

Technological Proficiencies of Administrators, Teachers and Teacher-Librarians

Developed by the ETAC working group — Personnel Skilled in Technology

With the launch of Washington State's standards for educational technology, December 2008, there has been a corresponding attention given to the technology integration skills of administrators, teachers and teacher-librarians.

The rapid surge of interest in technology-enriched teaching and learning is prompted, in part, by federal (Title II, Part D) reporting requirements: states must give an account of the technology integration skills of its K-12 teachers. These factors initiated the ETAC working group to develop the comprehensive matrices detailed below.

The key assumption that frames the matrices for administrators, teachers and teacher-librarians is simple – those who lead our classrooms must be proficient users of digital technologies as well as highly capable technology integrators whose instructional practice is compatible with a student-centered, project-oriented learning environment. Drawn up as “technological proficiencies”, each matrix addresses one of six important skill sets within the context of teaching and learning:

- Operation
- Troubleshooting
- Classroom Management
- Common Applications
- Instructional Tools
- Professional Development

In the matrices below, references to hardware and software apply only if these items are available to the teacher or teacher-librarian.

| Technological Proficiencies of Administrators, Teachers & Teacher-Librarians | | |
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| Operation | | |
| Category | Basic | Proficient |
| Hardware | <p>Operate the equipment available in their classroom.</p> <p>Locate and operate computer switches and keys.</p> <p>Locate and use all computer ports.</p> <p>Charge, replace and manage the life-cycle of a battery</p> <p>Save, backup and retrieve a file to/from the desktop, hard drive and USB flash drive.</p> | <p>Read the indicator lights:</p> <ul style="list-style-type: none"> ▪ Examples – power, battery charging, wireless connection. <p>Change and set display resolution.</p> |
| Peripherals | <p>Connect and use classroom peripherals:</p> <ul style="list-style-type: none"> ▪ Examples – mouse, projector, speaker, document camera, if available, printer. | <p>Connect and operate peripheral:</p> <ul style="list-style-type: none"> ▪ Examples – digital cameras, probeware, student response systems, video cameras. <p>Transfer operational knowledge to new peripherals.</p> |
| Operating System | <p>Startup, shutdown and restart a computer.</p> <p>Use basic desktop management tools:</p> <ul style="list-style-type: none"> ▪ Examples – task bar, dock, shortcuts. <p>Manage files:</p> <ul style="list-style-type: none"> ▪ Examples – save to specific folders, set up drop boxes and organize and label multiple folders on a server. <p>Log off a computer.</p> <p>Lock the screen when leaving a computer.</p> <p>Manage power settings.</p> <p>Recover a computer from sleep mode.</p> <p>Create application shortcuts on the desktop.</p> <p>Know the difference between a workstation operating system and other</p> | <p>Set display resolution</p> <p>Use the control panel functions:</p> <ul style="list-style-type: none"> ▪ Examples – display, sounds, wireless. <p>Use advanced shortcuts:</p> <ul style="list-style-type: none"> • Examples – function keys, control key shortcuts. |

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| Operation | | |
| Category | Basic | Proficient |
| | <p>software:</p> <ul style="list-style-type: none"> ▪ Example – Microsoft Office 2003 installed on a Microsoft XP workstation. <p>Know the file extensions for standard applications:</p> <ul style="list-style-type: none"> ▪ Examples — .doc, .xls, .pdf, .ppt, .jpg, .wav, .mp3. | |
| Network navigation | <p>Make wireless connections to the network.</p> <p>Determine if the system is logged in to the network or to the workstation only.</p> <p>Locate and use network drives and printers.</p> <p>Maintain an effective organization of files and folders in a personal directory.</p> <p>Understand, and act on, dialogue boxes.</p> <p>Teach students to save files in the assigned network location.</p> <p>Understand and practice network security functions:</p> <ul style="list-style-type: none"> ▪ Examples — set secure passwords, log off, log on. <p>Explain the impact of viruses and provide information on prevention:</p> <ul style="list-style-type: none"> ▪ Example — use caution if opening an e-mail attachment from an unknown source. | <p>Read a file path to determine its location on the network.</p> <p>Upload files to a shared folder, digital locker or Web space</p> <p>Copy, cut and paste files to a storage disk.</p> <p>Create and name a new folder to organize documents</p> <p>Access network files, email or voice messages from home.</p> |

| Technological Proficiencies of Administrators, Teachers & Teacher-Librarians | | |
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| Troubleshooting | | |
| Category | Basic | Proficient |
| Self-help | <p>Reestablish connection to the network — hardwire and wireless.</p> <p>Make sure power is on and cabling is connected correctly.</p> <p>Recover documents.</p> <p>Use Ctrl+Alt+Del or OpenApple+Option+ESC to end a task, force quit or restart the computer.</p> <p>Resolve wireless connection problems.</p> <p>Use the correct terms to report a hardware or software problem.</p> <p>Follow district procedures for technical support.</p> | <p>Reconnect network printer, replace ink cartridges and clear paper jams.</p> <p>Convert, resize and edit image files.</p> <p>Know when to do a soft reboot.</p> <p>Troubleshoot wireless peripheral problems: <ul style="list-style-type: none"> Examples — wireless printers, PDAs. </p> |

| Technological Proficiencies of Administrators, Teachers and Teacher-Librarians | | |
|--|---|---|
| Classroom Management | | |
| Category | Basic | Proficient |
| Policy, rules & online learning | <p>Direct students in the use and care of desktops and laptops.</p> <p>Create classroom rules for responsible use of technology.</p> <p>Enforce the district's Acceptable Use Policy.</p> <p>Abide by district policy as a supervisor of computer use.</p> <p>Follow district rules that govern filtering — Web and e-mail.</p> | <p>Use applications that manage computer use by students.</p> <p>Reset student passwords.</p> <p>Check the history utility of a Web browser to track student use of the Internet.</p> |

| Technological Proficiencies of Administrators, Teachers & Teacher-Librarians | | |
|--|---|--|
| Common Applications | | |
| Category | Basic | Proficient |
| Word processing | <p>Use a word processing application to create, edit, format, save, share and print documents.</p> <p>Use word processing for personal productivity:</p> <ul style="list-style-type: none"> ▪ Examples– letters home to parents, course syllabi, flyers, worksheets. <p>Save files in the correct format:</p> <ul style="list-style-type: none"> ▪ Examples – .doc, .dot, .pdf, .rtf. | <p>Use track changes and formatting tools for group editing and feedback to students.</p> <p>Create templates for learning activities.</p> <p>Create tables for personal productivity and instruction.</p> |
| Spreadsheet software | <p>Create simple spreadsheets for personal productivity and instruction.</p> <p>Create charts and graphs from data within spreadsheet.</p> <p>Copy and paste a chart or graph into another application.</p> <p>Use basic formulas to calculate data.</p> <p>Format cells to control the look and function of a spreadsheet.</p> <p>Know the difference between a workbook and a worksheet</p> | <p>Analyze data dynamically.</p> <p>Use complex formulas to calculate data.</p> <p>Use comments to clarify or label.</p> <p>Use sort and filter to search spreadsheets and examine data.</p> |
| Organizing and brainstorming software | <p>Transfer visual diagrams to outline form and back to diagram form</p> <p>Use graphic organizer software for multiple purposes:</p> <ul style="list-style-type: none"> ▪ Examples – brainstorm, develop concept maps, organize ideas, collect research, demonstrate note-taking techniques, activate past knowledge. | <p>Create research templates with hyperlinks and selected resources</p> <p>Use additional features, such as audio, video or a checklist.</p> |
| Data collection tools | <p>Connect and use probeware and a microscope for health, science or math.</p> <p>Connect and use a classroom response system.</p> | <p>Create surveys to collect data.</p> <p>Create charts or graphs from data collected in a survey.</p> |

| Technological Proficiencies of Administrators, Teachers & Teacher-Librarians | | |
|--|---|---|
| Common Applications | | |
| Category | Basic | Proficient |
| Multimedia | <p>Create basic presentations.</p> <p>Embed digital images in a presentation.</p> <p>Practice techniques for effective presentations and sharing information</p> | <p>Participate in videoconferencing and virtual fieldtrips.</p> <p>Include audio, video, and interactive features to a presentation.</p> <p>Create non-linear presentations to differentiate instruction</p> <p>Choose the best presentation software for the task.</p> |
| World Wide Web | <p>Launch and use Internet browser</p> <p>Locate specific state standards on OSPI's online Grade-Level Resources Web site.</p> <p>Use online search strategies and tools to locate information.</p> <p>Use online databases:</p> <ul style="list-style-type: none"> ▪ Examples — Discovery Education streaming, netTrekker, CultureGrams, eLibrary, ProQuest. <p>Locate online instructional resources:</p> <ul style="list-style-type: none"> ▪ Examples — district or state Web sites, Thinkfinity. <p>Follow guidelines for copyright and fair use:</p> <ul style="list-style-type: none"> ▪ Explain and model legal use of online content marked by copyright. <p>Cite electronic sources correctly:</p> <ul style="list-style-type: none"> ▪ Explain and model proper citation technique for online content. <p>Add favorites to the Internet toolbar or bookmark manager.</p> | <p>Use advanced search strategies and tools to locate information online:</p> <ul style="list-style-type: none"> ▪ Examples — Boolean searches, targeted search engines and customized databases. <p>Gather, validate, evaluate, organize and share high quality Web-based resources</p> |
| Communication software | <p>Use district email software for sending and receiving messages and attachments.</p> <p>Follow district policy and procedures for email use.</p> | <p>Use district software to manage personal and shared calendars.</p> <p>Use flags and follow-up reminders to manage personal productivity and email content.</p> |

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| Common Applications | | |
| Category | Basic | Proficient |
| | <p>Use email folders to manage and archive messages.</p> <p>Communicate with parents, students and colleagues using available communication tools</p> <p>Create email distribution lists and groups.</p> | <p>Use Web-based tools to expand communication:</p> <ul style="list-style-type: none"> ▪ Examples — blogs online journals, classroom Web sites, podcasting, shared writing, social bookmarking, social networking, Wiki. |

| Technological Proficiencies of Administrators, Teachers & Teacher-Librarians | | |
|--|--|--|
| Instructional Tools | | |
| Category | Basic | Proficient |
| Student Information System (SIS) | <p>Use the SIS to:</p> <ul style="list-style-type: none"> ▪ Take attendance and post grades according to district policy. ▪ Locate student information. ▪ Print gradebook, standard progress reports and seating charts. | <p>Use the SIS to print reports — custom and end-of-year .</p> |
| Learning management | <p>Distribute and collect files on the network drives.</p> <p>Post assignments, information and announcements on the school or district Web site.</p> | <p>Use course environment software to collaborate, assess student performance and communicate:</p> <ul style="list-style-type: none"> ▪ Examples — Moodle, Blackboard. <p>Use course environment software to support a community of learners.</p> |
| Professional development | <p>Use help menus.</p> <p>Use tutorials.</p> <p>Collaborate with coach or peers to integrate new proficiencies.</p> <p>Use online resources to gather new ideas and learn new skills.</p> <p>Identify needs and implement a personal PD strategy to expand technological skills.</p> | <p>Understand the role of technology in student learning.</p> <p>Identify needs and implement a personal PD strategy related to technology integration:</p> <ul style="list-style-type: none"> ▪ Refer to the Tiers of Technology Integration on the OSPI Web site. |

Roles & Responsibilities of Administrators

Leadership that supports and resources 21st century teaching and learning is critical to its success and sustainability. Administrators are the high-profile reinforcement of direction and accountability for every technology integration initiative regionally, and at the district and school levels. Developed by an ETAC (Education Technology Advisory Committee) working group, these expectations set the bar for the high-level guidance and direction vital to our K-12 leadership.

Inspiration for Excellence

Schools cultures in which powerful teaching and tech integration are recognized and supported depend on leadership –administrators who can inspire a shared vision for the comprehensive use of technology for learning, teaching and operations.

The superintendents, district program directors and building administrators who understand how technology can promote creativity, collaboration and innovation inspire excellence at all levels of the organization and establish the *essential conditions* for 21st century teaching and learning.

The Roles & Responsibilities of Administrators

Leadership

Bring educators, administrators and community members together to develop a shared vision for 21st century teaching and learning:

- Communicate the **value and importance** of this shared vision.
- Develop a **strategy for sustainability** that guarantees the vision will guide the long-term development of policy and programming.
- Promote a **culture of responsible risk-taking**.
- Support **innovation at all levels** of district organizations.
- Promote **research-based best practices** for technology integration.
- Advocate, at the state and national levels, for policies, programs and funding that support the **technology integration and school reform activities** of the district technology plan.

| Role & Responsibilities of Administrators | | |
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| Leadership | | |
| Superintendent | District Program Director | Building Administrator |
| <p>Establish a culture that promotes technology integration balanced with responsible risk-taking and accountability for results.</p> <p>Maintain high Expectations of technology fluency among staff at all levels:</p> <p>Offer staff development opportunities to support high expectations.</p> <p>Use ICT for communication, schedule and resource management, performance assessment and professional development.</p> | <p>Align program initiatives with the shared vision for 21st century teaching and learning.</p> <p>Represent program interests in the strategic planning process.</p> <p>Promote promising practices for tech integration that have a high chance of reaching program goals.</p> | <p>Participate in the development of a shared vision for 21st century teaching and learning.</p> <p>Help to define Expectations of technology integration.</p> <p>Develop a collaborative, technology-rich school improvement plan, grounded in research and aligned with the district strategic plan.</p> <p>Promote highly effective tech integration practices among all staff.</p> |

The Roles & Responsibilities of Administrators

Learning & Teaching

Make certain that curricular design, instructional strategies and the classroom learning environments are **using the right technologies** to optimize teaching and learning.

Place the focus on learning — **identify, evaluate and promote technology**, which enriches instruction and standards-based curricula.

Use technology in your own work.

Reward **technological innovation** that supports teaching and learning.

Support **collaborative, technology-rich learning experiences** for staff and students.

Provide for the **learning needs of all staff**, including those who need assistive technology.

Encourage the use of technology as support **for higher-level thinking, decision-making, and problem-solving**.

Encourage the development of **district-specific best practices**.

Offer **high-quality professional development**, validated by research and data, to improve the technology integration skills of teachers.

| Roles & Responsibilities of Administrators | | |
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| Learning & Teaching | | |
| Superintendent | District Program Director | Building Administrator |
| <p>Provide access to technologies that enhance learning and promote productivity.</p> <p>Communicate the expectation that technology will be an integral part of learning and teaching.</p> <p>Include tech integration skills as a criterion for the performance evaluation of instructional staff.</p> <p>Align policy and budget with your focus on technology integration for operations and instruction.</p> | <p>Make available digital resources that align with curricula.</p> <p>Offer high-quality professional development that supports technology integration to improve student performance.</p> <p>Make sure that curricula and instructional support materials integrate technology.</p> <p>Use multiple measures and flexible assessment strategies to evaluate technology proficiencies and guide the development of PD programs.</p> | <p>Help teachers document and interpret student performance data, and make necessary changes to instructional practice.</p> <p>Promote and provide high-quality professional development that supports technology integration to improve student performance.</p> <p>Align the district's vision for technology integration with the instructional practice of its teachers.</p> <p>Evaluate:</p> <ul style="list-style-type: none"> ▪ Teacher progress as technology integrators ▪ Staff productivity and efficiency with technology. |

The Roles & Responsibilities of Administrators

Culture, Law & Ethics

Make certain that all learners and educators have **equal access** to the technological resources that empower teaching and learning.

Enforce **social, legal and ethical practices** that promote responsible use of technology and respect diversity and different learning styles.

Enforce policies that address the need for **confidentiality, privacy, security and safety** in the online environment.

Enforce policies that **respect copyright law and intellectual property** developed with district resources.

Enforce technology-related practices that are **health-promoting and safe for the environment**.

| Roles & Responsibilities of Administrators | | |
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| Culture, Law & Ethics | | |
| Superintendent | District Program Director | Building Administrator |
| <p>Make sure that every student can access and participate in technology-enriched learning experiences.</p> <p>Enforce policies and procedures that protect the security and integrity of network infrastructure and its data.</p> <p>Enforce policies and procedures that protect the rights and privacy of students and staff.</p> | <p>Make sure that all students and teachers have equal access to the program portfolio.</p> <p>Train staff on legal, ethical, and health and safety issues related to the use of technology.</p> <p>Hold staff accountable for their use of the network and district technological resources.</p> <p>Keep the leadership informed about program-specific issues that relate to privacy, confidentiality and the reporting of information that could impact IT systems and policies.</p> <p>Make certain service providers protect the privacy and security of district data.</p> | <p>Make available technological resources that help teachers address different learning styles.</p> <p>Enforce policy related to acceptable use, security and copyright.</p> <ul style="list-style-type: none"> ▪ Model correct use by example. |

The Roles & Responsibilities of Administrators

Professional Practice & Productivity

Use technology to **raise your own productivity** level and that of others.

Evaluate technology for **learning, communication and productivity** in a variety of settings.

Mentor staff in the routine and effective use of technology. Lead by example.

Implement a **personal strategy for professional learning** related to technology.

Collect and analyze performance data, interpret the results and **communicate findings with ICT**.

Use technology to **communicate and collaborate** with colleagues, staff, parents, students and community members.

Use technology to **evaluate and improve** administrative and operational systems.

Be aware of **emerging technologies** and their potential application to education.

| Roles & Responsibilities of Administrators | | |
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| Professional Practice & Productivity | | |
| Superintendent | District Program Director | Building Administrator |
| <p>Establish a culture in which staff are able to take responsible risks with technology:</p> <ul style="list-style-type: none"> ▪ Maintain accountability for results. <p>Implement assessments that measure the ability of school administrators to meet technology standards.</p> <p>Promote technology fluency as a norm for all staff:</p> <ul style="list-style-type: none"> ▪ Offer training to support your high expectations. <p>Use up-to-date ICT for communication, schedule management, performance assessment and professional learning.</p> | <p>Access, analyze and interpret campus data to support initiatives that improve student learning and productivity.</p> <ul style="list-style-type: none"> ▪ Promote, by example, the benefit of this approach. <p>Improve school programming:</p> <p>Use ICT to share promising strategies and case studies.</p> <p>Use ICT to communicate learning opportunities for staff and students.</p> <p>Model technology-based high productivity for presentation development, record keeping, data analysis, research and communications.</p> <p>Build and engage online PLCs (professional learning communities).</p> | <p>Access, analyze and interpret campus data to support initiatives that improve student learning and productivity.</p> <ul style="list-style-type: none"> ▪ Promote, by example, the benefit of this approach <p>Build and engage online PLCs (professional learning communities).</p> |

The Roles & Responsibilities of Administrators

Support, Management & Operations

Enforce policies and guidelines that **ensure the compatibility** of technologies.

Implement **technology-based management and operations systems**. Promote, by example, the benefit of this approach.

Allocate **sufficient financial and human resources** to guarantee the successful and implementation of the strategic technology plan.

Integrate all strategic plans – business, technology, school improvement – to optimize staff activities and the distribution of resources.

Drive **continuous improvements to the IT system** including industry standard replacement cycles.

| Roles & Responsibilities of Administrators | | |
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| Support, Management & Operations | | |
| Superintendent | District Program Director | Building Administrator |
| <p>Promote technology-based management systems that support learning and teaching:</p> <ul style="list-style-type: none"> ▪ Promote, by example, the benefit of this approach. <p>Provide staffing, funding and related resources to support a robust IT infrastructure and effective technology use across the district.</p> <p>Align district technology usage with overall improvement efforts in instructional management and operations.</p> | <p>Promote the use of technology-based management systems to support learning, teaching and operations:</p> <ul style="list-style-type: none"> ▪ Promote, by example, the benefit of this approach. <p>Make sure programs inform, and align with, the district technology plan.</p> <p>Support the goals and implement the strategies of the district technology plan.</p> <p>Allocate program resources that help staff conduct the school improvement related activities of the district technology plan.</p> | <p>Promote the use of technology-based management systems to support learning and teaching:</p> <ul style="list-style-type: none"> ▪ Promote, by example, the benefit of this approach. <p>Make sure the school improvement plan informs, and aligns with, the district technology plan.</p> <p>Allocate program resources and set the timeline that will help staff conduct the school improvement related activities of the district technology plan.</p> |

Roles & Responsibilities of Teacher-Librarians

Developed by the ETAC working group — Personnel Skilled in Technology

Teacher-librarians have always inspired information and media literacy. In 21st century public education, these are the professionals who can make the essential connection between what a student asks and how to find the answer – on the shelf or across the digital universe. Our teacher-librarians represent a human resource and source of expertise that has never been more important.

When students know how to find and use information responsibly, they can solve problems, deepen understanding, and absorb and internalize new ideas to build knowledge. When students understand how mass media works and how it inflects culture and behavior, the issues of relevancy and truth that imperil uninformed judgment, become the frontline filters of well-reasoned decisions.

Current Environment

Washington State does not have formal standards for the integration of ICT (information and communication technology) that apply to the work of teacher-librarians. However, educators know that teacher-librarians are often the driving force behind the development and support of technology-rich learning environments.

Mission

Promote learning environments that optimize digital technologies for teaching and life-long learning by integrating a full range of learning resources into teaching and learning – publications, periodicals, online curricular material and web-based content that has educational value.

Operating Principles

Digital technologies frame the infrastructure of 21st century life. It is critical that students graduate as proficient technology users who understand the responsibilities of digital citizenship.

All students, regardless of socio-economic or cultural background, must be able to access technology at school. Technological fluency is the basic skill that enables participation in a global economy.

Digital technologies have great potential to support powerful teaching and student-centered learning environments.

Digital technologies support skill sets and competencies that have direct application to the world students will encounter at graduation.

The Roles & Responsibilities of Teacher-Librarians

Technological Proficiency

Teacher-librarians must meet the standards for proficiency and technology integration described in the Technological Proficiencies of Administrators, Teachers and Teacher-Librarians.

Leadership for Teaching and Learning

Be aware of emerging technologies and their potential to enrich teaching, learning and personal productivity.

Define and promote a student-centered, technology-rich learning environment.

Organize physical and virtual library environments that extend and deepen the learning experience at school and beyond class hours and school walls.

Guide teachers and administrators as they evaluate the potential of technology integration to enrich teaching and learning.

Mentor and guide teachers and administrators as they build technology-enriched learning environments.

Identify, evaluate, use and promote digital technologies that support powerful teaching and learning.

Model and promote practices in teaching and learning that engage different learning styles and respect cultural difference.

Collaborate with teachers to:

- Integrate technology within standards-based curricula
- Establish new technological literacies within standards-based curricula.
- Integrate on- and offline information sources that benefit the learning process.
- Integrate communication technology that supports collaborative learning.
- Integrate communication technology that supports learning – on- and off-site.

Know and communicate the tenets of policy that address copyright law, intellectual property rights and fair use.

- Understand, promote and practice the tenets of the district's acceptable use policy.

Model and promote legal, responsible and ethical use of technology.

Guide students, families and community members in the practice of safe, legal and responsible use of online information and digital communication tools.

Model the routine, intentional and effective use of technology for personal productivity, teaching and administration.

Mentor colleagues in the routine, intentional and effective use of technology for personal productivity, teaching and administration.

Collection – Build the Library

Evaluate, select and maintain a collection of teaching and learning resources that support the educational goals of the school.

Integrate electronic information services and systems that support the educational goals of the school and community.

Apply the principles of library management to the power of digital information networks to create fast, easy access to educational information and resources.

The Roles & Responsibilities of Teacher-Librarians

Establish equitable access to the technology – hardware, software, applications – that support teaching and learning.

Build Literacy – the Art & Science of Information

Educators. Promote information and communication technologies that have value for teachers:

- Encourage and support independent research and study – demonstrate a variety of on- and off-line resources that enable educators to retrieve, analyze, interpret, organize, evaluate, synthesize and present information and ideas.
- Work with educators to evolve their understanding of the role of digital technology in 21st century life and the dynamics of its relationship to a democratic society.
Digital technologies do not just plug-and-play into teaching, learning and education management. These are complex, real-world tools designed to communicate, gather data, build knowledge and solve problems; technologies students must use beyond graduation whether they are college-bound or looking for a job.

–Washington State Technology Plan, page 49

Work with educators to evolve their understanding of the legal rights held by owners of intellectual property and copyright:

- Why do we need the legal provisions that govern fair use of content for educational purposes?
- What is the meaning of *public domain*?

Work with educators to evolve their understanding of individual privacy, confidentiality and personal safety.

Work with educators to build 21st century curricula:

- Research-based lessons and instructional materials that align with standards for academics, information literacy and educational technology.
- Variety of assessment strategies – digital and paper-based – to measure how well students understand, and can apply, what they learn about information media.
- Lesson plans that integrate effective research practice.
 - Strategies for targeted information searches.
 - Strategies for gathering, validating and evaluating information.
 - Techniques to identify relevant information sources – digital and paper-based.

Students. Promote effective research practice as the key to optimal use of ICT:

- Teach students the basic principles of effective research.
- Teach students how to select the most effective ICT for research.
- Teach students how to evaluate the quality and reliability of the results.
- Demonstrate the value of dedicated online information sources for research and study as an alternative to general purpose search engines.

Encourage and support independent research and study:

- Demonstrate a variety of on- and off-line resources that enable students to retrieve, analyze, interpret, organize, evaluate, synthesize and present what they know and can do.

The Roles & Responsibilities of Teacher-Librarians

Teach students how to learn and work collaboratively using digital media – on- and off-site:

- Engage and work collaboratively with peers from different cultures using social networking technologies.
- Engage peers to develop and discuss new ideas.

