based management teams to facilitate school improvement planning and delivery.

- Researching and evaluating resources and instructional strategies that assist teachers in raising student achievement.

- Disseminating information on new developments in media and technology program research and on instructional strategies for building-level administrators and instructional staff.

- Interpreting national, state, regional, and local research, standards, and guidelines.

163

● Information Access and Delivery

The challenge of dealing with information access and delivery for the system-level leader means working with two requirements that seem diametrically opposed. On the one hand, collections of information sources and hardware must be individualized to meet the unique needs of each school's teaching and learning program. On the other hand, fully achieving the effective use of many resources, especially electronic technologies, depends on an infrastructure and standardization that provide comprehensive, cost-effective, and equitable access by all students and teachers.

The demands to individualize and standardize require system-level participation in all aspects of the planning and design of both new and renovated media and technology facilities.

"Access to information, information technologies, and library facilities must not be a major barrier to teachers and students lest the collaborative process be squelched."

(Loertscher 1999, 16)

164

Establishing Infrastructure and Connectivity

☑

Establishing infrastructure and connectivity means:

- Providing leadership in the development of system and building-level networks.
- Identifying, reviewing, and negotiating a variety of system- and building-level agreements for the lease or purchase of hardware and resources for all schools within the system.
- Evaluating, monitoring, and maintaining licensing agreements and compliance policies.
- Providing leadership in developing and implementing system- and building-level deployment procedures to make available up-to-date resources.

Standardizing Resources and Equipment

☑

Standardizing resources and equipment means:

- Providing leadership in developing, evaluating, and monitoring system- and building-level technology plans.
- Promoting the standardization of resources (including hardware and equipment) as specified in the long-range technology plan.
- Promoting the acquisition of high-quality, building-level resources that reflect the diverse nature of the individual school's community.
- Providing high quality, system-level resources that support media and technology faculty and staff in the teaching and learning process.

165

Planning for New and Renovated Facilities

☑

Planning for new and renovated facilities means:

- Assessing needs for new and renovated facilities by gathering input from all stakeholders.
- Developing, in collaboration with the planning committee, educational specifications that describe the functions and requirements of each space in new and renovated facilities for architects, designers, and/or engineers.
- Providing leadership in the planning of new and renovated facilities by working closely with the superintendent (or his/her designee), site-based planning committees, engineers, and architects to ensure the construction of adequate media and technology facilities.

Ensuring Equity

☑

Ensuring equity means:

- Working cooperatively with building-level administrators to assure equitable provision of resources and facilities to meet the learning needs of each school's student population.
- Facilitating resource-sharing among schools and between schools and other libraries and community agencies to provide equitable access to ideas and information.

**Managing
Resources**

Managing resources means: ☑

- Promoting the establishment and maintenance of system-level technology training labs as a resource for demonstrating emerging technologies.

- Developing and maintaining an up-to-date professional resource collection at the system-level.

- Establishing a circulation system to share expensive, rarely used equipment and specialized materials housed in a central location.

- Promoting consideration of resource management options such as centralized processing, union catalogs, and system-level tracking of fixed-asset inventory.

167

● Program Administration

Technological developments, increased pressures for funding options, and the reality of more community interest and involvement in the development of school programs are bringing changes to the function of program administration.

Public relations in the year 2000 means interpreting programs to the entire community. Budgeting means finding supplementary funding as well as projecting needs through the regular budgeting process. Collection development to provide individualized resource collections means encouraging up-to-date policies and procedures to ensure that all learners will have access to meaningful and useful information.

In an environment that is supportive of school reform, evaluation of personnel, resources, and programs also takes on new meaning and requires system-level personnel to have an intimate knowledge of evaluation techniques.

"Community resources, including public libraries, museums, colleges and universities, and local businesses and civic groups, are natural allies in fostering learning."

(AASL and AECT 1998, 127)

168

Strengthening Communication and Public Relations

☑

Strengthening communication and public relations means:

- Establishing and maintaining communication and collaboration with public and academic libraries.
- Participating in community/civic organizations.
- Providing programs to interpret media and technology goals and needs for community, civic, and parent groups.
- Involving community/civic groups in technology and media needs assessment and in planning through surveys, questionnaires, and focus groups.
- Establishing and/or participating in local technology user groups.
- Collaborating with other school systems to create user groups, resources, and support in a changing technology environment.

169

Establishing Policies and Procedures

☑

Establishing policies and procedures means:

- Providing leadership in developing system-level and building-level policies and procedures to ensure that quality teaching and learning are reflected in the selection, acquisition, and maintenance of instructional materials and equipment.

- Establishing deployment policies and procedures to ensure compatibility between hardware infrastructure and resources
  📁 For additional information, see *North Carolina Educational Technology Plan 2001-2005.*
  http://tps.dpi.state.nc.us/techplan2000

- Consulting with school-based media and technology personnel in developing procedures for program management at the building level.

📁 For additional information, see *IMPACT Online.*
http://www.ncwiseowl.org/impact.htm

**Recruiting,
Selecting,
and Retaining
Personnel**

☑

**Recruiting, selecting, and
retaining personnel means:**

- Evaluating and adapting State Board-
  approved job descriptions for media and
  technology personnel.
- Communicating LEA media and technology
  personnel needs to higher education
  preparation programs throughout the state.
- Promoting the development of plans that
  include stipends, supplements, and other
  incentives to recruit and retain media and
  technology personnel.
- Ensuring that building-level, initially
  licensed media and technology personnel
  have appropriate mentors.
- Ensuring that building-level media and
  technology personnel have a support
  structure for professional growth and
  development.
- Consulting with building-level
  administrators as requested in the
  evaluation of building-level media and
  technology staff.
- Promoting awareness of State Board-
  approved evaluation instruments for
  building-level library media and technology
  personnel.
- Providing staff development to building-
  level administrators in the use of
  appropriate, State-Board-approved
  evaluation instruments.

171

Attending to Budget Basics

☑

Attending to budget basics means:

- Providing leadership in the development of a budget at the system- and building-levels that addresses total cost of ownership (TCO). This helps ensure equitable and appropriate funding for the media and technology programs including licensing, maintenance, repair, replacement, contracts, consultants, and staff development.

- Promoting the concept of consolidation of funds at the system-level to address total cost of ownership (TCO) issues, including cost effective acquisition of resources to meet student needs.

- Securing supplementary funding sources for media and technology programs such as federal, state, and private grants, business partnerships, and endowments.

172

Developing Collections

☑

Developing collections means:

- Consulting with building-level media and technology and instructional staff to develop collections of print, nonprint, and electronic resources that will meet the curricular, developmental, and personal needs within the individual schools.

- Consulting with building-level media and technology staff to develop a system-level collection of print, non-print, and electronic resources that will meet their needs.

- Providing opportunities for review and evaluation of new media and technology resources.

- Developing procedures for requesting and evaluating resources to ensure their compatibility with system network configurations.

- Disseminating information on evaluation criteria for selection of resources.

173

Evaluating Programs

☑

Evaluating programs means:

- Providing leadership and vision for evaluating the overall effectiveness of media and technology programs.
- Facilitating formative and summative evaluation as a vital component in teaching and learning, information access and delivery, and program administration.
- Aggregating evaluation data to use in planning and advocacy for media and technology programs.
- Assisting building-level media and technology staff in evaluating their interactions with teachers, students, administrators, and parents.

"Regular and systematic evaluation provides the basis for decisions regarding the development, continuation, modification, or elimination of policies and procedures, activities, and services, and begins anew the planning process. The allocation of resources and the quality and consistency of staff performance are of primary importance in program review."

(AASL and AECT 1988, 48)

"Assessment is collaborative and based on sound principles related to learning and teaching, information literacy, and program administration. Above all, assessment focuses on how well the program fosters students' learning and their development into active, independent members of the learning community who use information effectively, creatively, and responsibly."

(AASL and AECT 1998, 108)

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Research and Evaluation

- **The Challenge**
- **Begin with the Research**
- **How to Evaluate Programs**
- **Using Output Measures for Evaluation**
- **Reference Chart: Measures and What They Support**
- **Program Evaluation Rubrics**
- **Works Cited**

● The Challenge

The evaluation of building-level and system-level programs is one of the most important, yet one of the most difficult, responsibilities of media and technology professionals. In this age of accountability, it is no longer enough to say that good school library media and instructional technology programs are important for good schools. It is critical that we have the research and the data to demonstrate how quality media and technology programs contribute to student learning and effective teaching.

There are many reasons why the evaluation of media and technology programs is difficult, including the ones that follow.

Variety and collaboration make isolation of programs difficult.

1. Isolating either media or technology programs from whole school improvement is a difficult and perhaps self-defeating task, one that we should approach with caution. Good media and technology resources and programs are part of a school's infrastructure, thoroughly infused and embedded in a school's overall approach to teaching and learning. Good school library media and instructional technology programs and resources acknowledge the wide variety of learning and teaching styles that make up a school building and address ways to make each person—student and teacher—successful. This success translates into increased self-esteem, higher motivation, and, ultimately, student achievement.

2. Truly successful media and technology programs are based on collaboration among the school library media coordinator, the instructional technology facilitator, and the individual classroom teacher. Because collaboration acknowledges the contributions of all to the teaching/learning process, isolation of media and technology programs once again is a difficult process.

Studying a moving target is difficult.

3. Finally, the perception exists that research into media and technology resources and programs is the study of "a moving target, [that] rapid technological changes and advances in [hardware and] software development have made some findings obsolete even before they are published."

(NCREL 1999, 1)

177

Because we value
education, we
should measure it.

We cannot use these very valid arguments as an excuse,
however. As difficult as the evaluation process is, we
owe it to all teachers, children, and the community, as
well as ourselves, to continue to document the impact of
media and technology programs on teaching, learning,
and, ultimately, student achievement. This chapter offers
a variety of information to assist educators in the
evaluation process: some of the latest research on media
and technology, strategies for assessing individual
programs, actual rubrics for program evaluation, and the
performance evaluation instruments for professional
staff. Choosing to use these resources is a commitment
to program improvement!

"Education counts in the United States. It counts
because every element of personal well being,
social progress, and economic development is
bound inextricably to knowledge, learning, and skill.
Because we value education we should measure it.
But [an] unintended effective deceptive: We begin
to value only what we can measure. We must learn
to measure what we value rather than valuing what
we can easily measure."

(Ralph 1991)

● Begin with the Research

Existing research into media and technology programs offers us a baseline of information to begin our own building-, system-, and state-level evaluations. Some of the most compelling data that illustrates how media and technology programs impact student achievement is summarized in information that follows.
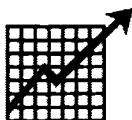
Compelling Data from Current Research

Since 1993 when Keith Curry Lance, Linda Welborn, and Christine Hamilton-Pennell first published the Colorado Study, *The Impact of School Library Media Centers on Academic Achievement*, school library media coordinators have had baseline research on the importance of school librarians and their programs. This study was replicated in both Alaska and Pennsylvania in the late 1990s. In *Information Empowered: The School Librarian as an Agent of Academic Achievement in Alaska Schools*, the state of Alaska has validated Lance's findings.

Library Media Center Staffing	Test scores tend to be higher when there is: • A librarian • A full-time librarian rather than a part-time one • A part-time librarian rather than no librarian at all
Library Media Center Hours Open	Higher levels of librarian staffing lead to: • Longer LMC hours of operation, • Higher levels of library media staff activity • Higher student usage, and consequently, higher test scores
Staff Activities	The higher the level of librarian staffing, the greater the percentage of library media staff hours dedicated to: • Delivering library/information literacy instruction to students, • Planning instructional units cooperatively with teachers, and • Providing in-service training to teachers and other staff. • Regardless of the level of librarian staffing, the more library media staff time devoted to these activities, the higher the test scores.

179

Library Media Program Usage	• The more often students receive library/information literacy instruction in which library media staff are involved, the higher the test scores.
Partnerships, Technology and Policies	Test scores also tend to be higher when: • There is a cooperative relationship between the LMC and the public library. • The library media program provides online access to information—particularly the facilities required to reach the Internet and the World Wide Web. • The MLC has a collection development policy that addresses reconsideration of materials.

(Lance, et al. 1999, 5-6)

The role of technology	Technology has an important role to play in K-12 education, but it will not solve all educational problems. Technology can:

- Make learning more interactive.
- Enhance the enjoyment of learning.
- Individualize and customize the curriculum to match learners' developmental needs as well as personal interests.
- Capture and store data for informing data-driven decision making.
- Enhance avenues for collaboration among family members and the school community.
- Improve methods of accountability and reporting.

Ultimately technology may transform the educational content and motivate students toward life-long learning.

(NCREL 1999)

Minimally for technology to play a positive role, the following factors must be given consideration:

- The success or failure of technology is more dependent on human and contextual factors than on hardware or software. The extent to which teachers are trained to use computers to support learning plays a role in determining whether or not technology has a positive impact on achievement.

- The success or failure of technology involves seeing it as a valuable resource that requires determining where it can have the highest payoff and then matching the design of the application with the intended purpose and learning goal.

- The success of technology depends on having significant critical mass numbers and types of technology applications that are appropriate to the learning expectations of the activity.

- The most pervasive perception among teachers is that computers have improved the climate for learning by increasing student motivation in subjects for which they use computers.

(NCREL 1999)

● How to Evaluate Programs

The evaluation of educational programs is a difficult and time-consuming process, but experience has produced a variety of guidelines to assist us. The key to valid evaluation of media and technology programs is to measure the results, not the resources and technology itself. In an effort to assist states in justifying the investment in technology, the U.S. Department of Education held a series of conferences on evaluation in 1999 and 2000. The following steps to evaluation in general, and to technology evaluation specifically, have resulted from these conferences:

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Goals
● Where do we want to go?

Comparisons
● Where are we now?
● Where were we before?
● Where are others like us?
● Are there others like us who are ahead of us?

Learning
● What have we learned from our own experience?
● If there are others like us who are ahead of us, what are they doing?
● What does the research say?
● What does "best practice" suggest?

(Van der Ploeg 2000)

☑

Steps to Evaluation

1. Set clear, specific, attainable goals.
2. Build multiple measures; keep them simple; explain them.
3. Measure all persons.
4. Collect, record, and store the data.
5. Report the data, often; draw pictures.
6. Know what the measures miss.
7. Measure resources as well as problems.
8. Focus first on comparisons over time and then on comparisons to others.
9. Study variability as well as averages.
10. Enlist a critical friend, a faithful witness.
11. Try something new.

(Van der Ploeg 2000)

182

● Using Output Measures for Evaluation

Evaluation, support, and funding	Good schools require library media programs that are integral to learning and teaching; however, in times of limited revenues and increasing demands, school library media programs must compete with other educational priorities to obtain sufficient resources. To ensure that administrative support and financial resources are provided for quality programs, it is critical that library media specialists regularly evaluate and document all aspects of their programs. Research and data are needed to demonstrate how quality library media programs contribute to student learning and effective teaching.
Use and availability output measures	For many years, public libraries have used "output measures" to evaluate and measure the effectiveness of programs and services. This process approach to evaluation was adapted by Frances Bryant Bradburn in her book, *Output Measures for School Library Media Programs*.

Output measures provide the data needed to document how the resources and services in the library media center are used and how well the program meets the needs of its patrons. "Use measures" provide data about how often resources or services are used by patrons. "Availability measures" document not only whether requested materials and services are available, but also whether the library media specialist is accessible to assist students or to participate in collaborative activities with teachers.

Output Measures document:

- How resources and services are used.
- How well the program meets the needs of its patrons.

⇩ | ⇩

Use Measures document:
- How often resources or services are used.

Availability Measures document:
- If requested materials and services are available.
- If the library media specialist is accessible to assist.

183
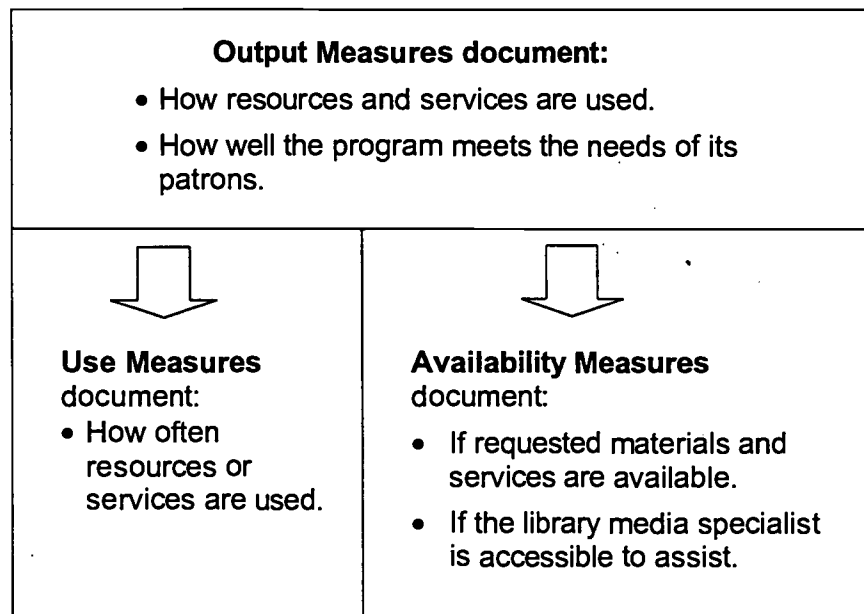
Putting output measures to work	Using output measures, library media specialists can:

- Document what works and what does not work in an individual library media program or across programs in a district.
- Evaluate how well collections and services support curricular needs.
- Produce a compelling argument for maintaining increasing staff and budget.
- Justify the value and need for flexible schedule elementary schools.

Making sure you determine and obtain type of information needed	Data collection for some measures is relatively simple. For others, the process may take significantly more time and effort. It is important, therefore, clearly to determine the information required to justify recommendations or "to make a case" and to select the measures that will provide the most compelling arguments.
Important measures	Following are measures for evaluating and improving school library media and technology programs.

Measures for Evaluating and Improving
School Library Media and Technology Programs

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Output Measures for School Library Media Programs by Frances Bryant Bradburn.

Media center use measure

The amount of time a number of individuals are using the media center on a daily, weekly, monthly, or yearly basis. For many to whom you will be reporting these data, how the media center is being used at a given moment is important information to tally as well.

184

Types of materials use measures

Materials use measures	Calculate the specific resources being used within and outside the school media center.
Circulation rate.	Gives the number of resources checked out on a daily, weekly, or monthly basis. This figure can be broken down to reflect specific areas of the collection or individual student and teacher populations.
In-library use rate	Tallies the number of resources being used within the media center at a specific time. As the name implies, these materials do not circulate, but are being used within the library by students and/or teachers.
Electronic resources hit rate	Calculates the number of times students and teachers use stand-alone or networked electronic resources both within the media center or, if resources are networked to individual classrooms, throughout the school.
Online resources success rate	Tracks the percentage of successful electronic information searches in relation to the number of overall searches conducted.
Turnover rate	Provides the average number of times a given item within a collection circulates during the year.
Furniture and equipment use rate	Estimates the amount of time a piece of furniture or equipment is being used during the school day.
Curriculum support request rate	Calculates the number of requests from teachers that deal directly with their need for teaching support. This figure is most helpful when paired with the actual request for resources or services.

185

Availability measures

Resource availability measures. These are calculations designed to reflect the number of materials available for students and teachers.

Potential curriculum support rate	Measures the collection's potential to support a specific area or areas of an individual school's curriculum.
Curriculum support fill rate	Figures how effectively the existing collection is supporting a school's curriculum. This measure can be calculated from both the teacher's and the student's perspective.
Independent reading/information fill rate	A student-generated statistic that monitors how well the collection is meeting the leisure reading/activity needs of a student population.

School library media specialist availability measures. These measures illustrate whether the school library media specialist is available to assist both students and teachers at point of need.

Planning opportunity rate	Gives the percentage of time a school library media specialist is able to completely fill a teacher's or team's request for assistance in planning a lesson or unit of instruction.
Teaching availability measure	Provides the percentage of time the school library media specialist is available to work with individuals, small groups, or whole classes at the specific request of a teacher. Daily fixed schedules are not included in this calculation.
Troubleshooting request rate	Represents any request for assistance in solving an equipment problem.

Availability measures (continued)

Staff development availability measures. This is a calculation of the number and kind of staff development opportunities available to an educational community.

Staff development request rate	Lists the percentage of staff development courses offered compared to those requested by school personnel.
Staff development attendance rate	Calculates the percentage of staff attending specific staff development opportunities compared to potential participants.

187

● Reference Chart:
Measures and What They Support

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Output Measures for School Library Media Programs by Frances Bryant Bradburn.

Suppports-Measures	Budget	Flexible Schedule	Planning Time	Staffing	Existing Data	Effort Required +	Time Frame
Media Center Use Rate	x	x		x		Medium	Specified
Circulation Rate	x	(x)		x	x*	Low	Specified
In-library Use Rate	x	x	(x)	x		Medium	Specified
Electronic Resource Hit Rate	x			x	x*	Low	Specified
Online Resources Success Rate	x			x		High	Specified
Turnover Rate	x				x*	Low	Specified
Furniture Equipment Use Rate	x	(x)		x		Medium	Specified
Potential Curriculum Fill Rate	x		(x)	(x)		High	Specified
Curriculum Support Fill Rate	x	(x)	(x)	(x)		High	Specified
Independent Reading-Information Fill Rate	x	(x)	(x)	(x)	Survey	High	Specified
Media Specialist Availability Rate		x	x		Survey	High	Specified
Planning Opportunity Rate		x	x	x		High	Over time
Teaching Availability Rate		x		x		High	Over time
Troubleshooting Rate		x		x		High	Specified or Over time
Staff Development Request Rate	x	x				Medium	Over time
Staff Development Attendance Rate							Specified

*   With automated circulation systems

+   Effort required:
    Low–data either already available or easily calculated. *Medium*–Data can be
    gathered while media specialist or designee does other tasks: minimum
    interruption. *High*–Requires extra time and effort to gather and calculate data.

( )   These measurements, together with those specifically targeted to address a certain issue, can
    be used to make a stronger case.

188

● Program Evaluation Rubrics

One of the most effective ways to determine how well media and technology programs are meeting the needs of students, teachers, staff, and the community is through self-reflection. While teacher and student surveys certainly provide a realistic assessment of the daily impact of programs and services on the teaching and learning process, an objective comparison of an individual program with state and national standards and recommendations offers an opportunity for self assessment.

The rubrics that follow, while based on the chapters found in *IMPACT*, provide a global perspective of school library media and instructional technology programs at both the building and system levels. Use these rubrics to reflect on your individual program. Then begin the process of developing your vision of the future—outstanding school library media and instructional technology programs that impact teaching and learning for high student achievement and life-long learning.

Note: The rubric comparison points are Minimum, Developing, and Outstanding; there is no unsatisfactory. This is intentional. All North Carolina media and technology programs must have the expectation that they will be at least at a minimum level for successful teaching and learning to occur. If this is not the case, immediate action should be taken by media and technology personnel, the principal, and the Media and Technology Advisory Committee.

189

Teaching and Learning

Program Outcomes

Outstanding Teaching and Learning at the building level:
- Focuses on student achievement.
- Involves the entire staff in planning a collaborative instructional program in a technology and resource rich environment.
- Offers a collaboratively planned, delivered, and evaluated staff development program that correlates to technology competencies for educators and meets licensure and renewal requirements.

Rubric Topics

1. Instruction
2. Staff Development
3. Collaboration

Strategies to Guide Work

- Collaborate with the entire instructional team.
- Lead with vision.
- Utilize media and technology resources.

190

Teaching and Learning

Instruction

Minimum

Building-level media and technology programs will show evidence that:
- Instruction focuses on student achievement through teacher demonstration of problem solving.
- Instruction is delivered to all students with no variety of method.
- Occasionally Information Skills lessons are planned and taught in correlation with studies in content areas.
- The library media coordinator adheres to a modified flexible schedule and meets occasionally with classroom teachers to plan cooperatively.
- Students have limited access to the Internet and electronic databases.

Developing

Building-level media and technology programs will show evidence that:
- Instruction focuses on student achievement with the learner involved in problem solving and assessment to promote life-long learning.
- Instruction is delivered to students in various formats.
- Information skills are taught primarily within curriculum content areas.
- The library media coordinator meets regularly with teachers to cooperatively plan curriculum and learning experiences in a flexibly scheduled environment.
- Students have access to the Internet, electronic databases, and other resources on high-speed networks throughout the school.

Outstanding

Building-level media and technology programs will show evidence that:
- Instruction focuses on student achievement with the learner involved in self-directed problem solving and self-assessment to promote life-long learning.
- Instruction is delivered to students in a variety of formats based on learning styles.
- Instruction is given in locating, gathering, selecting, synthesizing, and evaluating relevant information in all curricular areas.
- The library media coordinator collaborates with teachers through formal planning sessions to develop, implement, and evaluate learning experiences in a flexibly scheduled environment.
- Students have access to the Internet, electronic databases, and a variety of other resources on high-speed networks throughout the school.

Teaching and Learning

Staff Development

Minimum

Building-level media and technology
staff development program shows evidence that:
- The staff development program is planned by the technology facilitator and media coordinator.
- Appropriate staff development opportunities are available occasionally for the technology facilitator and media coordinator.
- Staff development opportunities are offered only at scheduled times.
- Staff development offerings sometimes correlate with technology competencies for educators.

Developing

Building-level media and technology
staff development program shows evidence that:
- The staff development program is planned, delivered, and evaluated by the technology facilitator and media coordinator.
- Appropriate staff development opportunities are available for the technology facilitator and media coordinator, which include conference attendance.
- Staff development opportunities are offered at time of personal need.
- Staff development offerings correlate to technology competencies for educators.

Outstanding

Building-level media and technology
staff development program shows evidence that:
- The staff development program is planned, delivered, and evaluated collaboratively by a committee with representatives from a variety of roles including the technology facilitator, media coordinator, teachers, administrators, students, IHE faculty, and support personnel. Staff development participants are involved in the evaluation process.
- Appropriate staff development opportunities for the technology facilitator and media coordinator, which include training in emerging technologies and conference attendance, are a part of the school staff development plan.
- Staff development opportunities are offered at time of personal need, with opportunities for practice built into the schedule.
- Staff development offerings correlate to technology competencies for educators and meet licensure and renewal requirements.

Teaching and Learning

Collaboration

Minimum

Building-level media and technology programs show evidence that:
- Collaborative planning, evaluation, and instruction is a team effort between the technology facilitator, media coordinator, and teachers.
- Collaborative efforts are based on the best available models of instruction to develop instructional partnerships.

Developing

Building-level media and technology programs show evidence that:
- Collaborative planning, evaluation, and instruction to show specific links between information literacy and content is a team effort between the technology facilitator, media coordinator, teachers, support personnel, pre-service interns, administrators, and students.
- Collaborative efforts are based on the best available models of instruction, collaboration, and cooperative learning to develop strong instructional partnerships that lead to student development of critical thinking and problem-solving skills.

Outstanding

Building-level media and technology programs show evidence that:
- Collaborative planning, evaluation, and instruction to show specific links between information literacy and content is a team effort between the technology facilitator, media coordinator, teachers, support personnel, pre-service interns, administrators, and students.
- Collaborative efforts are based on the best available models of instruction, collaboration, and cooperative learning to develop strong instructional partnerships that lead to student development of critical thinking and problem-solving skills.

193

Information Access and Delivery

Program Outcomes

Outstanding Information Access and Delivery at the building level:

- Supports the diverse needs of learners and teachers with access to collections of high-quality resources, equipment, and facilities for classroom activities and personal or professional interests.

Rubric Topics

1. Needs Assessment
2. Managing Resources
3. Designing Facilities for Teaching and Learning

Strategies to Guide Work

- Collaborate with the entire instructional team.
- Lead with vision.
- Utilize media and technology resources.

194

Information Access and Delivery

Needs Assessment: People and Process

Minimum

Building-level media and technology programs include:
- A Media and Technology Advisory Committee that includes the media coordinator and the technology facilitator.
- A Media and Technology Advisory Committee that meets at least quarterly to assess and report needs to school administration related to media and technology resources for teaching and learning.

Developing

Building-level media and technology programs include:
- A Media and Technology Advisory Committee that includes the media coordinator, the technology facilitator, and representative teachers.
- A Media and Technology Advisory Committee that advocates for the technology and media programs within the school.
- A Media and Technology Advisory Committee that meets at least quarterly to assess needs and make recommendations for budget allocations related to media and technology resources for teaching and learning and justifies budget requests to school administrators.
- A Media and Technology Advisory Committee that develops a plan supported by an adequate yearly budget to maintain, update, and expand the school's resources.

Outstanding

Building-level media and technology programs include:
- A Media and Technology Advisory Committee that includes the media coordinator and the technology facilitator.
- A Media and Technology Advisory Committee that advocates for the technology and media programs within the school.
- An active Media and Technology Advisory Committee that meets at least monthly to assess needs and make decisions regarding budget allocations based on a resource development plan supported by adequate yearly budget to maintain, update, and expand the school's resources.

Information Access and Delivery

Managing Resources

Minimum

Building-level media and technology programs include:
- A diverse collection that supports teaching and learning;
- A diverse collection that meets the needs of diverse learning styles, multicultural backgrounds, physical challenges (assistive/adaptive devices, etc.), and building-level professionals;
- Resources that are selected and acquired according to local board-approved policy and established criteria for various media formats.
- An organized collection of resources, including technology-based materials and equipment, that is cataloged and circulated using standard library conventions.
- Access to technology and resources on local area networks.
- An accurate, automated inventory based on <u>annual</u> procedures for adding new materials and equipment and weeding/discarding out-dated and worn items.

Developing

Building-level media and technology programs include:
- A diverse collection that supports teaching and learning and students' personal interests.
- A diverse collection that meets the needs of diverse learning styles, multicultural backgrounds, physical challenges (assistive/adaptive devices, etc.), and building-level professionals.
- Resources that are selected and acquired by formally assessing needs (e.g., curriculum mapping) and following the local board-approved policy and established criteria for various media formats.
- An organized collection of resources, including technology-based materials and equipment, that is cataloged and circulated through an automated system.
- Access to state-of-the-art technology and resources on local area networks.
- An accurate, automated inventory based on <u>annual</u> procedures for adding new materials and equipment and weeding/discarding out-dated and worn items.

Outstanding

Building-level media and technology programs include:
- A diverse collection that supports teaching and learning and students' personal interests.
- A diverse collection that meets the needs of diverse learning styles, multicultural backgrounds, physical challenges (assistive/adaptive devices, etc.), and building-level professionals.
- Resources that are selected and acquired by formally assessing needs (e.g., curriculum mapping) and following building-level selection policy based on the local board-approved model and established criteria for various media formats.
- An organized collection of resources, including technology-based materials and equipment, accessible through a district-wide Union catalog and circulated through an automated system.
- Access to state-of-the-art technology and resources on local and wide area networks.
- An accurate, automated inventory based on *annual* procedures for adding new materials and equipment and weeding/discarding out-dated and worn items.

Information Access and Delivery

Designing Facilities for Teaching and Learning
Minimum

Building-level media and technology programs include:
- Opportunities for technology and media staff to make initial suggestions during the planning of new, renovated, or repurposed facilities (i.e., space, design, and furniture considerations) that focus on accessibility, flexibility, and efficiency necessary to provide opportunities for teaching and learning as well as media and technology administrative needs.
- Infrastructure and connectivity that meet current State Technology Plan and Information Resources Management standards.

Developing

Building-level media and technology programs include:
- Opportunities for technology and media staff to offer advice on a regular basis for planning, renovated, or repurposed facilities (i.e., space, design, and furniture considerations) that focus on accessibility, flexibility, and efficiency necessary to provide opportunities for teaching and learning as well as media and technology administrative needs.
- Infrastructure and connectivity that meet current State Technology Plan and Information Resources Management standards.
- A plan supported by an adequate yearly budget to maintain infrastructure and connectivity.

Outstanding

Building-level media and technology programs include:
- Opportunities for technology and media staff to play an ongoing and active role throughout the planning and construction phases of, renovated, or repurposed facilities (i.e., space, design, and furniture considerations) that focus on accessibility, flexibility, and efficiency necessary to provide opportunities for teaching and learning as well as media and technology administrative needs.
- Infrastructure and connectivity that meet current State Technology Plan and Information Resources Management standards.
- An implementation plan for growth and expansion that is supported by an adequate yearly budget to support the evolution of developments in state-of-the-art technology.

Program Administration

Program Outcomes

Outstanding Program Administration at the building level results in:
- Media and technology programs that are an integral part of the school curriculum.
- Open access to facilities with stimulating atmospheres, high-quality resources, and state-of-the-art technology.
- Enhanced student learning through collaborative planning with teachers.

Rubric Topics

1. Policy and Procedures
2. Planning
3. Budget and Resources
4. Communication and Public Relations
5. Evaluation
6. Personnel

Strategies to Guide Work

- Collaborate with the entire instructional team.
- Lead with vision.
- Utilize media and technology resources.

198

Program Administration

Policy and Procedures

Minimum

Building-level media and technology programs provide:
- Policies and procedures that have been approved by the school board.
- Access to resources and opportunities for research and instruction for each class at least once a week.
- Barrier-free access to the library media center and its collection as well as access to building-level electronic resources during the instructional day to support learning.

Developing

Building-level media and technology programs provide:
- Policies and procedures that have been approved by the school board.
- Equal and open access to resources throughout the day at point of need and opportunities for research and instruction for each class at least once a week.
- Barrier-free access to the library media center facility and its collection as well as access to building-level, national, state, and district-wide electronic resources during the instructional day to support learning.

Outstanding

Building-level media and technology programs provide:
- Policies and procedures that have been established specifically for the school, based on school board approved models.
- Flexibly scheduled programs that provide equal and open access to resources and instruction that integrate with classroom goals and objectives at point of need.
- Barrier-free access to the library media center's facility and its collection as well as access to building-level, national, state, and district-wide electronic resources before, during, and after the instructional day to support learning.

199

Program Administration

Planning

Minimum

Building-level media and technology staff:
- Develop and implement short-term plans, with the Media and Technology Advisory Committee, for collection development and the integration of media and technology programs into the total school instructional program to enhance student learning.
- Participate in at least one school-based committee.
- Participate in planning for instruction at the request of teachers.

Developing

Building-level media and technology staff:
- Develop and implement short-term plans, with the Media and Technology Advisory Committee, for collection development and the integration of media and technology programs into the total school instructional program to enhance student learning.
- Participate in district and school-based planning committees.
- Collaboratively plan with teachers at regular intervals throughout the year to help students become independent learners who can solve problems, think critically, and evaluate information from a wide variety of resources.
- Monitor planning processes and results throughout the year.

Outstanding

Building-level media and technology staff:
- Develop and implement long-term and short-term plans, with the Media and Technology Advisory Committee, for collection development and the integration of media and technology programs into the total school instructional program to enhance student learning.
- Act as change agents by continuously building partnerships and participating in school and district-based planning committees.
- Continuously plan with teachers to help students become independent learners who can solve problems, think critically, and evaluate information from a wide variety of resources.
- Continuously monitor planning processes and results, prioritizing, and adapting long and short-term goals and strategies based on feedback and input.

200

Program Administration

Budget and Resources

Minimum

Building-level media and technology staff:
- Provide a balance of print, multimedia, and electronic resources, based on local board-approved selection policies, that support the *North Carolina Standard Course of Study* and the needs of the student population.
- Provide access to technology and resources on local area networks.
- Encumber allocated funds by established deadlines.
- Solicit additional funding from school-based sources such as PTA/PTOs.
- Plan for short-term budget needs, and accurately track and report budget expenditures from all sources.

Developing

Building-level media and technology staff:
- Provide a balance of print, multimedia, and electronic resources, based on local board-approved selection policies, which support the *North Carolina Standard Course of Study* and the needs of the student population.
- Provide access to state-of-the-art technology and resources on local area networks.
- Advocate for adequate funding for media and technology programs to provide sufficient resources that are current and relevant to meet the needs of students and staff.
- Encumber allocated funds by established deadlines.
- Secure additional funding by writing grants and soliciting funding from school-based sources such as PTA/PTOs.
- Plan for short-term budget needs, and accurately track and report budget expenditures from all sources.

Outstanding

Building-level media and technology staff:
- Provide a balance of print, multimedia, and electronic resources, based on local board-approved selection policies, that support the *North Carolina Standard Course of Study* and the needs of the student population.
- Provide access to state-of-the-art technology and resources on local and wide area networks.
- Advocate for adequate funding for media and technology programs to provide sufficient resources that are current and relevant to meet the needs of students and staff.
- Encumber allocated funds by established deadlines.
- Secure additional funding by actively seeking out and writing grants, and soliciting funding from other sources such as PTA/PTOs, local community organizations, and businesses.
- Plan for long and short-term budget needs, and accurately track and report budget expenditures from all sources.

Program Administration

Communication and Public Relations

Minimum

Building-level media and technology staff:
- Create and maintain facilities to allow easy access to materials and electronic information by students and teachers.
- Foster interpersonal relations with students and staff to encourage collaboration, communication, and the sharing of ideas and strategies that support the total instructional program.
- Publicize the contributions and resources of media and technology programs through at least one vehicle (such as Web pages, newsletters, board presentations, displays, special events, etc.) at certain times of the year.

Developing

Building-level media and technology staff:
- Create and maintain inviting and stimulating facilities that enhance access to materials and electronic information by students and teachers.
- Foster interpersonal relations with students and staff to encourage collaboration, communication, and the sharing of ideas and strategies that support the total instructional program.
- Advocate for the needs of media and technology programs by participating in professional organizations.
- Publicize the contributions and resources of media and technology programs through several vehicles (such as Web pages, newsletters, board presentations, displays, special events, etc.) at certain times of the year.

Outstanding

Building-level media and technology staff:
- Create and maintain inviting and stimulating facilities that enhance access to materials and electronic information by students and teachers.
- Continuously foster interpersonal relations with students and staff to encourage collaboration, communication, and the sharing of ideas and strategies that support the total instructional program.
- Advocate for the needs of media and technology programs by participating in professional and local community organizations.
- Continuously publicize the contributions and resources of media and technology programs through a broad range of vehicles such as Web pages, newsletters, board presentations, displays, and special events.

Program Administration

Evaluation

Minimum

Building-level media and technology staff:
- Utilize quantitative measures to document the provision of media and technology resources and program initiatives.
- Prepare end-of-the-year reports that describe program initiatives and document expenditures.

Developing

Building-level media and technology staff:
- Utilize quantitative measures to document the provision of media and technology resources and program initiatives.
- Provide documentation/evidence of major services related to program administration and integration of media and technology with the instructional program for performance evaluation.
- Prepare monthly and/or end-of-the-year reports that describe program initiatives and document expenditures.

Outstanding

Building-level media and technology staff:
- Utilize qualitative and quantitative measures to document and evaluate how media and technology resources and program initiatives meet the needs of students and teachers.
- Provide documentation/evidence of the broad spectrum of services related to program administration and integration of media and technology with the instructional program for performance evaluation.
- Prepare monthly and/or end-of-the-year reports that include information such as program initiatives, document expenditures, and that outline areas of need for the up-coming year.

203

Program Administration

Personnel	
ADM	Recommended *minimum* staffing for each school based on average daily membership (ADM)
1-500	• 1 full-time library media coordinator • 1 full-time technology facilitator • ½ media assistant • ½ technology assistant
501-1000	• 1 full-time library media coordinator • 1 full-time technology facilitator • 1 full-time media assistant • 1 full-time technology assistant.
1001-1500	• 2 full-time library media coordinators • 2 full-time technology facilitators • 1½ media assistants • 1½ full-time technology assistants
1501-2000	• 2 full-time library media coordinators. • 2 full-time technology facilitators • 2 full-time media assistants • 2 full-time technology assistants

204.

System-level Leadership and Support

Program Outcomes

Outstanding system-level leadership applies planning, resources, policies, and procedures to:

- Support the integration of media and technology into the instructional program.
- Provide equitable access to all resources.

Rubric Topics

1. Standards, Policy, and Procedures
2. Advocacy
3. Planning
4. Budget
5. Resources
6. Personnel

Strategies to Guide Work

- Collaborate with the entire instructional team.
- Lead with vision.
- Utilize media and technology resources.

205

System-level Leadership and Support

Standards, Policy, and Procedures

Minimum

System level professional staff is provided to:
- Interpret national, state, and local standards.
- Recommend policy (for board approval) and/or procedures.
- Coordinate system level media OR technology professional development (with little evidence of curriculum integration).

Developing

System level professional staff is provided to:
- Interpret national, state, and local standards.
- Recommend policy (for board approval) and/or procedures.
- Coordinate school library media and technology programs' professional development, encouraging curriculum integration.

Outstanding

System level professional staff is provided to:
- Coordinate all LEA school library media and technology programs.
- Interpret national, state, and local standards.
- Recommend policy (for board approval) and/or procedures. and coordinate technology compatibility to facilitate the sharing of instructional resources and access by patrons at the point of need.
- Coordinate instructional and professional development efforts with LEA curriculum administrators to ensure curriculum integration of media and technology across all subject areas and grade levels.

206

System-level Leadership and Support

Advocacy

Minimum

System level professional staff is provided to:
- Advocate for school library media and technology programs.
- Ensure equity across the system.
- Participate in the hiring of personnel.
- Write grants when directed.

Developing

System level professional staff is provided to:
- Advocate for school library media and technology programs by aggregating research to show the impact of media and technology programs.
- Ensure equity across the system.
- Recruit and mentor personnel.
- Write grants.

Outstanding

System level professional staff is provided to:
- Advocate for school library media and technology programs by planning, implementing, and aggregating research to show the impact of media and technology resources and programs.
- Ensure equity across the system.
- Recruit and mentor personnel.
- Actively seek out and write grants.

207

System-level Leadership and Support

Planning

Minimum

System level professional staff is provided to:
- Facilitate the standardization of hardware.
- Implement LEA infrastructure and connectivity.
- Respond to inquiries about the planning of new and the renovation of existing school system facilities.

Developing

System level professional staff is provided to:
- Facilitate the standardization of resources and hardware.
- Implement LEA infrastructure and connectivity.
- Advise in the planning of new and the renovation of existing school system facilities at regular intervals.

Outstanding

System level professional staff is provided to:
- Facilitate the standardization of resources and hardware.
- Facilitate the planning for and overseeing of LEA infrastructure and connectivity.
- Play an active role in the planning of new and the renovation of existing school system facilities.

Page 200

System-level Leadership and Support

Budget

Minimum

System level professional staff is provided to:
- Develop yearly budget for school library media and technology programs.
- Offer advice about individual school library media and technology budgets.
- Encourage individual school collection development plans.

Developing

System level professional staff is provided to:
- Develop short-term and yearly school library media and technology plans.
- Offer advice about individual school library media and technology budgets.
- Offer consultation services that encourage individual school collection development plans.
- Make available general information about the Total Cost of Ownership of all hardware and infrastructure/connectivity purchases.

Outstanding

System level professional staff is provided to:
- Develop long-range, short-term, and yearly school library media and technology plans.
- Offer advice about individual school library media and technology budgets.
- Consult and assist in writing individual school collection development plans.
- Calculate Total Cost of Ownership of all LEA hardware and infrastructure/connectivity purchases and assist with the development of more accurate operational budgets.

209

System-level Leadership and Support

Resources
Minimum
System level professional staff is provided to: • Organize and manage LEA training labs OR professional libraries.
Developing
System level professional staff is provided to: • Organize and manage LEA training labs and professional libraries. • Organize and manage production facilities and collection resources.
Outstanding
System level professional staff is provided to: • Organize and manage LEA training labs and professional libraries. • Organize and manage production facilities and collection resources. • Organize and manage centralized processing.

Personnel	
# Schools in System	**Recommended Staffing:**
1-5	• 1 Director/Coordinator for both media and technology, with other district duties.
6-15	• 1 Director/Coordinator for both media and technology, with "lead teachers" for each school level that have only part-time teaching responsibilities.
16-50	• 1 Director/Coordinator for school library media programs. • 1 Director/Coordinator for technology programs.
50+	• 1 Director/Coordinator for media/technology at the Associate Superintendent's level. • 1 School Library Media Programs Supervisor • 1 Instructional Technology Supervisor

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211

Glossary

Amortization

Relates to gradually writing off the cost of an asset. Since computer technology typically has a three-year life span, school systems are encouraged to gradually budget replacement cost.

Assistive/adaptive devices (hardware)

"...any item, piece of equipment or product system, whether acquired commercially off the shelf, modified or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities." [IDEA: 20 U.S. C. Chapter 33, Section 1401 (25)]

AUP (Acceptable Use Policy)

Policy designed to limit the ways in which a computer or network can be used, including access to the Internet. Acceptable Use Policies (AUPs) usually include explicit statements about the required procedures, rights, and responsibilities of a technology user as well as the consequences of inappropriate use. Users are expected to acknowledge and agree to all AUP stipulations as a condition of system use, as certified on the AUP by the user's signature.

Barcode

Pattern of bars of various widths and spacing printed on paper or similar material that can be used to identify equipment, books, and other resources.

Barcode scanner

Device that uses a laser beam or light source to read a pattern of bars of various widths and spacing printed on paper or similar material (barcode).

Battle of the Books

Competition sponsored by the North Carolina Association of School Librarians and the Children's Services Section of the North Carolina Library Association for 6-8 grade students who participate in a Quiz Bowl-style tournament that tests their knowledge of a list of books established by the NCASL's Battle of the Books Committee.

CADware

Computer-assisted drawing software.

Change agent

Role of instructional technology facilitators and school library media coordinators who act as catalysts for educational reform by providing leadership and by being proactive in directing and overseeing the change process.

CLI (Compression Labs International)

Device that takes the incoming, coded signal from a satellite and decodes it for viewing on a television/monitor. The device can also be used to change incoming satellite channels and to trouble-shoot problems. The letters CLI stand for the company that originally manufactured the devices.

212

Codec
Any technology for compressing and decompressing data.

Collaboration
Process whereby all educators work together to develop, implement, evaluate, and revise teaching strategies with the goal of enhancing student learning.

Collection
All of the resources (print, nonprint, software, Web sites, and equipment) that come together to facilitate and impact learning. The media center collection consists of all the books, videos, software, and realia cataloged in the school, even if they are part of a classroom collection; the computers in classrooms that are inventoried through the media center; and equipment such as overheads and VCRs that are distributed from the media center at the beginning of/throughout the school year.

Collection development
Process of acquiring resources to build a collection that meets the needs of the curriculum and the instructional process.

Collection development plan
Plan based on the analysis of the present collection that addresses future needs in a systematic and long-term manner.

Collection mapping
Qualitative method of assessing a collection by direct examination for alignment with curriculum topics, instructional units, etc., and by comparison with standard selection sources, bibliographies, etc.

Connectivity
Refers to the physical ability to transfer information, to provide data exchange, and to communicate. As a concept, it refers to the basic "throughput" of electronic communication.

Consideration files
Any collection (cards, database, hard copies of documents, etc.) that represents information about materials to be ordered drawn from review sources, bibliographies, recommendations from teachers, etc.

CTO
Chief Technology Officer who supervises an information systems department.

Cultural pluralism
Respect for and representation of diversity in ethnicity, religious orientation, cultural traditions, etc.

Deployment procedures
Procedures used in the process of disseminating software and hardware within a school.

Distance learning education
Instruction that takes place when teachers and students are geographically separated but linked via telecommunications technologies within a school system, across a state or states, or internationally.

213

Downlink

In satellite communications, a link from a satellite to one of its earth stations.

E-Rate

Federal Universal Service Fund providing telecommunications discounts to eligible schools and libraries.

Electronic database

Computer-based collection or listing of information, usually organized with searchable elements or fields. For example, a library catalog is a database that can be searched by author, title, subject, keyword, etc.

Facilitator

Instructor or teaching assistant who involves students in the process of learning in a distance education environment.

Facilities planning

Process of planning spaces for the diverse learning activities, resources, equipment, technical functions, and program services that are necessary for dynamic media and technology programs in schools. Planning includes a thorough description of each space and all the desired elements within it, as well as the development of educational specifications to communicate the function and requirements of each space to the architects, designers, and engineers who are responsible for creating new or renovated facilities.

Flatbed scanner

Device that converts a printed page or image into an electronic representation that can be viewed and manipulated on a computer. Scanners are often used to convert photographs into electronic versions so that they can be included in documents created on a computer.

Formative evaluation

Ongoing process of assessment that enables participants to modify their current methods/behavior to achieve goal(s) successfully.

Hard drive requirements

Amount of storage space needed on a computer to load and run an application or to store the data generated by an application.

Head-end

Location within a building where satellite/video signals either originate or are collected via satellite or other sources, and made available for use within the facility. The head-end room contains all the hardware needed to decode and transmit the incoming signals throughout a facility.

Hubs

Common connection point for devices in a network.

Information Technology (IT)

Term that encompasses all forms of technology used to create, store, exchange, and manipulate information in its various forms (business data, voice input, still images, motion pictures, multimedia presentations, and other forms including those not yet conceived). The term is often used for encompassing both telephony and computer technology together. Information Technology is driving what has often been called "the information revolution."

214

Infrastructure
In technology, the underlying mechanism or system by means of which voice, video, and data can be transferred from one site to another and be processed.

Intellectual freedom
Concept that stands for freedom of access to information and ideas without barriers that would limit inquiry. Intellectual freedom is a fundamental right that is upheld by the policies and procedures of media and technology programs within a school.

Internet
Network of wires and satellite connections that links computers worldwide for the purpose of communication and the sharing of information.

Just-in-Time staff development
Timely and ongoing support for teachers as they attempt to acquire new skill, such as learning to use a new software program or a digital camera. This type of staff development is usually provided one-on-one.

LAN (Local Area Network)
Interconnected system of computers and/or peripheral equipment (e.g., printers) that is confined to a limited area, such as a room, building, or campus, enabling connected users to communicate and share information and resources.

Laserdisc
Optical disc that stores information readable by a laser beam. Laser discs can also be used to store data, but are usually used for video and audio together.

LEA
Local education agency representing all the schools in a school system.

Management system
Computer-based system used to track, record, and report student progress on a particular application or set of applications. Management systems can also provide appropriate interventions that meet the individual needs of a student.

Manipulatives
Learning materials that are operated with the hands to help students understand concepts.

MARC (Machine-readable Cataloging)
Uniform standard for the electronic cataloging of materials developed by the Library of Congress.

Microform reader
Device used to read printed matter that has been reduced in size.

Midis
Acronym for musical instrument digital interface, a standard adopted by the electronic music industry for controlling devices, such as synthesizers and sound cards, that emit music.

Multimedia computer
Computer used to present text, graphics, video, animation, and sound in an integrated manner.

215

Multimedia data/video projection device
Device connected to the video-out port on a computer or other multimedia equipment (e.g., a VCR or laserdisc player) in order to project an enlarged display of the computer screen or other multimedia input.

The North Carolina Children's Book Award
Award sponsored by NCASL and the Children's Services Section of the North Carolina Library Association designed to encourage elementary students to read the works of excellent writers for children, to promote a love of reading, and to recognize the books and authors that children enjoy reading. There are two award categories: picture book and junior book.

North Carolina Technology Competencies for Educators
Established for all North Carolina educators in order to use information technologies to support effective teaching and enhance overall teacher productivity. The competencies are divided into two sections: Basic Technology Competencies and Advanced Technology Competencies. The competencies were part of the School Technology Users Task Force Report (October 1995). The Task Force represented K-12 educators, community college representatives, and university staff.

NC WISE

(North Carolina Window of Information for Student Education)
New computer-based system that tracks data such as student attendance and grade reporting for the schools in the state of North Carolina. NC WISE replaces the SIMS system and is being implemented according to a three-year phase-in schedule from 2000 to 2004.

Online catalog
Electronic catalog of the media center's collection of materials that features a search interface and is accessible through a local or wide area network.

OPAC (Online Public Access Catalog)
Electronic catalog of the media center's collection of materials that features a search interface and is accessible through a local or wide area network. The term is sometimes used to refer to the computer workstation in a media center that accesses the online catalog.

Paraprofessionals
Staff who are appropriately trained to perform duties to assist the school library media coordinator or technology facilitator. Paraprofessionals work along with professionals to provide support for program and administrative duties, including direct or indirect services for students, teachers, and parents. These positions include: school library media assistant, technology assistant, computer laboratory technical assistant, and distance learning facilitator.

Peripheral
Any external device attached to a computer such as a printer or scanner.

Portable text devices
Electronic keyboards that enable users to input, edit, and store text that can be uploaded to a computer or printed (e.g., DreamWriter and AlphaSmart).

216

Probeware
> Devices that are connected directly to a computer, or through other interfaces that are connected to a computer, allowing data to be entered directly into a software program. These devices are typically used to take measurements or readings for math and science instructional applications.

Quiz Bowl
> Competition for grades 9-12 sponsored by the State Library of North Carolina. Two teams of four students, coached by a teacher/media coordinator, compete against each other, answering questions geared to the curriculum and general knowledge. There are three rounds: 10 point (individual), 20 point (consultation), and 30 point (consultation). Winning teams may compete at the local, regional, and state levels.

Realia
> Real objects such as seashells, rocks, feathers, etc. that can be handled by students to aid learning.

Research-based models of staff development
> Strategies for staff development that have proven successful through research, such as "Skill-Training" wherein a teachers are trained, then practice skills learned and receive feedback in order to transfer skills to their own classrooms.

Retrospective conversion
> Conversion of the print catalog of records for the media center's collection to an electronic database in MARC (machine-readable) format.

Router
> Device that connects any number of networks.

Rubrics
> Authentic scoring mechanism for the evaluation of a learning activity or project that provides assessment guidelines and a rating scale for determining levels of quality. Rubrics are based on criteria for completing a task.

School Improvement Plan
> Annual plan correlated to the ABCs of Public Education and based on the analysis of student test scores and input from surveys of teachers, parents, and students. The plan outlines strategies for improving student performance and/or addressing specific strategies of the ABCs goals.

Selection policy
> Policy that outlines the principles that guide professionals in the development of a collection to support teaching and learning. It also describes techniques for maintaining the collection through collection mapping, weeding, and inventory, as well as the process for dealing with challenges to materials in the total instructional program.

SIMS (Student Information Management System)
> Computer-based system that tracks data such as student attendance and grade reporting for the schools in the state of North Carolina. The current SIMS system will be replaced by the NC WISE (North Carolina Window of Information for Student Education) system over a three-year period according to a phase-in schedule from 2000 to 2004.

217

Software license

Agreement that allows an individual or group to legally use a software program.

Speech synthesis software

Also known as Text-to-Speech: Computer software that translates text into audio format. More sophisticated versions of this type of software produce natural sounding speech with a choice of male or female voices.

Summative evaluation

Assessment that takes place after the implementation of a procedure, activity, etc., and using a variety of methods.

TCO (Total cost of ownership)

Model for calculating all of the expenses associated with deploying, maintaining, and troubleshooting a personal computer in the workplace or educational setting. Strategic decisions on how to build, support, and control costs of technology can be made with this information. In education, these costs include professional development, support, connectivity, software, replacement costs, and retrofitting.

Technology user group

Group of individuals with similar interest or similar positions in the area of technology. These individuals come together at regular meetings, or use a LISTSERV via email, to share ideas, offer solutions to each other's problems, or to provide other forms of support. Such groups afford excellent opportunities for training and awareness sessions to be offered on special topics of interest to the entire group.

Telecommunication

Exchange of voice, video, or data through digital or analog electromagnetic or electronic signals (e.g., radio, telephone, television, facsimile, computer/modem).

Term contract

Agreement between an organization and a vendor that provides for stable prices for the procurement of resources from the vendor for a period of time as stated in the contract. Term contracts usually contain service agreements for the purchased resources and stipulations of penalties if the vendor does not uphold conditions of the contract.

TLCF (Technology Literacy Challenge Fund)

Federal program that provides formula grants to states to accelerate the implementation of statewide educational technology plans by providing financial assistance through the states to local school systems. State education agencies and local education agencies are encouraged to use this assistance to leverage additional support from business and industry and other public and private entities, including museums, libraries, and institutions of higher education to use technology to improve America's schools.

Touch screen

Hardware device enabling students to provide input by touching areas of the screen (such as pictures or words) rather than using a keyboard or mouse.

Union catalog

Electronic catalog of the combined media center collections of multiple schools or an entire school system.

Video streaming

Video with synchronized sound sent in compressed form over the Internet to be viewed in a continuous stream. A special program called a "player" is needed to decompress and view streamed data.

Virus

Computer program that destroys data, unnecessarily ties up resources, or otherwise damages a system. Viruses are often able to replicate themselves and can therefore be passed from one computer or network to another via file transfers (analogous to how a biological virus is passed from one host to the next).

Virus protection

Software program used to detect, diagnose, and destroy computer viruses.

Voice-input technologies

Software and hardware that enables a computer to recognize and carry out voice commands.

WAN (Wide Area Network)

Interconnected system of computers and networks (including local area networks) that surpasses local area networks in scope (e.g., WANs can span building to building, city to city, nationally, and internationally). These data communications linkages (e.g., dedicated lines and radio waves) are designed to allow large numbers of users to communicate and access information.

Web site

Single online resource containing hyperlinked information that can be accessed over the World Wide Web (WWW).

Weeding

Essential component of collection development where materials that are no longer accurate, relevant to the curriculum, or in usable condition are identified and discarded.

219

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234
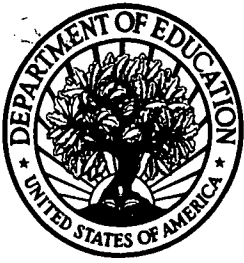
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EFF-089 (9/97)