Chapter 2

TECHNOLOGY LEADERSHIP STANDARDS

The Next Generation

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> *Standards: The knowledge and skills that should be mastered in order to achieve a level of proficiency in a particular area. Standards are also a means of setting criteria for accomplishing or judging a particular activity or event.*
>
> —Council of Chief State School Officers, 2008

The move from good leader to great leader can be a quantum leap. Technology can play a significant role in becoming a great leader as technological literacy is critical to the 21st-century understanding of student engagement. Educational leaders lead in the hopes of being inspiring. How we build a learning ecosystem for both students and teachers defines us: Are you a good educational leader or a great educational leader?

This chapter focuses on the next generation of professional codes and standards that emphasize the role of the educational leader. The support for this comes from the following codes and standards addressed in this chapter: the Code of Ethics for Educational Leaders (American Association of School Administrators [AASA], 2007); the Educational Leadership Policy Standards—ISLLC (Interstate School Leaders Licensure Consortium, 2008); (Council of Chief State School Officers [CCSSO], 2008); and the ISTE (International Society for Technology in Education) NETS (National Educational Technology Standards) for technology facilitators

(2001a), for technology leaders (2001b), for students (2007), for teachers (2008), and for administrators (2009).

The following questions are addressed in this chapter:

- What are the codes/standards leaders need to know in optimally managing and especially in using technology for teachers and students?

- What have been the recent reaffirmations made to codes/standards?

- What influence do standards have on the changing technology practices of the learner?

- How do leaders use the technology standards in the improvement of their leadership skills?

- What are the roles of technology standards in leader accountability and/or evaluation?

From Codes to Standards

AASA Code of Ethics

While debate surrounds the genesis of measurement-based standards, there is little controversy that ethics and the development of ethical guidelines for school leaders began over 50 years ago. The AASA recently readopted the **Code of Ethics for Educational Leaders** (see Table 2.1). AASA (2007) describes the educational leader's professional conduct as one that

> must conform to an ethical code of behavior, and the code must set high standards for all educational leaders. The educational leader provides professional leadership across the district and also across the community. This responsibility requires the leader to maintain standards of exemplary professional conduct while recognizing that his or her actions will be viewed and appraised by the community, professional associates, and students. The educational leader acknowledges that he or she serves the schools and community by providing equal educational opportunities to each and every child. The work of the leader must emphasize accountability and results, increased student achievement, and high expectations for each and every student. To these ends, the educational leader subscribes to the following statements of standards. (p. 1)

Leaders within educational organizations are held to higher standards within society. This we understand. Our ability to role model is critical to everyone we interact with. This illuminates the need for leaders taking responsibility for their own personal use and understanding of technology.

Table 2.1	AASA (2007) Code of Ethics for Educational Leaders

The Educational Leader:

1. Makes the education and well-being of students the fundamental value of all decision making.

2. Fulfills all professional duties with honesty and integrity and always acts in a trustworthy and responsible manner.

3. Supports the principle of due process and protects the civil and human rights of all individuals.

4. Implements local, state, and national laws.

5. Advises the school board and implements the board's policies and administrative rules and regulations.

6. Pursues appropriate measures to correct those laws, policies, and regulations that are not consistent with sound educational goals or that are not in the best interest of children.

7. Avoids using his or her position for personal gain through political, social, religious, economic, or other influences.

8. Accepts academic degrees or professional certification only from accredited institutions.

9. Maintains the standards and seeks to improve the effectiveness of the profession through research and continuing professional development.

10. Honors all contracts until fulfillment, release, or dissolution is mutually agreed upon by all parties.

11. Accepts responsibility and accountability for one's own actions and behaviors.

12. Commits to serving others above self.

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ISLLC 2008 Policy Standards

Recent revised policy standards have emerged for educational leaders that are anchored in both empirical research and craft knowledge. These standards, known as **ISLLC 2008**, are not intended to be stuck in cement—not meant to be the "end all, be all."

In 2007, the recommendations from the research panel to the National Policy Board for Educational Administration (NPBEA, 2006–2007) were:

1. Ensure that the ISLLC policy standards form the foundation for further work on creating practice standards (both program and school based).

2. Create structures and procedures to ensure that the ISLLC standards are regularly updated to reflect changes in the knowledge base.

3. Support research efforts to study the implementation and effects of the ISLLC policy standards and subsequent program and practice standards throughout the profession.

4. Revise the title of ISLLC to "Educational Leadership Policy Standards: ISLLC 2008." See Table 2.2.

Table 2.2   Educational Leadership Policy Standards: ISLLC 2008

Standard 1: An education leader promotes the success of every student by facilitating the development, articulation, implementation, and stewardship of a vision of learning that is shared and supported by all stakeholders.
 	
Functions:
 	
   a. Collaboratively develop and implement a shared vision and mission
 	
   b. Collect and use data to identify goals, assess organizational effectiveness, and promote organizational learning
 	
   c. Create and implement plans to achieve goals
 	
   d. Promote continuous and sustainable improvement
 	
   e. Monitor and evaluate progress and revise plans
 	
Standard 2: An education leader promotes the success of every student by advocating, nurturing, and sustaining a school culture and instructional program conducive to student learning and staff professional growth.
 	
Functions:
 	
   a. Nurture and sustain a culture of collaboration, trust, learning, and high expectations
 	
   b. Create a comprehensive, rigorous, and coherent curricular program
 	
   c. Create a personalized and motivating learning environment for students
 	
   d. Supervise instruction
 	
   e. Develop assessment and accountability systems to monitor student progress
 	
   f. Develop the instructional and leadership capacity of staff
 	
   g. Maximize time spent on quality instruction
 	
   h. Promote the use of the most effective and appropriate technologies to support teaching and learning
 	
   i. Monitor and evaluate the impact of the instructional program
 	
Standard 3: An education leader promotes the success of every student by ensuring management of the organization, operation, and resources for a safe, efficient, and effective learning environment.

Functions:

    a. Monitor and evaluate the management and operational systems

    b. Obtain, allocate, align, and efficiently utilize human, fiscal, and technological resources

    c. Promote and protect the welfare and safety of students and staff

    d. Develop the capacity for distributed leadership

    e. Ensure teacher and organizational time is focused to support quality instruction and student learning

Standard 4: An education leader promotes the success of every student by collaborating with faculty and community members, responding to diverse community interests and needs, and mobilizing community resources.

Functions:

    a. Collect and analyze data and information pertinent to the educational environment

    b. Promote understanding, appreciation, and use of the community's diverse cultural, social, and intellectual resources

    c. Build and sustain positive relationships with families and caregivers

    d. Build and sustain productive relationships with community partners

Standard 5: An education leader promotes the success of every student by acting with integrity, with fairness, and in an ethical manner.

Functions:

    a. Ensure a system of accountability for every student's academic and social success

    b. Model principles of self-awareness, reflective practice, transparency, and ethical behavior

    c. Safeguard the values of democracy, equity, and diversity

    d. Consider and evaluate the potential moral and legal consequences of decision making

    e. Promote social justice and ensure that individual student needs inform all aspects of schooling

Standard 6: An education leader promotes the success of every student by understanding, responding to, and influencing the political, social, economic, legal, and cultural context.

Functions:

    a. Advocate for children, families, and caregivers

    b. Act to influence local, district, state, and national decisions affecting student learning

    c. Assess, analyze, and anticipate emerging trends and initiatives in order to adapt leadership strategies

The most important characteristic of the work of the research panel (cochaired by R. Papa and J. Murphy) was that the standards would be *regularly* updated to reflect changes in the knowledge base and that the standards of 2008 would be research based, not just craft knowledge based. Empirical research ($n = 83$ studies) was defined as evidence gathered through quantitative, qualitative, or mixed-method research. Craft knowledge ($n = 47$ sources) was defined as abilities, awareness, information, and other accumulated knowledge based on field and classroom experience (CCSSO, 2008). Using the conceptual framework of the original ISLLC standards from 1996, changes were expanded to include dynamics of the changing field of educational leadership, including the increasing role technology plays.

These standards identified research and categorized it through two lenses: empirical research and craft knowledge practices. These set the stage for the needed revisions of the programmatic (guide curriculum development) and practice (measurable) standards/dispositions that are used for National Council for Accreditation of Teacher Education (NCATE) accreditation. As noted by Creighton and Young (2003), Fenwick English, the renowned father of curriculum mapping and auditing, stated, "We must have absolute confidence that the regulatory process is untainted by personal biases or conflicts of interest not be present. This is not the case now" (p. 36).

Research About Standards

Criticism of the NCATE standards is well known. The standards in educational leadership first introduced and adopted by various professional agencies in 1996 were practice based with the sole foundation coming from craft knowledge. According to Fenwick English,

> standardized leaders can be produced with a standardized curriculum. This is what I mean by efficiency centered. Another word for "standardization" is uniformity. That is where the ELCC [Educational Leadership Constituent Council] standards take us. To have standards without standardization one thinks of law and medicine. One wants competent lawyers and doctors without reducing the complexity of the challenges facing those professions. The nature of the knowledge bases of those applied fields has a much longer history than education administration and they have established a tradition of change within their knowledge bases that is different from ours. Much of the "progress" in medicine, for example, has occurred "out of the knowledge base" of the time. In law there is always the possibility of a *Brown v. Board of Education* type decision which overturns everything that came before it and leads to a whole new data base of case

law. There is no such recognition of the ELCC or NCATE about this with education leadership. (Creighton & Young, 2003, pp. 33–34)

Given this backdrop, our task as school leaders is to recognize the limitation of standards and understand that competence is in many respects a moving trajectory. The opportunities that standards raise for the profession have to do with understanding the artful side of leadership. The assessment and/or evaluation of standards sets boundaries to what we do, both in implementation and in the evidence of implementation that must be addressed through informed leadership practices.

Since the turn of the century, working conditions, promising and best practices, benchmarks, and research have rapidly changed primarily due to technology tools and practices that are increasingly ubiquitous to how we learn.

Within the ISLLC 2008 standards is a greater focus on technology. Embedded within three of the standards are three functions explicitly tied to the important role of technology and its relationship to educational leadership (see Table 2.3).

For example, a recent study was done with New Jersey chief school administrators (Babo, 2009) on how the new ISLLC 2008 standards impact principal summative evaluation practices. Fifty-two principals (11%) participated in a survey. The results showed that some of the standards and their respective functions were

Table 2.3	ISLLC 2008 Technology to Support Success of Every Student

Standard 2: An education leader promotes the success of every student by advocating, nurturing, and sustaining a school culture and instructional program conducive to student learning and staff professional growth.

Function h: *Promote the use of the most effective and appropriate technologies to support teaching and learning*

Standard 3: An education leader promotes the success of every student by ensuring management of the organization, operation, and resources for a safe, efficient, and effective learning environment.

Function b: *Obtain, allocate, align, and efficiently utilize human, fiscal, and technological resources*

Standard 6: An education leader promotes the success of every student by understanding, responding to, and influencing the political, social, economic, legal, and cultural context.

Function c: *Assess, analyze, and anticipate emerging trends and initiatives in order to adapt leadership strategies*

Source: Council of Chief State School Officers. (2008). *Educational Leadership Policy Standards: ISLLC 2008.* Washington, DC: Author. http://www.ccsso.org/Publications/Download.cfm?Filename=ISLLC2008final.pdf.

deemed to be of greater importance than others. Concerning the ISLLC Standard 2 that emphasizes technology and its impact on student learning, this study found that "only 31% of the respondents thought it essential that principals promote the use of the most effective and appropriate technologies to support teaching" (p. 7).

Thirty-one percent is not an acceptable number for today and tomorrow's educational leader. As Table 2.3 shows, ISLLC 2008 strongly recommends that school leaders actively participate in both understanding and use of technology tools to foster the highest level of effective teaching and learning practices.

The reality for many leaders is that they are being held accountable in their evaluations for how standards are met. Without a focused understanding of standards and the skills to implement curriculum changes coupled with strong professional development for one's staff, the impact of technology may be limited by the leader's ability to understand its importance.

Transforming Education With Tools

ISLLC 2008 is published by the Council of Chief State School Officers, a non-partisan, nationwide, nonprofit organization of the public officials who head departments of elementary and secondary education. These standards (See Tables 2.2 and 2.3) are high-level policy standards intended to provide guidance to state policymakers and other professional organizations that set standards for the pre-K–12 curriculum. CCSSO (2008) described ISLLC 2008:

> Education leadership is more important than ever. States recognize that schools and districts will not meet demanding requirements for improving achievement without effective leaders. The recently released education leadership standards, known to most of you as the "ISLLC Standards," represent the latest set of high-level policy standards for education leadership. The standards provide guidance to state policymakers as they work to improve education leadership preparation, licensure, evaluation, and professional development. (p. 1)

ISTE Standards

What is the relationship among the AASA Code of Ethics, the ISLLC 2008 policy standards, and the ISTE NETS for students, teachers, and administrators? Principals and superintendents play a pivotal role in determining how well technology is understood and used in schools. The NETS enable us to better define what students, teachers, and administrators need to know and are able to do. According to ISTE Chief Executive Officer Don Knezek,

integrating technology throughout a school system is, in itself, significant systemic reform. We have a wealth of evidence attesting to the importance of leadership in implementing and sustaining systemic reform in schools. It is critical, therefore, that we attend seriously to leadership for technology in schools. (ISTE, 2009)

Several years ago, the **ISTE** embarked on an effort to refresh the National Educational Technology Standards. These efforts have resulted in the new **NETS-S** (NETS for Students; see Table 2.4), **NETS-T** (NETS for Teachers; see Table 2.5), and **NETS-A** (NETS for Administrators; see Table 2.6) that help guide what students, teachers, and administrators should know and be able to do to learn effectively and live productively in an increasingly digital world.

NETS-S

Table 2.4	NETS for Students 2007

1. Creativity and Innovation

   Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology. Students:

   a. apply existing knowledge to generate new ideas, products, or processes

   b. create original works as a means of personal or group expression

   c. use models and simulations to explore complex systems and issues

   d. identify trends and forecast possibilities

2. Communication and Collaboration

   Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others. Students:

   a. interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media

   b. communicate information and ideas effectively to multiple audiences using a variety of media and formats

   c. develop cultural understanding and global awareness by engaging with learners of other cultures

   d. contribute to project teams to produce original works or solve problems

Table 2.4	(Continued)

3. Research and Information Fluency

    Students apply digital tools to gather, evaluate, and use information. Students:

    a. plan strategies to guide inquiry

    b. locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media

    c. evaluate and select information sources and digital tools based on the appropriateness to specific tasks

    d. process data and report results

4. Critical Thinking, Problem Solving, and Decision Making

    Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources. Students:

    a. identify and define authentic problems and significant questions for investigation

    b. plan and manage activities to develop a solution or complete a project

    c. collect and analyze data to identify solutions and/or make informed decisions

    d. use multiple processes and diverse perspectives to explore alternative solutions

5. Digital Citizenship

    Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior. Students:

    a. advocate and practice safe, legal, and responsible use of information and technology

    b. exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity

    c. demonstrate personal responsibility for lifelong learning

    d. exhibit leadership for digital citizenship

6. Technology Operations and Concepts

    Students demonstrate a sound understanding of technology concepts, systems, and operations. Students:

    a. understand and use technology systems

    b. select and use applications effectively and productively

    c. troubleshoot systems and applications

    d. transfer current knowledge to learning of new technologies

NETS-T

Table 2.5	NETS for Teachers 2008

Effective teachers model and apply the National Educational Technology Standards for Students (NETS-S) as they design, implement, and assess learning experiences to engage students and improve learning; enrich professional practice; and provide positive models for students, colleagues, and the community. All teachers should meet the following standards and performance indicators. Teachers:

1. Facilitate and Inspire Student Learning and Creativity

   Teachers use their knowledge of subject matter, teaching and learning, and technology to facilitate experiences that advance student learning, creativity, and innovation in both face-to-face and virtual environments. Teachers:

   a. promote, support, and model creative and innovative thinking and inventiveness

   b. engage students in exploring real-world issues and solving authentic problems using digital tools and resources

   c. promote student reflection using collaborative tools to reveal and clarify students' conceptual understanding and thinking, planning, and creative processes

   d. model collaborative knowledge construction by engaging in learning with students, colleagues, and others in face-to-face and virtual environments

2. Design and Develop Digital-Age Learning Experiences and Assessments

   Teachers design, develop, and evaluate authentic learning experiences and assessments incorporating contemporary tools and resources to maximize content learning in context and to develop the knowledge, skills, and attitudes identified in the NETS-S. Teachers:

   a. design or adapt relevant learning experiences that incorporate digital tools and resources to promote student learning and creativity

   b. develop technology-enriched learning environments that enable all students to pursue their individual curiosities and become active participants in setting their own educational goals, managing their own learning, and assessing their own progress

   c. customize and personalize learning activities to address students' diverse learning styles, working strategies, and abilities using digital tools and resources

   d. provide students with multiple and varied formative and summative assessments aligned with content and technology standards and use resulting data to inform learning and teaching

3. Model Digital-Age Work and Learning

   Teachers exhibit knowledge, skills, and work processes representative of an innovative professional in a global and digital society. Teachers:

   a. demonstrate fluency in technology systems and the transfer of current knowledge to new technologies and situations

(Continued)

Table 2.5	(Continued)

b. collaborate with students, peers, parents, and community members using digital tools and resources to support student success and innovation

c. communicate relevant information and ideas effectively to students, parents, and peers using a variety of digital-age media and formats

d. model and facilitate effective use of current and emerging digital tools to locate, analyze, evaluate, and use information resources to support research and learning

4. Promote and Model Digital Citizenship and Responsibility

Teachers understand local and global societal issues and responsibilities in an evolving digital culture and exhibit legal and ethical behavior in their professional practices. Teachers:

a. advocate, model, and teach safe, legal, and ethical use of digital information and technology, including respect for copyright, intellectual property, and the appropriate documentation of sources

b. address the diverse needs of all learners by using learner-centered strategies and providing equitable access to appropriate digital tools and resources

c. promote and model digital etiquette and responsible social interactions related to the use of technology and information

d. develop and model cultural understanding and global awareness by engaging with colleagues and students of other cultures using digital-age communication and collaboration tools

5. Engage in Professional Growth and Leadership

Teachers continuously improve their professional practice, model lifelong learning, and exhibit leadership in their school and professional community by promoting and demonstrating the effective use of digital tools and resources. Teachers:

a. participate in local and global learning communities to explore creative applications of technology to improve student learning

b. exhibit leadership by demonstrating a vision of technology infusion, participating in shared decision making and community building, and developing the leadership and technology skills of others

c. evaluate and reflect on current research and professional practice on a regular basis to make effective use of existing and emerging digital tools and resources in support of student learning

d. contribute to the effectiveness, vitality, and self-renewal of the teaching profession and of their school and community

NETS-A

Table 2.6	NETS for Administrators 2009

1. Visionary Leadership

   Educational administrators inspire and lead development and implementation of a shared vision for comprehensive integration of technology to promote excellence and support transformation throughout the organization. Educational administrators:

   a. inspire and facilitate among all stakeholders a shared vision of purposeful change that maximizes use of digital-age resources to meet and exceed learning goals, support effective instructional practice, and maximize performance of district and school leaders

   b. engage in an ongoing process to develop, implement, and communicate technology-infused strategic plans aligned with a shared vision

   c. advocate on local, state and national levels for policies, programs, and funding to support implementation of a technology-infused vision and strategic plan

2. Digital-Age Learning Culture

   Educational administrators create, promote, and sustain a dynamic, digital-age learning culture that provides a rigorous, relevant, and engaging education for all students. Educational administrators:

   a. ensure instructional innovation focused on continuous improvement of digital-age learning

   b. model and promote the frequent and effective use of technology for learning

   c. provide learner-centered environments equipped with technology and learning resources to meet the individual, diverse needs of all learners

   d. ensure effective practice in the study of technology and its infusion across the curriculum

   e. promote and participate in local, national, and global learning communities that stimulate innovation, creativity, and digital-age collaboration

3. Excellence in Professional Practice

   Educational administrators promote an environment of professional learning and innovation that empowers educators to enhance student learning through the infusion of contemporary technologies and digital resources. Educational administrators:

   a. allocate time, resources, and access to ensure ongoing professional growth in technology fluency and integration

   b. facilitate and participate in learning communities that stimulate, nurture, and support administrators, faculty, and staff in the study and use of technology

(Continued)

Table 2.6   (Continued)

    c. promote and model effective communication and collaboration among stakeholders using digital-age tools

    d. stay abreast of educational research and emerging trends regarding effective use of technology and encourage evaluation of new technologies for their potential to improve student learning

4. Systemic Improvement

Educational administrators provide digital-age leadership and management to continuously improve the organization through the effective use of information and technology resources. Educational administrators:

    a. lead purposeful change to maximize the achievement of learning goals through the appropriate use of technology and media-rich resources

    b. collaborate to establish metrics, collect and analyze data, interpret results, and share findings to improve staff performance and student learning

    c. recruit and retain highly competent personnel who use technology creatively and proficiently to advance academic and operational goals

    d. establish and leverage strategic partnerships to support systemic improvement

    e. establish and maintain a robust infrastructure for technology including integrated, interoperable technology systems to support management, operations, teaching, and learning

5. Digital Citizenship

Educational administrators model and facilitate understanding of social, ethical, and legal issues and responsibilities related to an evolving digital culture. Educational administrators:

    a. ensure equitable access to appropriate digital tools and resources to meet the needs of all learners.

    b. promote, model, and establish policies for safe, legal, and ethical use of digital information and technology

    c. promote and model responsible social interactions related to the use of technology and information

    d. model and facilitate the development of a shared cultural understanding and involvement in global issues through the use of contemporary communication and collaboration tools

Source: National Educational Technology Standards for Administrators, Second Edition, © 2009, ISTE® (International Society for Technology in Education), www.iste.org. All rights reserved.

Other ISTE Standards: TF and TL

Two more sets of standards bear mentioning as they focus on preparing technology experts for schools: the ISTE/NCATE National Educational Technology

Standards for technology facilitation (TF; 2001a) and technology leadership (TL; 2001b). **NETS-TF** and **NETS-TL** comprise eight topic areas, listed below:

1. Technology Operations and Concepts

2. Planning and Designing Learning Environments and Experiences

3. Teaching, Learning, and the Curriculum

4. Assessment and Evaluation

5. Productivity and Professional Practice

6. Social, Ethical, Legal, and Human Issues

7. Procedures, Policies, Planning, and Budgeting for Technology Environments

8. Leadership and Vision

The performance indicators are different as the TF standards foci are on practices at the school-building level while the TL standards foci are at the district, regional, state, and national levels. These standards as with other NCATE standards are written as program- or practice-based standards that are earmarked by the fact that they are measurable, as found in rubrics. According to Williamson and Redish (2009),

> the TF/TL standards are nearly identical in structure and content to the NETS-S (2007), NETS-T (2008) and NETS-A (2002) except for the performance tasks [$n = 78$] and rubrics . . . the NET-S, NETS-T and NETS-A do not have performance tasks attached to them. (p. 9)

What do these standards mean to the school leader? How one will encourage implementation and/or expectations for students, teachers, and leaders in reaching the goals of these standards is what the leader should be focused on. For example, how are standards linked with everyday practice? Modeling behaviors expected (displaying personal use of technology), providing professional development opportunities (encouraging staff to attend technology workshops), and ensuring access for students (using clickers in a large class) are but a few of the ways to think of the connections between standards and practices.

Clearly, there is no dearth of standards. Studies show that leadership is second only to classroom instruction in influencing student outcomes (CCSSO, 2008). How the school leader is able to stay knowledgeable of the standards requires a great degree of effort. Additionally, using only behaviorist outcome-based foci learning does not serve students or teachers as it too narrowly defines the

curricular path. The innovations in teaching and learning have "artful" actions as well as those easily and narrowly measured. Technology is an opportunity to embrace the risk-taking hero in our leadership. Today's reality within schools means that a sometimes messy and playful leadership process that encourages cutting-edge technology use for optimal student learning is allowable, doable, and encouraged.

For example, is it technology innovation that makes the difference? Or is it the highly effective teacher delivering the instruction through technology that makes the impact?

The Leader's Tool Kit

Educational leaders need to know that national curriculum standards exist as well. To name just a few, consider the National Council of Teachers of English Standards for the English Language Arts (http://www.ncte.org/standards), the National Council for Geographic Education National Geography Standards (http://www.ncge.org/i4a/pages/index.cfm?pageid=3314), the National Council of Teachers of Mathematics Principles and Standards for School Mathematics (http://standards.nctm.org/document/index.htm), *Moving Into the Future: National Standards for Physical Education* published by the National Association for Sport and Physical Education (http://www.aahperd.org/naspe/template .cfm?template=ns_index.html), the National Council for the Social Studies' *Expectations of Excellence: Curriculum Standards for Social Studies* (http://www .socialstudies.org/standards), and so on.

It is often said that if all you have in your tool kit is a hammer, then everything in the world looks like a nail. Adult learning practices tell us that adults learn on a need-to-know basis: The adult learner has a focused need to learn something, and that something is the exact place to start. No one size fits all learners. Children are not so different, as technology practices have shown. Yes, they are compelled to go to school and learn and master certain subjects to continue through the required pre-K–12 path. The educational leader needs to be able to facilitate and guide teachers in expanding their tool kits from a fairly individualized perspective. That is, teachers should be encouraged to use different teaching strategies with tools that make sense for the learner.

A teacher's tool kit needs to have strategies for facilitating student learning within an active learning environment from introduction to mastery of topics. The creation of rubrics for measuring some of the standards/functions makes sense. Other features of a tool kit are not easily measured. ISTE rubrics help teachers develop strategies and methods that will guide a student from an

introductory stage to mastery. ISTE (2008) defines this rubric scale as moving from Beginning level to Developing level to Proficient level and finally to Transformative level.

- The Beginning level teacher is a beginner in the use of technology tools and his or her ability to effectively use technology to improve his or her teaching and to help students learn.

- The Developing level teacher is becoming more adept and flexible in his or her use of technology tools.

- The Proficient level teacher is one who uses technology tools effectively in the improvement of student learning.

- The Transformative level teacher uses technology tools in collaboration with the active student learner that address the global and digital environment we live in today (ISTE, 2008).

For standards to work they must mesh. NETS-S and NETS-T must mesh with NETS-A and ultimately ISLLC 2008. What are the essential conditions for arranging an effective learning environment for all students? Standards give us a road map, a framework from which to delve into a rapidly moving field of free (Web 2.0) and costly software and hardware.

There is an old saying: *Just because you can, does it mean you should?* Don't go overboard using technology tools just because they are available. Are all the bells 'n' whistles of said software required to be used? Is the latest a must to purchase? This chapter began with the AASA Code of Ethics from which standards originated. The ability to measure learning is not the only reason to use technology tools. If we focus our teachers on student-centered learning opportunities and ask them to assess and formatively evaluate them, we are supporting an environment that supports the learning success for all students, à la ISLLC 2008. The educational leader should serve as the facilitator and motivator for formative change. A shared vision with your teachers and staff leads to a commitment of establishing flexible student groups of learning. How we wrestle with learner skills and innovation (information, media, technology for life and career skills) leads to themes important to all of us in the educational community, such as global awareness, civic literacy, health literacy, and so forth.

As we began this chapter, we recognized that the move from good leader to great leader can be a quantum leap. Technology can play a significant role as technological literacy is critical to the 21st-century understanding of student engagement. Tool kit leadership strategies include finding the courage to stay the course; using your voice in a plan; creating thought and actions in exploring

the barriers and possible solutions; conducting formative assessments that allow for play activity learning; communicating with all stakeholders seeking transparency through blogs, wikis, podcasts, tweets, and so forth; and committing your artful leadership skills to your teachers in ways that foster their teaching experimentation in a safe environment to optimize student learning strategies for all learners. Educational leaders lead in the hopes of being inspiring. As was noted in the beginning of this chapter, how we build a learning ecosystem for both students and teachers will define us as good educational leaders or great educational leaders.

Conclusions

Clausen, Britten, and Ring (2008) wrote, "To create essential conditions for effective technology use in schools, there needs to be an increased emphasis regarding both the knowledge and support administrators provide to teachers who want to integrate technology with instruction" (p. 20). Building-level administrators who use the technology standards to help frame curricular decisions will ensure that teachers are prepared. Encouraging teachers to work in collaborative teams that review student data, curriculum strategies, and activities will enhance the curriculum mapping that ensures a coherent implementation of both NETS standards and practices for all students. These are topics that are covered in subsequent chapters in this book.

An empirical study done several years ago (Anderson & Dexter, 2005) found

the concept of school technology leadership was operationalized and aligned to technology goals, policies, budgets, committees, and other structural supports for improving technology's role in learning. Although this was not a test of the validity of the NETS-A standards [ISTE, 2002], the findings are consistent with and reinforce standards. (p. 72)

This research confirmed what we know is true about leadership and curriculum and staff development: Principals/superintendents must *walk the talk* and play a pivotal role in providing leadership in the use of technology.

A great educational leader energizes the learning environment using tools and teaching strategies for success of all children. The learning environment is student centered, is collaborative, fosters creative thinking, ensures digital global citizenship, integrates assessment practices, and encourages learner-constructed knowledge from multiple sources and experiences. Standards (and codes) serve to ensure the incentive and ethical posture that will aid the educational leader in modeling creativity and innovation.

Key Principles for Leaders to Know

- The use of codes/standards improves student, teacher, and staff performance.

- The integrity of the learning environment requires the leader to have both a global and a micro understanding of effective teaching practices and learner skills.

- A robust Digital Age learning culture has the ability to inspire.

CASE STUDY 2.1 | Strategies to Meet Technology Standards With Limited Funding

You are the superintendent of a small rural school district with two main problems: lack of funding and lack of infrastructure.

1. The small town has extremely archaic phone/data lines and is isolated, which makes bringing fiber to your area cost prohibitive.

2. The limited funding previously available has now been eliminated due to the country's and your state's severe cutting of funds to schools. You do not want your principals and teachers to lose sight of the technology goals you still have for the students and learning environment of the schools.

Discussion: Discuss with your administrators a strategy or strategies to help keep your district on track while having no additional funds and keeping in mind the ISLLC 2008 and NETS-A (ISTE, 2009) standards. Possible topics to cover include cancellation of a district technology training workshop, soft capital budget being frozen, no new technology upgrades, and so forth.

Does the district have a vision in preparing students to "meet the demands of a new age"? What policies or plans have been adopted/adapted recently?

Activity: Design a district plan that meets the needs of the community and considers discussion points noted above within the setting of lack of available funds and infrastructure. Use the ISLLC 2008 and NETS-A (ISTE, 2009) standards to guide in the design of your plan.

CASE STUDY 2.2 | Efficacy of Online Education

You are a superintendent of a growing district with 60,000+ students that is facing large budget cuts due to declining state support. You are being forced to cut teachers in addition to making cuts in all other aspects of the curriculum, textbooks, and so forth. In order to maintain advanced college placement classes, you want your principals to consider offering

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online education across all grade levels. As part of your discussion you want to emphasize that holding true to the standards of the profession for students, teachers, and administrators undergirds the considerations required by the ethical administrator.

Discussion: Consider the "how to" question in thinking about ranking ISLLC 2008 based on improving student achievement, based on developing a technology-focused school culture, or based on supporting the district's change initiatives. Rank the NETS-A, NETS-T, and NETS-S standards. In a group, compare the lists and discuss an action plan to achieve the agreed-upon top three standards and their functions.

Activity: Using the standards (ISLLC 2008 and refreshed NETS-A/T/S), outline a plan that you will use to convince principals that online education is broader than just remedial education for K–12 students.

Web Resources

The **American Association of School Administrators** (http://www.aasa.org) is the premier organization for educational leaders.

The **American Association of School Administrators Code of Ethics** (http://aasa.files .cms-plus.com/PDFs/GovDocs/CodeofEthicsApprovedGB030107.pdf) is critical for educational leaders to be aware of.

The **American Society for Ethics in Education** (http://www.edethics.org) provides leaders with a broad view of what leadership means to parents, students, and teachers.

The **Center for the Study of Ethics** (http://www.uvu.edu/ethics) focuses the educational leader on curricular dimensions of education.

The **Center on Education Policy** (http://www.cep-dc.org) is a national independent advocate for public education and more effective public schools.

The **Council of Chief State School Officers** (http://www.ccsso.org) published the ISLLC 2008 standards for educational leadership policy.

The **International Journal of Educational Leadership Preparation** (http://www.ijelp .expressacademic.org) is a wealth of juried current research from both practitioners and professors that will help educational leaders lead.

ISTE NETS-A (2009; http://www.iste.org/Content/NavigationMenu/NETS/ForAdministrators/ 2009Standards/NETS_for_Administrators_2009.htm), *ISTE NETS-S* (2007; http:// www.iste.org/Content/NavigationMenu/NETS/ForStudents/2007Standards/NETS_for_ Students_2007.htm), and *ISTE NETS-T* (2008; http://www.iste.org/Content/Navigation Menu/NETS/ForTeachers/NETS_for_Teachers.htm) provide technology standards educational leaders need to be informed about.

ISTE Technology Facilitation (2001a; http://www.iste.org/Content/NavigationMenu/ NETS/ForTechnologyFacilitatorsandLeaders/Technology_Facilitation_Standards .htm) and *ISTE Technology Leadership* (2001b; http://www.iste.org/Content/Navigation Menu/NETS/ForTechnologyFacilitatorsandLeaders/Technology_Leadership_Standards .htm) are standards educational leaders should be aware of for use with technology experts.

Learning Point (http://www.learningpt.org), formerly North Central Regional Educational Laboratory, works to improve teaching and learning in schools.

Mid-continent Research for Education and Learning (http://www.mcrel.org) is a resource center offering practical, research-based solutions and resources.

The **National Association for Multicultural Education** (http://www.nameorg.org) informs education leaders on the latest research and practices in multicultural education.

The **National Association of Elementary School Principals** (http://www.naesp.org) is the premiere organization for elementary school leaders.

The **National Association of Secondary School Principals** (http://www.nassp.org/s_nassp) is the premiere organization for secondary school leaders.

The **National Council for Accreditation of Teacher Education** (http://www.ncate.org/ public/standards.asp) is the accreditation body for university teacher preparation, which includes leadership programs.

The **National Council of Professors of Educational Administration** (http://www .ncpeaprofessors.org) is the premiere organization for professors of educational administration/leadership.

The **National Policy Board for Educational Administration** (http://www.npbea.org) is a national consortium of major stakeholders in educational leadership and policy.

The **National School Boards Association** (http://www.nsba.org) is the premiere organization for school board leaders.

The **Parent Teacher Association** (http://www.pta.org) provides involvement strategies and resources.

PaTTAN, the Pennsylvania Training and Technical Assistance Network (http://www.pattan .k12.pa.us/teachlead/E_ectiveInstructionToolKitSearch.asp), provides educational leaders with effective instructional strategies that help teachers focus on success for all students.

The **Public Education Network** (http://www.publiceducation.org) provides resources and strategies for engaging the public in public education.

The **Southwest Educational Development Laboratory** (http://www.sedl.org) is a private, nonprofit, research and development, and dissemination institute dedicated to improving teaching and learning.

The **U.S. Department of Education** (http://www.ed.gov/policy/elsec/leg/esea02/index.html) provides an overview of Elementary and Secondary Education Act/No Child Left Behind methods and resources.

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