

Building an Effective District Technology Team

*An Administrator's Guide to Understanding the Importance
of 21st Century Education Technology and Ensuring Your
Staff Has the Skills to Implement It*



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INTRODUCTION

Who's in charge of technology in your school district? Who's making sure that the technology used in your school district is

- Updated and relevant?
- Efficiently used?
- Cost effective?
- Integrated within each and between all of the schools in your entire district?

Technology plays an integral part in all aspects of school life, from its use to engage students, to a vehicle to connect teachers from across the district, to streamline administrative tasks such as payroll, to conduct assessment testing, and as an efficient way to communicate with parents and the community. But who oversees the all-encompassing technology initiatives in your school district? Education technology leaders are like no other IT professionals. Not only must they know all the current and emerging technologies, they must have a deep understanding of how this technology can be used to transform education.

The Consortium for School Networking (CoSN) offers a way for K-12 superintendents and HR professionals to gauge their technology staff's understanding of how technology should be used to bring 21st century learning to their schools.

CoSN's *Framework of Essential Skills of the K-12 CTO* identifies the 10 skill areas that education technology leaders must have to successfully implement technology strategies in their education communities. The *Framework* has been built and is kept current by practicing education technology leaders from around the country. The *Framework* is divided into three equally important categories:

- **Leadership & Vision**, which outlines how education technology leaders can use technology strategically in their school systems.
- **Understanding the Educational Environment**, which identifies what education technology leaders must know about the education environment to integrate leading-edge technology to inform learning.
- **Managing Technology & Support Resources**, which describes the specific skills education technology professionals must employ to ensure that the technology in their schools systems are operating at peak performance and cost effectively.

The Consortium for School Networking's *Framework* should be used when hiring education technology professionals, to gauge your current staff's knowledge of education technology, and to enhance the skills of those seeking to bring technology to your district. The *Framework* is also the basis for the new Certified Education Technology Leader (CETL)TM certification exam. This rigorous, two-part exam identifies those who have already mastered the skills and knowledge needed to bring 21st century skills to our schools.

This Toolkit is designed to help superintendents and human resource professionals hire skilled, knowledgeable education technology leaders who have demonstrated their understanding and commitment to the best educational technology practices and strategies.

UNDERSTANDING

THE FRAMEWORK OF ESSENTIAL SKILLS OF THE K-12 CTO

Use of technology is transforming how our world works and plays. School systems in the U.S. that don't harness technological advances to improve our learning environments are finding themselves and their students sorely unprepared for the future.

But how are these technologies implemented? With all the choices, which technologies are the best for your students? It is the responsibility of the district's Chief Technology Officer (CTO)* to understand the Superintendent's vision of bringing 21st century technology to the students and to have the knowledge and skills to make that vision a reality.

CoSN's *Framework of Essential Skills of the K-12 CTO* is designed to identify education technology leaders who possess these skills. It is also used to identify the skills education technology leaders may be lacking in order to plot their professional development. The *Framework* is comprised of three primary professional categories: **Leadership & Vision, Understanding the Educational Environment, and Managing Technology & Support Resources**. Under each of these categories are 10 essential skill areas, each outlining the responsibilities and knowledge needed to be a successful educational technology leader. Each of these skills and the related knowledge needed to accomplish them are included in CoSN's Certified Education Technology Leader (CETL)TM certification exam.

*CTOs are education technology leaders who are responsible for technology that is increasingly complex, greater in number and scope, and ever more integrated into the daily instructional and administrative routines of today's school districts. CTOs are known by many titles, including Chief Information Officer and Technology Director.

The Framework's 10 Skill Areas

- Leadership & Vision
- Strategic Planning
- Ethics & Policies
- Instructional Focus & Professional Development
- Team Building & Staffing
- Stakeholder Focus
- Information Technology Management
- Communication Systems Management
- Business Management
- Data Management

CoSN encourages school leaders and administrators to use the *Framework* to ensure their technology staff are helping to prepare the district's students for the world they'll inherit.

School Leaders and Administrators Can Use the *Framework* to:

Recognize and better understand the evolving role of the CTO and how the CTO can elevate the 21st century learning environment in your school district.

Education leadership positions are defined by a set of competencies and necessary skills, but education *technology* leadership positions are relatively new and evolving. The *Framework* empowers superintendents, CTOs, and other school leaders with information to better understand the role of the CTO and how to support visionary technology leadership. What skill set is required for the district's CTO to help develop a 21st century learning environment, especially with the challenge of ever-changing technologies and ever-shrinking budgets? The *Framework* outlines the range of knowledge and skills a CTO must have in order to help the district succeed and meet its mission and goals (p.6).

Clearly identify the role of the CTO within your district's leadership structure and to encourage participation of the CTO at the cabinet level.

The U.S. Department of Education's National Educational Technology Plan calls for the district technology leader to be part of the Superintendent's Cabinet. And while other education leadership positions have long been defined and established, the executive role for technology leadership is relatively new and still only sporadically realized. School district leaders can use the *Framework* to identify both the current knowledge and skills of their technology staff (p. 13) and the knowledge and skills they still need.

Help guide the CTO interview and hiring process.

Superintendents, HR professionals, and School Boards seeking the type of technology leader needed for 21st century school systems can refer to the *Framework* to help define the profile of the position, prepare interview questions, and evaluate candidates for the position. This Toolkit includes suggested interview questions (p.20), which are designed to identify qualified candidates. Also included is a sample CTO job description (p. 24).

Target professional training needs for your technology staff.

CoSN's *Framework* takes into account the evolving role of the CTO and provides a conduit for defining the professional development needs of these executive-level technology leaders.

What the Research Shows

A report from the National Center for Education Statistics (NCES), *Educational Technology in Public School Districts: Fall 2008* ([Gray and Lewis, 2009](#)), found 51% of districts reported employing a full-time individual responsible for educational technology leadership, and 32% reported a part-time leadership position. Even in large districts of 10,000 or more students, nearly 20% do not have a full-time technology leader. In medium sized districts, one third of the schools do not have such a full-time position.

The statistics for this position by poverty concentration are significant—in wealthy districts with less than 10% free and reduced lunch, 60% have a full-time technology leader. That number drops to 47% in districts with more than 20% free and reduced lunch. These statistics are alarming considering the

universal role technology plays in our society. Our nation's schools must ensure that they have technology leaders who are able to align how students learn today with what will be expected of them in the future they'll inherit.

District technology leaders must be empowered with the range of skills and abilities needed to position themselves as *educational* leaders—not just technology leaders. The expanded role of today's education technology leader encompasses a broad range of skills including creating a vision of the transformative role of technology; implementing strategic planning and policy development; understanding of teaching and learning, assessment, and professional development needs; managing technology and support resources; and possessing the political and interpersonal skills to effectively work with all stakeholders.

District leaders must support and nurture the CTO in gaining the expanded set of skills and abilities necessary for helping the district reach its mission and goals and realize a 21st century learning environment. The *Framework* can serve as a roadmap to help your district meet these goals.

EVALUATION RUBRIC FOR THE CHIEF TECHNOLOGY OFFICER



There are many challenges for district administrators in evaluating technology leaders. What should their CTO jobs entail exactly? How should they be measured?

Although there is not one answer to these questions, this evaluation rubric developed by CoSN members can get you started. Based on the *CoSN Framework of Essential Skills of the K-12 CTO*, this evaluation rubric captures the skills and knowledge needed by an educational technology leader.

SKILL AREA 1.0 LEADERSHIP & VISION

1.1. Leadership & Vision

Indicators	Highly Effective (4)	Effective (3)	Improvement Necessary (2)	Ineffective
	<p>Fulfills the criteria for Level 3 and additionally:</p> <ul style="list-style-type: none"> • Works closely with the executive team and stakeholders to develop a shared vision with long-term, big-picture perspectives on district goals to plan for meaningful and effective uses of technology; provides leadership when creating a vision of how technology will help meet district goals. • Leverages appropriate relationships between emerging technology resources and the education process on a regular basis. • Demonstrates an understanding of assessment, curriculum and instruction, including their interdependent relationship and how technology can support them. • Demonstrates the knowledge and skills necessary to effect and facilitate change in the organization. 	<ul style="list-style-type: none"> • Participates with the administrative team and advisory committees to create and promote a vision for how technology will support the district's strategic and operational goals. • Facilitates the process of priority setting and decision making for meaningful uses of technology to educate students. 	<ul style="list-style-type: none"> • Occasionally demonstrates effective decision making for meaningful uses of technology to educate students, but does not promote a broader vision for how technology will support the district's strategic and operational goals. 	<ul style="list-style-type: none"> • Does not promote a vision for how technology will support strategic goals and does not demonstrate effective decision making for meaningful uses of technology to educate students.

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1.2 Strategic Planning

Indicators	Highly Effective (4)	Effective (3)	Improvement Necessary (2)	Ineffective
	<p>Fulfills the criteria for Level 3 and additionally:</p> <ul style="list-style-type: none"> • Has a high-level view across the school system and works with instructional and technical teams to identify steps needed to transform the technology vision into a long-range plan, complete with specific goals, objectives and action plans. • Demonstrates strategic ability and innovation in leading, planning and implementing the district's goals and objectives. • Articulates and leverages the VOI (value of investment) in technology to ensure effective delivery of services aligned to the district vision and goals. • Promotes and leads the implementation of industry best practice methodologies, tools and programs in support of technology. 	<ul style="list-style-type: none"> • Works with key system leaders to identify priorities needed to meet strategic goals. • Works with key system leaders to identify budget and funding mechanisms needed to meet strategic goals. • Knows the current goals of the school district and aligns the technology department work with those goals. • Has strategic understanding of district systems (e.g. instruction, assessment, finance, facilities, transportation, security, food service and others) in order to provide leadership regarding how technology can support them. 	<ul style="list-style-type: none"> • Develops technology budgets and demonstrates some understanding of district systems, but does not effectively work with key system leaders to identify priorities, budgets and funding mechanisms to meet strategic goals. 	<ul style="list-style-type: none"> • Does not effectively work with key system leaders to identify priorities, budget and funding mechanisms. • Fails to demonstrate understanding of district systems.

1.3 Ethics & Policies

<p>Fulfills the criteria for Level 3 and additionally:</p> <ul style="list-style-type: none"> • Manages the creation, implementation and enforcement of policies and educational programs relating to the social, legal and ethical issues related to technology use throughout the district and modeling responsible decision-making. • Demonstrates commitment to responsible environmental protection and energy-saving practices. • Actively participates in the policy development process and ensures policy supports a high- performing learning environment. • Facilitates equitable access to technology resources for all stakeholders. 	<ul style="list-style-type: none"> • Models and assures adherence to state and federal laws. • Demonstrates high standards of integrity and professional conduct with consideration for fairness and honesty. • Communicates to stakeholders appropriate ethical and professional behavior for technology use in the district. • Models and assures awareness about pertinent laws and legal issues related to implementation and use of technology in a district (e.g., copyright, privacy and compliance). • Demonstrates knowledge of vulnerabilities and issues pertaining to the safety of students and staff. 	<ul style="list-style-type: none"> • Models appropriate ethical and professional behavior for technology, but does not effectively communicate policies and practices to stakeholders. • Inconsistently demonstrates high standards of integrity and professional conduct with consideration for fairness and honesty. 	<ul style="list-style-type: none"> • Fails to model appropriate ethical and professional behavior for technology, and does not effectively communicate policies and practices to stakeholders. • Fails to demonstrate high standards of integrity and professional conduct with consideration for fairness and honesty.
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2.0 UNDERSTANDING THE EDUCATIONAL ENVIRONMENT

2.1 Instructional Focus & Professional Development

Indicators	Highly Effective (4)	Effective (3)	Improvement Necessary (2)	Ineffective
	<p>Fulfills the criteria for Level 3 and additionally:</p> <ul style="list-style-type: none"> Budgets, plans and coordinates ongoing, purposeful professional development for all staff using technologies; ensures a sufficient budget through the implementation and assessment process of emerging technologies. Empowers staff to reach a proficiency level to meet the ongoing demands of their jobs. Promotes standards for innovative teaching and learning that develop student proficiency in 21st century skills. Promotes the application of technology to address the diverse needs of students and maximize student learning. 	<ul style="list-style-type: none"> Plans for and coordinates purposeful professional development. Identifies and promotes how technology can support educational best practices through communication and collaboration with the district instructional leadership. Stays abreast of state and national standards, benchmarks and frameworks for technology literacy. 	<ul style="list-style-type: none"> Assists with professional development, but does not provide ongoing opportunities for staff. Responds to technology requests, but does not regularly identify and promote how technology can support educational best practices. 	<ul style="list-style-type: none"> Provides little or no professional development opportunities for staff. Fails to identify and promote how technology can support educational best practices.

2.2 Team Building & Staffing

Indicators	Highly Effective (4)	Effective (3)	Improvement Necessary (2)	Ineffective
	<p>Fulfills the criteria for Level 3 and additionally:</p> <ul style="list-style-type: none"> Plays an integral role in the district's strategic planning process; creates and supports cross-functional teams for decision making, technology support, professional development and other aspects of the district's technology program. Mentors and empowers others to assume leadership roles. 	<ul style="list-style-type: none"> Builds an environment of trust through communication and transparency about decisions and how they are made. Sets clear objectives and measures and monitors process, progress and results. Analyzes and identifies on an ongoing basis individual and team strengths, required areas of growth and how teams and their members are being deployed and redeployed. 	<ul style="list-style-type: none"> Frequently makes decisions without communicating how or why they are made. Objectives and measures are not clear and not monitored process, progress and results. Occasionally (but not on an ongoing basis) analyzes and identifies individual and team strengths, required areas of growth, and how teams and their members are being deployed and redeployed. 	<ul style="list-style-type: none"> Rarely communicates how or why decisions are made. Does not establish clear objectives and measures and doesn't monitor process, progress and results. Rarely analyzes and identifies individual and team strengths, required areas of growth, and how teams and their members are being deployed and redeployed.

2.2 Team Building & Staffing (continued)

Indicators	Highly Effective (4)	Effective (3)	Improvement Necessary (2)	Ineffective
	<ul style="list-style-type: none"> Creates cross-functional teams involving stakeholders for appropriate aspects of the district's technology program. 	<ul style="list-style-type: none"> Makes effective hiring decisions. Provides feedback to individuals and teams on a regular basis regarding areas of strength and required growth, using quantitative and qualitative data. 	<ul style="list-style-type: none"> Frequently makes poor hiring decisions. Sporadically provides feedback to individuals and teams regarding areas of strength and required growth, but often does not use quantitative and qualitative data. 	<ul style="list-style-type: none"> Frequently makes poor hiring decisions. Rarely provides feedback to individuals and teams regarding areas of strength and required growth and does not use quantitative and qualitative data when doing so.

2.3 Stakeholder Focus

Indicators	Highly Effective (4)	Effective (3)	Improvement Necessary (2)	Ineffective
	<p>Fulfills the criteria for Level 3 and additionally:</p> <ul style="list-style-type: none"> Builds relationships with all stakeholders, taking a close look at how the district determines requirements, expectations and preferences. Understands the key factors that lead to stakeholder satisfaction, focusing on how the district seeks knowledge, satisfaction and loyalty of students and other stakeholders. Collaborates with stakeholders to create a vision for how technology will support the district's strategic goals. Builds and leverages effective partnerships with organizations that benefit district stakeholders. Attempts to assess and respond to needs and concerns of nearly all workers and stakeholders. 	<ul style="list-style-type: none"> Effectively communicates with stakeholders a vision for how technology will support the district's strategic goals. Builds positive relationships with stakeholders. Assesses and responds to needs and concerns of most workers and stakeholders. 	<ul style="list-style-type: none"> Does not clearly communicate with stakeholders a vision for how technology will support the district's strategic goals. Has some positive relationships with stakeholders, but also regularly upsets or frustrates stakeholders. Assesses and responds to needs and concerns, but often does not meet the needs of workers and stakeholders. 	<ul style="list-style-type: none"> Does not communicate with stakeholders a vision for how technology will support the district's strategic goals. Does not build positive relationships with stakeholders. Frequently does not assess and respond to needs and concerns of workers.

3.0 MANAGING TECHNOLOGY

3.1 Information Technology Management

Indicators	Highly Effective (4)	Effective (3)	Improvement Necessary (2)	Ineffective
	<p>Fulfills the criteria for Level 3 and additionally:</p> <ul style="list-style-type: none"> • Directs, coordinates, and ensures implementation of all tasks related to technical systems, network infrastructure, standards, and integration of technology into every facet of district operations. • Effectively plans, implements and sustains all tasks related to technical systems, network infrastructure and computing device management. • The approach to projects consistently is proactive to current and future district needs. • System resources are rarely interrupted. • Evaluates all tasks related to technical systems, network infrastructure and computing device management. • Effectively directs, coordinates and ensures implementation of all tasks related to the integration of technology into district operations. • Ensures that disaster recovery and business continuity plans are an integral part of the district's technology program. 	<ul style="list-style-type: none"> • Effectively plans, implements and sustains all tasks related to technical systems, network infrastructure and computing device management. • The approach to projects is usually proactive. • System resources generally perform well and issues are resolved quickly and accurately. • Establishes a disaster recovery and business continuity plan. 	<ul style="list-style-type: none"> • Although some projects are well planned and implemented, most are poorly planned and are often reactionary in nature. • Issues are occasionally overlooked or not addressed promptly or accurately. • System resources are often disrupted, but are usually addressed relatively promptly. • There are strategies and methods in place for disaster recovery and business continuity, but no written plan. 	<ul style="list-style-type: none"> • Projects are poorly planned and implemented. • Solutions are usually reactionary in nature and frequently need to be re-reported. • System resources are generally unreliable and frequently disrupt operations. • There are minimal or no strategies and methods in place for disaster recovery and business continuity.

3.2 Communication Systems Management

Indicators	Highly Effective (4)	Effective (3)	Improvement Necessary (2)	Ineffective
	<p>Fulfills the criteria for Level 3 and additionally:</p> <ul style="list-style-type: none"> • Uses technology to improve communications, directing and coordinating the use of email, district websites, web tools, voice mail systems and other forms of communication to facilitate decision making and to enhance effective communication with key stakeholders. • Develops and implements procedures, strategies and technical solutions for keeping teacher websites, school web resources, and other communication tools updated, relevant and operational. • Reviews and uses emerging technologies that enhance communication. • Communication systems are very reliable with robust features and functionality. 	<ul style="list-style-type: none"> • Regularly directs and coordinates use of email, district websites, web tools, voicemail systems and other forms of communication. • Demonstrates working knowledge of various communication tools and techniques. • Effectively manages support issues related to keeping communication systems updated, compliant and operational. • Communication systems are reliable for users. 	<ul style="list-style-type: none"> • Occasionally directs and coordinates use of email, district websites, web tools, voicemail systems and other forms of communication. • Manages support issues related to communication systems, but many systems are outdated. • Communication systems are often unreliable 	<ul style="list-style-type: none"> • Rarely directs and coordinates use of email, district websites, web tools, voicemail systems and other forms of communication. • Does not effectively manage support issues related to communication systems. • Communication systems are frequently unreliable.

3.3 Business Management

Indicators	Highly Effective (4)	Effective (3)	Improvement Necessary (2)	Ineffective
	<p>Fulfills the criteria for Level 3 and additionally:</p> <ul style="list-style-type: none"> • Manages the budget and serves as a strong business leader who guides purchasing decisions, determines the return on investment for all technology implementations, and fosters good relationships with vendors, potential funders and other key groups. 	<ul style="list-style-type: none"> • Demonstrates knowledge of funding sources available to the district and appropriately leverages them to meet district and programmatic goals. • Develops and manage budgets, both annually and long-range. • Understands and applies principles of TCO and VOI of technology initiatives. 	<ul style="list-style-type: none"> • Develops and manages budgets, but often requires prompting, assistance and/or oversight. • Understands and applies principles of TCO and VOI of technology initiatives only on sporadic occasions. • Purchasing decisions are often proven to be undervalued solutions. 	<ul style="list-style-type: none"> • Does not effectively develop and manage budgets. • Fails to understand and apply principles of TCO and VOI of technology initiatives • Purchasing decisions are regularly proven to be undervalued solutions.

3.3 Business Management (continued)

Indicators	Highly Effective (4)	Effective (3)	Improvement Necessary (2)	Ineffective
	<ul style="list-style-type: none"> Pursues and secures grant opportunities or funding sources with low interest rates. Pursues and secures cost reduction or cost shifting measures to fund technology initiatives. 	<ul style="list-style-type: none"> Makes effective purchasing decisions following relevant laws, policies and guidelines. Understands and applies basic financial and accounting principles and processes and all regulatory guidelines applicable to district funds. Directs, manages and negotiates with vendors and business partners. Directs, coordinates and ensures implementation of all tasks related to selection and purchasing (e.g., RFPs, purchasing guidelines). 	<ul style="list-style-type: none"> Directs, manages and negotiates with vendors and business partners, but often requires prompting, assistance and/or oversight. Participates in tasks related to selection and purchasing (e.g., RFPs, purchasing guidelines), but often requires prompting, assistance and/or oversight. 	<ul style="list-style-type: none"> Directs, manages and negotiates with vendors and business partners, but often requires prompting, assistance and/or oversight Participates in tasks related to selection and purchasing (e.g., RFPs, purchasing guidelines), but often requires prompting, assistance and/or oversight.

3.4 Data Management

Indicators	Highly Effective (4)	Effective (3)	Improvement Necessary (2)	Ineffective
	<p>Fulfills the criteria for Level 3 and additionally:</p> <ul style="list-style-type: none"> Manages the establishment and maintenance of systems and tools for gathering, mining, integrating and reporting data in usable and meaningful ways to produce an information culture in which data management is critical to strategic planning. Participates with the administrative team and advisory committees to create and promote a vision for how data reporting will support the district's strategic and operational goals. Facilitates the process of priority setting of the district's data analysis needs. Coordinates training opportunities for teachers and administrators in making good uses of data systems. 	<ul style="list-style-type: none"> Establishes systems and tools for gathering, warehousing, mining, integrating and reporting data in usable and meaningful ways. Maintains systems and tools for gathering, warehousing, mining, integrating and reporting data in usable and meaningful ways. Utilizes data-driven decision making and related processes in support of stakeholders. Remains knowledgeable about data related industry standards (e.g. SIF). Assesses and responds to information reporting requirements related to government mandates. 	<ul style="list-style-type: none"> Maintains systems and tools for gathering, warehousing, mining, integrating and reporting data, but does not look for ways to improve those systems. Inconsistently utilizes data-driven decision making and related processes in support of stakeholders. Does not consistently remain current on data related industry standards (e.g., SIF). Inconsistently responds to information reporting requirements related to government mandates 	<ul style="list-style-type: none"> Fails to implement and support tools for gathering, warehousing, mining, integrating and reporting data in usable and meaningful ways. Rarely utilizes data-driven decision making and related processes in support of stakeholders. Does not consistently remain current on data related industry standards (e.g., SIF). Frequently fails to respond to information reporting requirements related to government mandates



SELF-ASSESSMENT FOR CHIEF TECHNOLOGY OFFICERS AND TECHNOLOGY STAFF

10 Essential Skill Areas in Three Professional Categories

LEADERSHIP & VISION

1. Leadership & Vision
2. Strategic Planning
3. Ethics & Policies

UNDERSTANDING THE EDUCATIONAL ENVIRONMENT

4. Instructional Focus & Professional Development
5. Team Building & Staffing
6. Stakeholder Focus

MANAGING TECHNOLOGY & SUPPORT RESOURCES

7. Information Technology Management
8. Communication Systems Management
9. Business Management
10. Data Management

Plus: **CORE VALUES & SKILLS**

Critical personal skills and behaviors

—CoSN's *Framework of Essential Skills of the K-12 CTO*

LEADERSHIP & VISION

Leadership & Vision Working closely with the executive team and stakeholders to develop a shared vision with long-term, big-picture perspectives on a district's goals to plan for meaningful and effective uses of technology; providing leadership into creating a vision of how technology can help meet district goals.

		Excel (5)	Proficient (4)	Inter- mediate (3)	Basic (2)	Need help! (1)
1	Champion and model effective/innovative use of educational technologies.					
2	Identify core business and culture of the school organization.					
3	Establish and lead advisory committees and facilitate process of priority setting and decision-making.					
4	Envision relationships among emerging technology resources and the education process.					
5	Describe the relationship among technology, assessment, curriculum and instruction					
6	Manage the change process and deal effectively with ambiguity					
7	Work jointly with other units to assist them in using technology more effectively and efficiently.					

Strategic Planning Having a high-level view across the school system of things needed to be successful; working with the instructional and technical teams to identify the steps needed to transform the technology vision into a long-range plan, complete with specific goals, objectives and action plans.

		Excel (5)	Proficient (4)	Inter- mediate (3)	Basic (2)	Need help! (1)
8	Demonstrate a strategic approach and innovation in leading, planning and implementing district goals, including developing and evaluating the district's technology plan.					
9	Work with key system leaders, people networks (e.g., math teachers) and departments to identify budget and funding mechanisms and lead the district from vision to realization of goals.					
10	Assemble and lead implementation of industry best practice methodologies, tools and programs such as total cost of ownership (TCO) and value of investment (VOI) in support of technology					
11	Explain the impact and need for technology throughout the enterprise (e.g., instruction, assessment, finance, facilities, transportation, security, food service and others) to provide leadership regarding how technology can support each.					
12	Inform the organization of risk management strategies and design risk mitigation strategies in support of business and instructional initiatives.					

Ethics & Policies Overseeing the creation, implementation and enforcement of policies and educational programs relates to the social, legal and ethical issues involved in technology use throughout the district and modeling of responsible decision making.

		Excel (5)	Proficient (4)	Inter- mediate (3)	Basic (2)	Need help! (1)
13	Demonstrate high standards of integrity and professional conduct with consideration for fairness and honesty.					
14	Work closely with all stakeholders to ensure adherence to state and federal guidelines, regulations and laws.					
15	Identify relevant issues including safety, technology-related health concerns and guidelines for fair and ethical implementation of technology.					
16	Incorporate responsible environmental protection and energy-saving practices in all technology-related activities.					
17	Participate in the policy development process to ensure that appropriate technology supports a high-performing learning environment and equitable access for all stakeholders.					

UNDERSTANDING THE EDUCATIONAL ENVIRONMENT

Instructional Focus & Professional Development Budgeting for, planning for and coordinating ongoing, purposeful professional development for all staff using technologies, including ensuring a sufficient budget through the implementation and assessment process of emerging technologies.

		Excel (5)	Proficient (4)	Inter- mediate (3)	Basic (2)	Need help! (1)
18	Design and coordinate professional development to develop teachers' technology proficiency for 21st century teaching and learning..					
19	Identify standards for innovative teaching and learning that develop student proficiency in 21st century skills.					
20	Model how technology can support educational best practices through collaboration with the district instructional leadership.					
21	Summarize the application of technology to address diverse needs of students and maximize student learning.					
22	Monitor state and national standards, benchmarks and frameworks for educational technology.					
23	Develop and coordinate professional development for staff to increase staff technology proficiency level and maximize business efficiency.					
24	Serve as a member of other district cross-functional project teams.					

Team Building & Staffing Creating and supporting cross-functional teams for decision-making, technology support, professional development and other aspects of the district’s technology program as an integral part of strategic planning.

		Excel (5)	Proficient (4)	Inter- mediate (3)	Basic (2)	Need help! (1)
25	Demonstrate strong leadership skills and mentor others to assume leadership roles..					
26	Coordinate and lead cross-functional teams to best address the district strategic plan					
27	Build an environment of trust through communication and transparency about decisions and how they are made.					
28	Incorporate quality improvement tools for decision-making.					
29	Identify strengths and areas of need to make effective hiring decisions.					
30	Ensure appropriate expertise is available to support different aspects of the IT program.					
31	Nurture an environment that encourages communication among team members.					

Stakeholder Focus Using knowledge you have about stakeholders and building relationships with all of them; taking a close look at how the district determines requirements, expectations and preferences of stakeholders as well as the key factors that lead to stakeholder satisfaction; understanding how the district seeks knowledge, satisfaction and loyalty of students and other stakeholders.

		Excel (5)	Proficient (4)	Inter- mediate (3)	Basic (2)	Need help! (1)
32	Develop buy-in for the vision for the district’s technology program.					
33	Communicate using emerging collaborative technologies to reach stakeholders.					
34	Build relationships with stakeholders.					
35	Develop effective partnerships with organizations that benefit district stakeholders.					
36	Assess and respond to needs and concerns of all knowledge workers and stakeholders.					

MANAGING TECHNOLOGY & SUPPORT RESOURCES

Information Technology Management Directing, coordinating and ensuring implementation of all tasks related to technical, infrastructure, standards and integration of technology into every facet of district operations—among the many things considered are systems administration, backup and storage, data security, disaster recovery, network infrastructure, network management, network security, Internet bandwidth, federal and state compliance, desktop support and others.

		Excel (5)	Proficient (4)	Inter- mediate (3)	Basic (2)	Need help! (1)
37	Demonstrate knowledge and expertise about technical systems, network infrastructure and computer management					
38	Plan, implement and sustain all tasks related to technical systems, network infrastructure and desktop/notebook computer management.					
39	Develop, collect, interpret and report IT metrics for all aspects of the IT system.					
40	Make purchasing and implementation decisions based on needs of the total school system—and on an understanding of the full life cycle of technology purchases.					
41	Set practical and realistic timelines for technology implementation.					
42	Develop disaster recovery and business continuity plans that are an integral part of the district's technology program					

Communication Systems Management Using technology to improve communication; directing and coordinating the use of email, district websites, web tools, voice mail systems and other forms of communication to facilitate decision-making and enhance effective communication with key stakeholders.

		Excel (5)	Proficient (4)	Inter- mediate (3)	Basic (2)	Need help! (1)
43	Direct and coordinate use of email, district websites, web tools, voice systems and other forms of communication.					
44	Describe current and emerging communication tools, including emerging communication technologies to enhance engagement online					
45	Explain technical issues related to implementation of a range of communication tools					
46	Describe technical support issues and staffing needed to keep district communication systems updated, compliant and operational					
47	Identify design, accessibility and compliance issues necessary for keeping district, school and teacher websites and other communication tools updated and operational.					

Business Management Managing budgets and serving as a strong business leader who guides purchasing decisions, assists in determining return on investment for all technology implementations and fosters good relationships with vendors, potential funders and other key groups.

		Excel (5)	Proficient (4)	Inter- mediate (3)	Basic (2)	Need help! (1)
48	Identify funding sources available to the district and appropriately leverage them to meet district and programmatic goals.					
49	Manage annual and long-term budgets, making purchasing decisions and coordinating all purchasing-related tasks.					
50	Apply basic financial and accounting principles and processes following relevant laws, policies and guidelines.					
51	Analyze market rates for acquisition of technology equipment and services, considering issues that determine TCO and VOI.					
52	Negotiate and maintain relationships with vendors and business partners.					

Data Management Overseeing the establishment and maintenance of systems and tools for gathering, mining, integrating and reporting data in usable and meaningful ways to produce an information culture in which data management is critical to strategic planning.

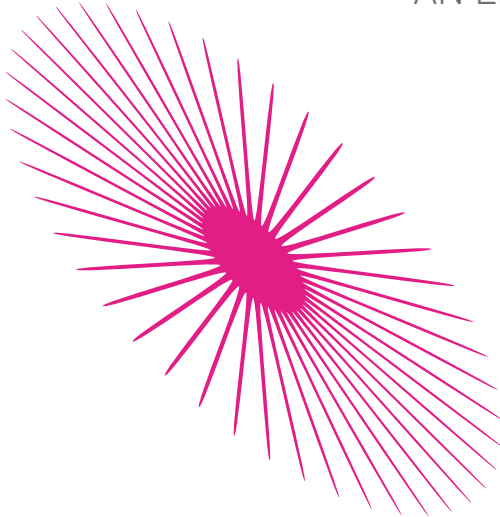
		Excel (5)	Proficient (4)	Inter- mediate (3)	Basic (2)	Need help! (1)
53	Describe data-driven decision making and the role information plays in shaping and supporting a district's educational programs.					
54	Explain techniques and tools for data gathering, warehousing, mining, integrating and reporting data in useable and meaningful ways.					
55	Support district data-driven decision making initiatives.					
56	Identify data-related industry standards and governmental mandates with information reporting requirements.					
57	Use data-driven decision making to assess and respond to needs and concerns of a variety of knowledge workers.					

CORE VALUES & SKILLS

These underlying values and skills cut across all others and are ones found in effective CTOs. They represent critical personal skills and behaviors necessary for accomplishing all other identified competencies.

		Excel (5)	Proficient (4)	Inter- mediate (3)	Basic (2)	Need help! (1)
58	Communicate directly, honestly and respectfully.					
59	Effectively communicate in all forms of speaking, writing and presenting, using emerging communication technologies when appropriate.					
60	Demonstrate courage.					
61	Be flexible, credible and adaptable.					
62	Be results-oriented in both organizational improvement and personal learning.					
63	Lead for innovation, modeling behaviors others are encouraged to adopt.					

INTERVIEW QUESTIONS FOR HIRING AN EDUCATIONAL TECHNOLOGY LEADER



When you are seeking to hire a Chief Technology Officer (CTO) or Technology Director for your school district, you want to ensure that this person has extensive technology experience and can apply these skills in an educational environment.

Your CTO will be working with Chief Academic Officers, Chief Financial Officers, Chief Operating Officers and others at the district level, as well as principals, teachers, parents and the School Board. This person needs to have the leadership skills necessary to effectively communicate with these various stakeholders.

CoSN has developed this set of interview questions that will help you gauge CTO candidates' knowledge and skill levels. These questions are based on the 10 skill areas of the *CoSN Framework of Essential Skills of the K-12 CTO*.

LEADERSHIP & VISION

Work closely with the executive team and stakeholders to develop a shared vision with long-term, big-picture perspectives on district goals to plan for meaningful and effective uses of technology, and to provide leadership when creating a vision of how technology will help meet district goals.

Interview Questions

1. Describe how you have created a plan to integrate education technology into the district's strategic and operational goals.
2. Which stakeholders did you need to include or consult with when formulating this plan?
3. How did you measure the cost-effectiveness of your strategic plan?
4. How did you measure its overall effectiveness?
5. How did you mitigate the risk of implementing your plan?

STRATEGIC PLANNING

Have a high-level view across the school system and work with instructional and technical teams to identify steps needed to transform the technology vision into a long-range plan, complete with specific goals, objectives and action plans.

Interview Questions

1. What do you see are the three most promising technologies on the horizon for today's educational environment?
2. Describe how you would build a coalition with district stakeholders to implement these technologies.

ETHICS & POLICIES

Manage the creation, implementation and enforcement of policies and educational programs relating to the social, legal and ethical issues of technology use throughout the district and modeling responsible decision-making.

Interview Questions

1. Describe the ways in which you have safeguarded students' safety and privacy as it relates to technology use.
2. What federal laws are we obligated to adhere to as they relate to children's online safety?

INSTRUCTIONAL FOCUS & PROFESSIONAL DEVELOPMENT

Budget, plan and coordinate ongoing, purposeful professional development for all staff using technologies; ensure a sufficient budget through the implementation and assessment process of emerging technologies.

Interview Questions

1. Describe how you have ensured that your staff stays current about the latest trends and technologies emerging in the education field.
2. How have you enhanced students' learning through the use of technology?
3. How have you kept other stakeholders (such as superintendents, faculty, etc.) informed on new technologies that can enhance learning?

TEAM BUILDING & STAFFING

Play an integral role in the district's strategic planning process; create and support cross-functional teams for decision-making, technology support, professional development and other aspects of the district's technology program.

Interview Questions

1. What is your philosophy on managing or collaborating with cross-functional teams?
2. How have you ensured that all participants are equally represented?
3. How have you handled conflicts that arise among cross-functional teams?

STAKEHOLDER FOCUS

Build relationships with all stakeholders, taking a close look at how the district determines requirements, expectations and preferences. Understand the key factors that lead to stakeholder satisfaction, focusing on how the district seeks knowledge, satisfaction and loyalty of students and other stakeholders.

Interview Questions

1. There are many stakeholders in the education environment. Besides the administration staff, teachers and students, name at least three other stakeholder groups you have worked with and how you determined their expectations and requirements.
2. How did you prioritize their conflicting expectations or needs?

INFORMATION TECHNOLOGY MANAGEMENT

Direct, coordinate and ensure implementation of all tasks related to technical, infrastructure, standards and integration of technology into every facet of district operations.

Interview Questions

1. What are your experiences using cloud computing? What were the advantages and disadvantages?
2. When does it make more sense to outsource? What are the advantages and disadvantages of outsourcing?
3. Describe how you have developed and implemented a disaster recovery and business continuity plan.

COMMUNICATION SYSTEMS MANAGEMENT

Use technology to improve communication, directing and coordinating the use of email, district websites, web tools, voice mail systems and other forms of communication to facilitate decision-making and to enhance effective communication with key stakeholders.

Interview Questions

1. What techniques and technologies have you implemented to improve communication district-wide?
2. What were some of the challenges you encountered using district-wide communications tools?

BUSINESS MANAGEMENT

Manage the budget and serve as a strong business leader who guides purchasing decisions, determines the return on investment for all technology implementations and fosters good relationships with vendors, potential funders and other key groups.

Interview Questions

1. Describe your experiences in creating and managing a district-wide technology budget.
2. How did you make purchasing decisions? In making these decisions, how did you forecast the technology's total cost of ownership?
3. How did you measure the return on investments?
4. How did you decide whether to purchase or lease equipment?

DATA MANAGEMENT

Manage the establishment and maintenance of systems and tools for gathering, mining, integrating and reporting data in usable and meaningful ways to produce an information culture in which data management is critical to strategic planning.

Interview Questions

1. How have you used actionable data to increase student success?
2. What technology systems have you used to collect, analyze and disseminate data that ultimately informs instruction?
3. How did you ensure the integrity and authenticity of the collected data?
4. How did you ensure the security of the collected data?

JOB DESCRIPTION FOR A CHIEF TECHNOLOGY OFFICER OR TECHNOLOGY DIRECTOR

JOB GOALS

- Provide leadership in identifying, assessing and managing technology needs for the school system to the Superintendent and other stakeholders.
- Direct, coordinate, supervise, facilitate or perform all tasks and elements needed to effect comprehensive integration of appropriate technology into every facet of operations.
- Contribute to the infusion of educational technology into classrooms, libraries/media centers and district offices by providing highly motivating, full-time, professional leadership in all areas of technology planning and technology resource management.

QUALIFICATIONS

- Minimum of a master's degree in a related field
- Demonstrated professional experience in a technology leadership role
- At least four years' experience in K-12 education preferred
- Demonstrated written and verbal communication skills, as well as speaking and presentation skills
- Certified Education Technology Leader (CETL) certification required or must be attained within one year of hire

ESSENTIAL DUTIES

- Provide leadership in all aspects of technology for the school system.
- Coordinate development, refinement and execution of the district strategic plan, involving all stakeholders and governance committees.
- Collaborate with the Superintendent and Cabinet to make informed decisions.
- Collaborate with principals and school staff to make informed decisions.
- Lead district initiatives, collaborating across departments and functional areas that support adoption and implementation of technology in all aspects of school business, including those that improve teaching and learning and promote 21st century skills.
- Create and support cross-functional teams for needs assessment, decision-making, technology support, professional development and other aspects of the district technology program.
- Manage and direct staff in support of all technology applications to help the district meet goals of the strategic plan.
- Supervise or coordinate the skills development of all employees in the operation of technology. Build awareness among employees of available resources and the role of technology in the instructional process.
- Develop and coordinate a broad range of technology-based resources, maximizing the availability and use of these resources.



CETL CERTIFICATION FOR EDUCATIONAL TECHNOLOGY STAFF



The Certified Education Technology Leader (CETL™) examination is a rigorous, two-part exam that identifies those who have mastered the framework skills and knowledge needed to bring 21st century skills to schools. The exam is a true measure of today's education technology field. The CETL program is also professional development to enhance the knowledge of learning technologies.

Superintendents who have encouraged CETL certification report these benefits:

- Stakeholders see that they are committed to the highest standards in administration.
- They hire and promote only the most skilled and knowledgeable education technologists.
- Their districts keep current on latest trends and best practices in education technology.
- Asking for CETL demonstrates commitment to their employees' professional growth.
- The technology team skills are well matched to the job requirements of their positions.



More than half of CETL-certified educational technology leaders hold district, cabinet-level positions.

The Examination

Only candidates passing both parts of the two-part exam earn the CETL designation. Candidates must pass Part I to be eligible to take Part II.

- Part I is a multiple-choice exam administered at proctored sites throughout the country. It identifies those who have a clear understanding of best practices, federal laws, and existing and emerging technologies in the education technology field.
- A critical aspect of a CTO's role is to effectively communicate highly technical concepts to a broad stakeholder base. The essay-based Part II tests the candidate's on this and is graded by a panel of experts trained by testing specialists using a pre-determined rubric.

Eligibility Requirements

- A bachelor's degree plus four years of educational technology experience
- Educational technology experience is defined as demonstrable experience in the three overarching skills areas of the CoSN *Framework of Essential Skills of the K-12 CTO*.

To stay current in the field, CETL-certified professionals must recertify by completing 60 hours of continuing education during a three-year certification cycle.

Preparing for the Exam

Completing specific prep courses is not required to sit for the exam. Applicants should understand the skills outlined in the framework and seek professional development for areas they need to strengthen. This toolkit includes a Self-Assessment for Chief Technology Officers and Technology Staff to help identify a candidate's strengths and areas for additional training. CoSN also offers an 11-module training guide.

Costs and Funding

The application fee for the exam is \$299 for CoSN members and \$499 for nonmembers. Many certified educational technology professionals had the fees paid through their district's professional development budgets.

State Partnerships

State departments of education and education service agencies that already understand the importance of CETL certification are participating in [CoSN's State Partnership Program](#). CETL Partnerships allow states to provide scholarships to their educational technology leaders for preparing for and taking the CETL exam. In exchange, these states show their commitment to 21st century learning in their districts and are recognized for this forward-thinking commitment in a number of ways.

CoSN also partners with educational service agencies to offer professional development and CETL certification exam fees at reduced rates.