Bursting with Potential:
Mixing a Media Specialist's Palette

By Annette Lamb

Abstract

School media specialists must be teachers, leaders, and advocates for reading, inquiry, and learning. Partnering with classroom teachers, they must design and implement curriculum and instruction that prepare young citizens for a life that requires thinking, inquiry, problem-solving and ethical behavior. These experiences provide the foundation for all content-area learning. In order to be prepared for a constantly changing environment, professionals need to revisit, reframe, and re-imagine knowledge, skills, attitudes, and dispositions. In this article, the author presents six tools that form a media specialist's palette to help them meet these challenges. Along with these tools, specific ideas and examples are presented that illustrate how this palette of tools can be used in the media center on a daily basis.

Keywords: School Media Specialist, Strategies, Technology

Our elementary school students are creating a weekly streaming news program. Our middle school online book club has expanded to include community members. The senior project requirement has morphed into an exciting collaborative service project.

Like a painter, a media specialist uses a palette to mix elements and create meaningful learning experiences.

The 21st century school media specialist is much more than an information technologist, administrator, and teacher. On any day, he or she may be a curriculum consultant, community collaborator, or digital detective. Many of the basic skills required of a media specialist have evolved over the past several decades. In addition, today's media specialist is facing a growing number of new challenges and increasing pressures to shift from traditional materials and services to a much broader range of resources and responsibilities.

Budgets are squeezed, students are pressured to perform, and classroom teachers are stressed. While negative energy is flowing through some schools, positive forces are providing easy-to-access information sources and increasing opportunities for authentic learning. The potential is present for the transformation of school media programs into a new kind of environment that combines the best of the physical and virtual worlds of learning.

Sharing results from nineteen states and one province, Scholastic's document School Libraries Work! states "an abundance of evidence strongly supports the connection between student achievement and the presence of school libraries with qualified school library media specialists. When library media specialists work with teachers to support learning opportunities with books, computer

resources, and other instructional materials, students learn more, get better grades, and score higher on standardized test scores than their peers in schools without good libraries" (2008, p. 4).

What must effective media specialists know to succeed in today's schools? How will media specialists deal with the explosion of options and opportunities available to teachers and students?

The Big Picture: A Media Specialist's Palette

The Media Specialist's PALETTE

People. Innovative media specialists must shift thinking from broad, face-to-face communications toward focused, virtual interactions.
Administration. Innovative media specialists must shift thinking from managing physical resources toward facilitating information and technology access.
Learning. Innovative media specialists must shift thinking from reacting to outside forces toward modeling innovative thinking and inquiry
Electronic information. Innovative media specialists must shift thinking from providing information access toward facilitating information use.
Technology. Innovative media specialists must shift thinking from piecemeal approaches toward weaving a fabric of technology use throughout the school connecting classroom learning and the school media program.
Teaching. Innovative media specialists must shift thinking from isolated skills instruction toward infused modules across the curriculum.
Environments. Innovative media specialists must shift thinking from place-specific programs toward flexible environments for learning.

Figure 1.

Over the past several years, emphasis has been placed on the importance of highly qualified personnel including school media specialists (Kaplan, 2007). What makes an educator "highly qualified"? Knowledge is only one of four learning goals associated with being an effective media specialist. Professionals must also acquire the skills, attitudes, and dispositions necessary to apply this knowledge in daily life.

Lilian Katz points out "knowledge can be acquired without having the disposition to use it… A disposition is a tendency to exhibit frequently, consciously, and voluntarily a pattern of behavior that is directed to a broad goal" (Katz, 1993, p. 1). In the case of innovation, a media specialist can be said to be innovative if he or she seeks out opportunities to create through study and experimentation. In a 2009 study using the Delphi method, Gail Bush and Jami Jones (2010) identified critical and creative thinking, teaching, leading, collaborating, and lifelong learning as the most important dispositions of school media specialist professionals.

In order to be prepared for a constantly changing environment, professionals need to revisit, reframe, and re-imagine knowledge, skills, attitudes, and dispositions reflecting six areas of a media specialist's PALETTE:

People,
Administration,
Learning,
Electronic information,
Technology,
Teaching, and
Environments.

People

Media specialists must know how to communicate, cooperate, and collaborate with people. From their five-year old clients to each member of the school board, understanding these patrons and partners is the key to an effective school library program.

Whether conveying concerns about mold and mildew to custodial staff or persuading individual school board members to support library funding, the ability to effectively and efficiently communicate is critical to the success of the school media program. Many centers are losing professional positions due to the inability of school media specialists to convince others that professional positions are essential.

It is the responsibility of the media specialist to build a connection with everyone associated with the teaching and learning process. While these associations may still involve meeting some individuals face-to-face, these relationships are increasingly being nurtured electronically. The media specialist must know how to convey their ideas through the use of social and collaborative tools such as electronic mail, instant messages, forums, social networks, and multi-user virtual worlds. They must also be able to design communications such as public service announcements, blog entries, electronic newsletters, video programs, and webcasts. Ruth Small, Kathryn Shanahan, and Megan Stasak (2010) found that media specialists often reach out to the greater community through a variety of programs and services.

The audience for these communications includes everyone from students to members of the community. Media specialists must design focused communications that address the needs of specific groups. Explore the following categories and examples.

- **Students** - providing reference assistance to individual learners and making them feel welcome in the media center
- **Teachers** - modeling effective use of information and technology, suggesting

- innovative approaches and resources, and collaborating on standards-based lessons
- **Support Staff** - scheduling, hiring, training, and developing a positive center atmosphere
- **Student Assistants** - involving young people in the exciting world of librarianship and media production
- **Administrators** - making principals aware of library needs and accomplishments
- **School Board Members** - working through the superintendent, establishing a regular connection through visible activities including meeting attendance and report sharing
- **Curriculum Directors** - connecting with standards and data, suggesting innovative resources, and collaborating on curriculum mapping activities
- **Technology Consultants** - collaborating on system-wide initiatives, participating on technology committees, and sharing information about intellectual freedom
- **Advisory Board Members** - suggesting new initiatives such as online audio book checkout, guiding fund-raisers such as book fairs, and reviewing center policies
- **Parents** - coordinating parent-child reading activities, communicating events and programs, and suggesting home literacy and inquiry projects
- **Community Members** - encouraging center use for community arts programs, connecting with the business community for grant projects, and coordinating activities that connect seniors with children
- **School Volunteers** - promoting volunteerism in the library, connecting reading across the curriculum, and encouraging school wide programs such as fitness and nature observations
- **Other School Officials** - encouraging sharing of resources and collaborative programs across school buildings and districts
- **Public Librarians** - building collaborative after-school and summer programs, encouraging career and beyond school use of the public library, and promoting student participation in life-long learning events
- **Global Connections** - developing programs that connect to global special guests such as scientists and government officials, joining large-scale projects such as the Iditarod or Olympics, and participating in social networks that connect young people with authentic learning activities
- **Government and Grant Officers** - building relationships with local officials, connecting with federal grant opportunities, and seeking out opportunities to build programs
- **Vendors** - seeking innovative products and approaches, asking for special discounts and opportunities to test new products, and bringing the best quality educational resources into the school
- **Library and Technology Professionals** - learning from others and sharing professional expertise.

From participating in book clubs to demonstrating the value of new resources and technologies, the school media specialist must model and promote the joy of learning. Each new generation of students enters the library media center with unique experiences, preferences, and behaviors. Regardless of the differences, an understanding of learning styles, maturation levels, and special needs is essential. Whether applying knowledge of gender differences in helping a child select a book or recognizing an issue with reading level in the use of an electronic database, the media specialist must know how to quickly assess the needs of students and apply this knowledge to an individual or large group situation. The media specialist must understand the perspective of digital natives, the pros and cons of multitasking, and the impact of social technology on student interaction.

The potential is present for the transformation of school media programs into a new kind of environment that combines the best of the physical and virtual worlds of learning.

The media specialist needs to see the "big picture" related to school activities and initiatives. Gary Hartzell (2003) stresses the importance of building influence by shaping the perceptions of others. This can be accomplished by getting to know teachers as individuals and then, developing a network of associations. This global perspective allows the media specialist to nurture relationships among individuals who might not otherwise interact. For example, after purchasing a set of GPS devices, the school media specialist might collaborate with the science teacher on a water-testing project. Next, the media specialist could connect the physical education teacher with this science teacher for an environmental

science assignment involving designing a fitness-nature trail through a local wooded area. Students use GPS devices, Google Earth, and plant databases to build an effective route that highlights specific vegetation along the trail. Each project provides the foundation for future activities enabling increasingly complex applications of technology and thinking.

In Taxonomies of the Library Media Program, David Loertscher (2000) describes ten levels of interaction school librarians may have with teachers. From no involvement or simple resource sharing to collaboration and curriculum development activities, each type of relationship requires time and trust. It may take a number of years to develop the type of open, supportive atmosphere necessary for full collaboration. For instance, the media specialist might begin a relationship with a high school teacher by suggesting the use of graphic novels as an alternative to a traditional study of classical literature. Another year the media specialist might team this English teacher with a second grade class learning about elements of a story and visual storytelling.

The school media specialist must be an instructional partner. In the article Why Don't Teachers Collaborate? A Leadership Conundrum, David Piercey (2010) states that collaboration is a "prime determinant of school improvement" (p. 54). He stresses that educational leaders must model the collaboration they want to see.

To be successful, the media specialist must be able to build dynamic relationships, share the vision of the library program and school mission, work with others for the benefit of students, impact the lives of young people directly, and learn from success and failure.

This is a time of transformation. The media specialists must use technology to facilitate and streamline communication. However, at the same time they must focus and personalize interaction to optimize the impact.

Innovative media specialists must shift thinking from broad, face-to-face communications toward focused, virtual interactions.

Administration

Media specialists must know how to administer programs. From writing policies and procedures to managing personnel and writing grants, the media specialist must understand the daily operations of a school library and the impact of these programs on individual students.

Carl Harvey (2010) stresses that library media specialists must be leaders. They have

Figure 2.

the potential to affect student achievement, curriculum, and professional development activities, as well as change the perceptions of school library media programs.

Easy access to information and technology is changing the way services are delivered to patrons. The library media specialist maintains a functioning media center including the selection and organization of materials that support reading, research, and curriculum needs of students and teachers. This requires skills in collection development, curriculum mapping, and information organization.

In the article Promote, Lead & Refuse: Librarianship in Tough Time, Ann Martin (2009) stresses the importance of leadership and an ongoing commitment to library advocacy. Media specialists must enlist the support of stakeholders and promote the library media program as an essential school program.

In addition to providing an effective program, media specialists must also "accept the additional role of school-based researchers and evidence-based practitioners, collecting data from their constituents about their library programs and information services and documenting their effects" (Small, Shanahan, & Stasak, 2010). Melissa Allen and Amy Bradley (2009) suggest the development of portfolios as a way to document activities, share evidence, and justify professional positions in hard economic times.

Areas of skill include:
- **Collection Development** - identifying collection needs based on collection and curriculum data; selecting, organizing, managing, and circulating a wide range of print and electronic materials; and building policies regarding responsible use and reconsideration
- **Programs** - analyzing community needs and making evidence-based programmatic decisions; planning innovative activities and

services; and managing ongoing budgets, grant projects, and fund-raising activities

- **Production** - designing and producing instructional and informational materials and supervising student production of print and electronic materials such as video projects and podcasts
- **Operations** - scheduling use of the center, designing inviting and accessible facilities,
- **Human Resources** - selecting, scheduling, training, and supervising staff, students, and volunteers to assist in activities that support program goals
- **Advocacy** - promoting program goals such as intellectual freedom and inquiry; hosting events that support center goals; and nurturing community advocates.

The administrative role of the school media specialist is changing. Many centers are experiencing decreases in personnel, smaller budgets for print materials, and increasing demands for services. Increasingly, media specialists are asked to take on additional responsibilities becoming supervisors of multiple buildings, study hall monitors, and testing administrators.

The media specialist must identify priorities. This may involve eliminating services that no longer address center goals, shifting thinking and approaches to optimize output, and making radical changes and tough choices to improve program performance. For instance, many media centers are decreasing print subscriptions and shifting to online magazines and electronic databases.

Innovative media specialists must shift thinking from managing physical resources toward facilitating information and technology access.

Learning

Media specialists must know how to learn and understand learners. The world is constantly changing and media specialists must acquire new knowledge, update their skills, and adjust their attitudes. Through reading, inquiry, interactions, and thinking, the media specialist makes important decisions about their patrons and programs every day.

Inquiry is at the center of the learning environment. According to Bush and Jones (2010), "the inquiry stance makes the universe of the school librarian applied and pragmatic". They found inquiry to be the "common thread woven through the majority of dispositions identified."

Media specialists experience tremendous change during their careers. Because the media center is the hub of school innovation and change, a media specialist must be on the cutting-edge of innovative thought. Being a learning specialist requires an ongoing commitment to professional development.

The idea of innovation and inquiry are woven through both the American Association for School Librarians (AASL) and International Society for Technology in Education (ISTE) standards for learning. Jean Sausele Knodt (2010) stresses the importance of building innovation through open-inquiry learning. According to Knodt, creative, innovative thinking moves our culture forward. She advocates designing an open-inquiry lab that will immerse students, teachers, and media specialists in an environment that supports curiosity, problem-solving, and risk-taking.

Chris Watkins (2010) examined more than 100 classroom-based research studies and found that "a focus on learning can enhance performance, whereas a focus on per-formance alone can de-press performance" (p. 4). He stresses that a learning-oriented environ-ment involves active par-ticipation by students, opportunities for coopera-tion, involvement in rulemaking, and flexibility in work style.

It is the responsibility of the media specialist to build a connection with everyone associated with the teaching and learning process.

According to AASL (2009), school libraries are essential to the development of learning skills. School librarians must possess and model these skills including topics such as:

- Meaningful Contexts for Learning
- Reading
- Information Skills
- Inquiry
- Critical and Creative Thinking
- Social Beings: Collaboration, Cooperation, and Communication
- Social Responsibility and Digital

Citizenship

The Framework for 21st Century Learning from the Partnership for 21st Century Skills combines a focus on student outcomes with an innovative support system. It includes three primary areas: life and career skills; learning and innovation skills; and information, media,

and technology skills. All three areas are directly tied to the library goals and program.

Media specialists must cultivate curiosity in children, but they must also be innovators themselves. Rather than waiting for the next technology wave, professionals must actively anticipate change and seek out opportunities to learn.

Innovative media specialists must shift thinking from reacting to outside forces toward modeling innovative thinking and inquiry.

Electronic Information

Media specialists must know how to access, evaluate, organize, and use information. From issues related to intellectual property to selecting age-appropriate curriculum materials, the media specialist must understand information.

School librarians must provide access to information. The management of information is key to the success of a library program. This entails understanding all types and formats of information and how to apply them to address instructional needs. Providing equitable access to information requires that media specialists understand elements of universal design and ensure opportunities for those with physical, emotional, and financial barriers.

Content is now available in many types and formats. A particular work may be available as a hardcover book, e-book, online book, audiobook, or video. The growing popularity of graphic novels, illustrated fiction, and photo-rich nonfiction is enriching print selections. Social, collaborative, and participatory media are expanding these information options further.

Transmedia storytelling "immerses participants in an experience with many entry points that cross media types. Users may even become part of the narrative. The technologies are woven together to create synergy and new ways of thinking about storytelling, information exploration, and virtual worlds" (Lamb & Johnson, 2010). These fluid environments allow information to seamlessly flow from one form of communication to another. Unfortunately, these options can be overwhelming for young inquirers. Although students may be familiar with the technology, they need assistance in understanding how to approach, organize, and apply this type of information and experience.

Providing access to information is just the beginning of a media specialist's evolving role. Students, teachers, and school media specialists need to be able to select, organize, evaluate, assimilate, and draw inferences from these materials. From helping students locate materials at their reading level to helping a group of children integrate public domain photographs into their animation project, the media specialist must balance the necessity of reference assistance with the importance of helping young people become independent information users.

Whether helping teachers with level reading choices, collaborating with high school students on social bookmarks for a history project, or creating a WebQuest to assist learners in an inquiry assignment, the media specialist must work with students and teachers to connect informational needs and curricular goals with effective content choices.

Innovative media specialists must shift thinking from providing information access toward facilitating information use.

Technology

Figure 3.

Media specialists must know how to apply technology to solve problems, acquire information, and create products. From designing a virtual presence for their library to scheduling student assistants, technology plays an important role in today's school library.

In a study of New York school libraries, Ruth Small, Kathryn Shanahan, and Megan Stasak (2010) found that the school media specialist is

often perceived as the technology leader of the school impacting both students' and teachers' use of technology. This impact involves both the use of both traditional and new technology as well as how to integrate these technologies into the curriculum as well as part of life-long learning pursuits.

According to Sandra Hughes-Hassell and Dana Hanson-Baldauf (2008), media specialists recognize the importance of technology competence. However, many face barriers due to lack of resources, time, technical support, infrastructure, and professional development. In a 2007 study of Pennsylvania school media specialists, Donna Snyder and Andrea Miller found a "disconnect between what most SLMSs believe they should be doing with instructional technology and what many find themselves able to do" (2009, p. 24).

Richard Halverson and Annette Smith (2010) found that information technologies have reshaped schools in unanticipated ways. While schools have embraced the use of technology for assessment and other institutionalized priorities, these tools have not made significant changes in curriculum delivery or instructional practices. Halverson and Smith found that much of student technology use is found in the "margins of schooling" in the form of participatory media, video gaming, and social networking. The media specialist is in the unique position to move these interest-based learning communities into the mainstream of teaching and learning.

It's not the technology, but what we do with these tools that impacts learning. A recent study by Project RED (2010) found that frequent use of technology in reading intervention, special education, and other intervention classes reduces dropout rates. They also found that daily use of technology helps young people take control of their own learning and increases student engagement in learning.

Technology impacts all areas of the library media program:

- **Productivity Tools** - writing, calculating, presenting, drawing, concept mapping, animating, web page makers, wikis, audio and video editors
- **Recording and Reading Tools** - data projectors, electronic whiteboards, document cameras, scanners, still and video cameras, microphones, e-book readers, phones, audio and video players
- **Social and Participatory Tools** – e-mail, chat, texting, blogs, forums, social networks, sharing services, multi-user virtual environments
- **Learning Tools** – practice environments, tutorials, simulations, gaming, transmedia
- **Management Tools** – library automation, scheduling systems, OPAC, school content management system

The increasing availability of online collaborative creation tools and the ability to easily share and publish files on the web has increased the options for collaborative grant writing, student team building, and shared curriculum mapping projects.

Innovative media specialists must shift thinking from piecemeal approaches toward weaving a fabric of technology use throughout the school connecting classroom learning and the school media program.

Teaching

Media specialists must know how to assess students, design instruction, and teach both children and adult learners. From collaborating with classroom teachers to working one-on-one with children, the media specialist must understand curriculum design and instructional development.

A school media specialist should be a highly qualified teacher who understands the foundations of instruction and collaborates on the development and delivery of instruction. However Allison Zumda and Violet Harada (2008a) warn that media specialists must distinguish what they define as "bad business" and "good business" in the development of high quality instruction. They stress that "good business" involves designing instructional activities and assessments that focus student learning around the most important standards and curricular goals.

The school media specialist is in the unique position to help classroom teachers differentiate instruction. He or she knows how to teach children with varied abilities and diverse cultural backgrounds. Working on curriculum mapping activities across grade levels, the media specialist is able to connect curricular standards with the individual needs of children. The media specialist can work with individuals, small groups, or large groups targeting instruction to meet specific learning goals.

Bush and Jones (2010) point out that the school media specialist is a "constant in the learning environment over time". While a classroom teacher may work with a child during a semester or school year, a media specialist guides and influences a child throughout each stage of his or her development. The school

media center becomes embedded in the life of a child.

School media specialists positively influence students' research-skills development, their motivation for inquiry, reading skills development, and nurture student reading interests. However, many media specialists lack the skills and resources to adequately provide services to students with special needs (Small, Shanahan, & Stasak, 2010). Media specialists must be familiar with the universal design of learning.

Professional development activities with teachers, after-school parent-child reading programs, and school board presentations all involve elements of teaching adult learners. In addition, the media specialist should be involved in selecting materials for the school's professional collection, serving as an active liaison during curriculum materials acquisition, and collaborative planning of individual instructional units.

> *The media specialist must understand the perspective of digital natives, the pros and cons of multitasking, and the impact of social technology on student interaction.*

The 2010 study titled Educators, Technology and 21st Century Skills: Five Myths Dispelled found that teachers feel inadequately prepared to integrate technology and foster 21st century skills and are likely to seek out the building media specialists for help. Media specialists must be prepared for their role as professional developer and trainer.

Innovative media specialists must shift thinking from isolated skills instruction toward infused modules across the curriculum.

Environments

Media specialists must know how to use both physical and virtual spaces to support the needs of students and teachers. Designing an inviting environment that encourages creativity, supports inquiry, and provides universal access is vital to program success.

The school media center is much more than a physical space. It is both a place and placeless learning laboratory. A recent study found that the school media center's atmosphere contributes to library use (Small, Shanahan, & Stasak, 2010). A welcoming, safe, and comfortable environment positively influences use by both students and teachers.

The school library media center must help bridge the digital divide by providing broad access to materials anywhere, anytime. Creating before and after school programs; circulating laptops, e-books, and digital cameras; and allowing flexible circulation of materials can increase access.

Physical spaces are evolving. With increasing access to electronic resources and the evolving role of interlibrary loan, the media center is becoming an information commons that includes spaces for a variety of activities in addition to housing materials. Many libraries have specific areas for social gatherings, large-screen video viewing, and comfortable reading. While computer labs continue in some schools, others are checking out hand-held devices, e-books, and laptops for more flexible use. In addition, recharging stations, poster printers, and gaming areas are increasing in popularity. Many physical spaces connect to virtual environments.

Whether saving energy costs or simply increasing course offerings, many schools are jumping into distance learning as an alternative to face-to-face instruction. The school media specialist plays a vital role in supporting virtual learning environments.

A virtual media center presence is much more than a simple website. In addition to accessing local and remote information collections, virtual spaces may provide social, collaborative, and participatory services such as online book clubs, original art and music sharing, or instructional materials for distance learning. Media specialists may also use their virtual presence to extend the school day through after-school online program offerings, forum-based homework help, and chat reference services. Streaming video tutorials, pathfinders, and WebQuests can be used to guide student inquiry.

Innovative media specialists must shift thinking from place-specific programs toward flexible environments for learning.

Bursting with Potential

The media specialist's palette provides an exciting array of opportunities for the professionals of today and tomorrow. However it's difficult to predict how this combination of knowledge, skills, attitudes, and dispositions might be applied to meet the needs of changing school environments. Although a media specialist may have the desired skills, the atmosphere of the school also makes a

Figure 4.

significant contribution to the success of the media program. In a cross-case analysis, Jody Howard (2010) found a relationship between school culture, leadership, and effective school library programs.

Allison Zumda and Violet Harada (2008a) suggest that program success can be defined by:

- the quality of the work completed in the library media center.
- investing resources only in those tasks that are central to the library mission.
- engaging students in the construction of deep knowledge through the exploration of ideas and information, conducting of investigations, and communication and evaluation of findings.
- the student learning that resulted from completion of work centered on subject area and information literacy goals.

William J. Bushaw and Shane J. Lopez (2010) polled public attitudes toward public schools and found the funding crisis to be a top concern. Current economic trends are contributing to lean schools with fewer support staff, more students in each classroom, and less funding for materials. If the school media specialist is to survive ongoing cutbacks, he or she must demonstrate their value in this new kind of school system. The ability to design, develop, and support distance learning courses, collaborate with teachers to support large, diverse classes, and build pathfinders and other scaffolding to assist educators facing cutbacks in print curriculum materials is essential to the success of future programs.

While economic trends point toward leaner schools (Martin, 2009), educational research and new information and technology standards (AASL, 2007; ISTE, 2007) are focusing attention on the importance of inquiry, creativity, and digital citizenship. The school media specialist must have skills in helping young people become life-long learners.

Media specialists are often placed in tough situations by the demands of principals and school board members. As such, they must constantly refocus attention on the program's mission and turn potentially negative requests into opportunities for improvement.

The media center will become a study commons – Partner with the principal for a new approach to study hall supervision and activities stressing project support and free inquiry.

The media center will become an assessment center – Collaborate with curriculum and technology personnel to organize laptop checkout, explore alternatives to traditional testing for assessment, and build connects with authentic learning.

The media specialist must be able to view shrinking budgets, additional responsibilities, and other demands as opportunities for renewal and change.

Conclusion

Allison Zumda and Violet Harada (2008b) advocate refocusing the school library media specialist's job description to stress the direct connection with student achievement and curricular goals.

School media specialists must be teachers, leaders, and advocates for reading, inquiry, and learning. Partnering with classroom teachers, they must design and implement curriculum and instruction that prepare young citizens for a life that requires thinking, inquiry, problem-solving and ethical behavior. These experiences provide the foundation for all content-area learning.

The recent explosion of easy to access and use tools and resources has made designing these types of learning environments much more realistic. However school media specialists must have the knowledge, skills, attitudes, and dispositions to turn this potential into reality.

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References

Allen, M. & Bradley, A. (2009). Portfolios. *Library Media Connection*, 28(3), 48-50.

American Associate of School Librarians (AASL) (2007). *Standards for the 21st Century Learner.* Retrieved from http://www.ala.org/aasl/standards/

American Association of School Librarians (2009). *Empowering Leaders: Guidelines for School Library Media Programs.* Chicago, IL: American Association of School Librarians.

Bush, G. & Jones, J. L. (2010). Explorations to identify professional dispositions of school librarians: a delphi study. *School Library Media Research*, 13. Retrieved from http://www.ala.org/ala/mgrps/divs/aasl/aaslpubsandjournals/slmrb/slmrcontents/volume13/bush_jones.cfm

Bushaw, W. J. & Lopez, S. J. (2010). A time for change. *Phi Delta Kappan*, 92(1), 9-26.

Donham, J. (2008). *Enhancing Teaching and Learning.* (2nd ed.). New York, NY: Neal-Schuman Publishers, Inc.

Walden University (2010) *Educators, Technology and 21st Century Skills: Five Myths Dispelled.* Walden University. Retrieved from http://www.waldenu.edu/Documents/Degree-Programs/Full_Report_-_Dispelling_Five_Myths.pdf

Fontichiaro, K. (Ed.). (2009). *21st-century Learning in School Libraries.* Santa Barbara, CA: ABC-CLIO.

Harvey, C. A. *The 21st century Elementary Library Media Program.* Santa Barbara, CA: ABC-CLIO.

Hartzell, Gary. (2003). *Building Influence for the School Librarian: Tenets, Targets, and Tactics.* (2nd ed.). Columbus: OH: Linworth Publishing.

Halverson, R. & Smith, A. (2010). How new technologies have (and have not) changed teaching and learning in schools. *Journal of Computing in Teacher Education*, 26(2), 49-54.

Hughes-Hassell, S. & Hanson-Baldauf, D. (2008). Information and communication technology use by North Carolina school library media specialists: perceived competencies and barriers. *School Library Media Research*, 11. Retrieved from http://www.ala.org/ala/mgrps/divs/aasl/aaslpubsandjournals/slmrb/slmrcontents/volume11/hughes_hassell.cfm

Howard, J. K. (2010). The relationship between school culture and the school library program: four case studies. *School Library Media Research*, 13. Retrieved from http://www.ala.org/ala/mgrps/divs/aasl/aaslpubsandjournals/slmrb/slmrcontents/volume13/howard.cfm

International Society for Technology in Education (ISTE). (2007). *National Educational Technology Standards for Students (NETS).* Eugene, OR: International Society of Technology in Education. Retrieved from http://www.iste.org/AM/Template.cfm?Section=NETS

Kaplan, A. (December 2007). Is your school librarian highly qualified? *Phi Delta Kappan*, 300-303

Katz, L. (1993). *Dispositions as Educational Goals.* ERIC Clearinghouse on Elementary and Early Childhood Education. [ED363454]. Retrieved from http://www.edpsycinteractive.org/files/edoutcomes.html

Knodt, J. S. (May 2010). Teaching for creativity: building innovation through open-inquiry learning. *School Library Monthly*, 26(9).

Lamb, A. & Johnson, L. (2010). Divergent convergence: cross-genre, multi-platform, transmedia experiences in school libraries. *Teacher Librarian*, 37(5), 76-81.

Loertscher, D. (2000). *Taxonomies of the School Library Media Program.* (2nd ed.). San Jose, CA: Hi Willow Research Publishing.

Martin, A. M. (2009). Promote, lead, & refuse: librarianship in tough times. *Knowledge Quest*, 37(4), 6-10.

Martin, B. S. & Zannier, M. (2009). *Fundamentals of School Library Media Management.* New York, NY: Neal-Schuman Publishers, Inc.

Partnership for 21st Century Skills. (2004). *Framework for 21st Century Learning.* Retrieved from http://www.p21.org

Piercey, David (September 2010). What don't teachers collaborate? A leadership conundrum. *Phi Delta Kappan.* p. 54-56.

Project Red (June 28, 2010). *Study Shows Which Technology Factors Improve Learning.* Retrieved from http://www.projectred.org/uploads/Press%20Release%20062710%20v2.pdf

Scholastic (2008). *School Libraries Work!* (3rd ed.). Retrieved from http://www2.scholastic.com/content/collateral_resources/.../slw3_2008.pdf

Small, R. V., Shanahan, K. A., & Stasak, M. The impact of New York's school libraries on student achievement and motivation: phase III. *School Library Media Research*, 13. Retrieved from http://www.ala.org/ala/mgrps/divs/aasl/aaslpubsandjournals/slmrb/slmrcontents/volume13/small_phase3.cfm

Snyder, D. L. and Miller, A. L. (May/June 2009). Library media specialists inform technology of library science students: an evidence-based discussion. *Library-Media Connection*, 22-25.

Watkins, C. (Summer 2010). Learning, Performance and Improvement. *Research Matters*, 34. Retrieved from http://www.ioe.ac.uk/about/documents/Watkins_10_Lng_Perf_Imp_ev(2).pdf

Zumda, A. & Harada, V. H. (2008a). Reframing the library media specialist as a learning specialist. *School Library Media Activities Monthly*, 24(8), 42-46.

Zumda, A. & Harada, V. H. (2008b). *Librarians as Learning Specialists: Meeting the Learning Imperative for the 21st Century.* Westport, CT: Libraries Unlimited.