



CTO BOOT CAMP

2016 Summer Clinic

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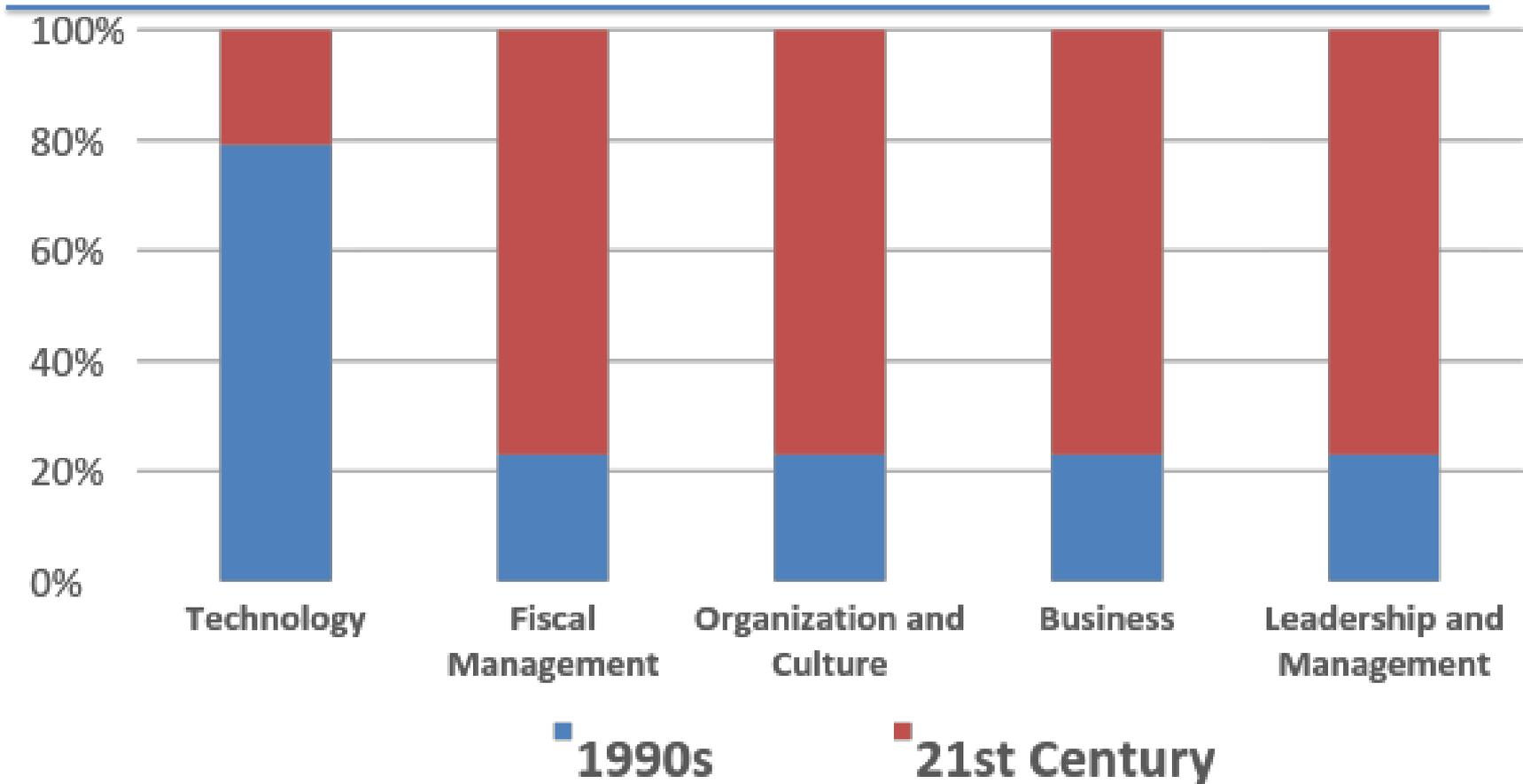
CTO BOOT CAMP

This session is designed for new and aspiring CTOs to help them with strategies and skills of becoming a chief technology officer.

Learn about the Essential Skills Framework for CTOs and the Certified Education Technology Leader (CETL) certification program. Current CTOs can also benefit from this session!



The Changing Role of the CTO



New Job Expectations



What are some new job expectations that are required of you as your district's technology leader?

- District-level strategic planning
- Blending information systems, instructional technology and professional learning into a cohesive team
- Public relations
- Attending all executive level meetings both during the day and the evenings
- Participating in budgeting preparation for the entire district
- Long-term financial strategy
- Learning technology

Results from the Texas K-12 CTO Council Survey Conducted on October 13 – 16, 2014

New Job Expectations



What are some new job expectations that are required of you as your district's technology leader?

- Federating identities between clouds and internal systems
- Supporting mobile devices that the district didn't purchase
- Supporting instructional as well as technical focus
- Involved with how teachers use the technology and more deeply involved with curriculum and textbook decisions
- Community awareness and 1:1 deployments brings renewed attention to wireless, filtering, identity security
- Connecting globally to people
- Staying abreast of cutting edge technology, ex.wifi capabilities
- Sharing documents electronically

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New Job Expectations



What are some new job expectations that are required of you as your district's technology leader?

- Evolving from just keeping tech up and running to developing processes for determining what technology best supports instruction.
 - The types and kinds of technology being utilized to support instruction is evolving faster than we can keep up with it.
- CTOs need to know how to plan for intelligent procurement, nimble rollouts, and update and replacing technology at the point where it's instructionally relevant and financially prudent to do so.
- Understanding of systems design like the Baldrige criteria as well as understanding how to keep the technology working. The tech environment is more dynamic and requires the ability to build solid and functional relationships with curriculum and other instructional staff.

Results from the Texas K-12 CTO Council Survey Conducted on October 13 – 16, 2014

New Job Expectations



What are some new job expectations that are required of you as your district's technology leader?

- Anything dealing with Technology! As new or updated technologies come out, people are asking about them.
- Working more with the instructional staff to be sure that we are all going in the same direction.
- There are more choices available for hardware/software, which makes decisions more difficult.
- Doing more with less (budget/staff/time) to an exponential degree.
- Digital Textbooks/Content - not new, but more grey areas
- Parent communications and community leadership

Results from the Texas K-12 CTO Council Survey Conducted on October 13 – 16, 2014

New Job Expectations



What are some new job expectations that are required of you as your district's technology leader?

- Primarily, the expectations for use of technology have grown exponentially. Supporting traditional technologies such as labs, file & print sharing, email, continues while cloud computing, BYOD, mobility and collaborative tools have been added to the mix. In addition, several areas of responsibility that used to be under Operations are now Technology. Examples are: Alarm systems, CCTV and copiers.
- Maintaining a wireless infrastructure and internet connection robust enough to handle the ever growing needs of BYOD

Results from the Texas K-12 CTO Council Survey Conducted on October 13 – 16, 2014

New Job Expectations



What are some new job expectations that are required of you as your district's technology leader?

- Do more with the same staffing levels and budget we had 10 plus years ago (although we did finally squeeze out 4 additional technicians this year - but probably needed 6-8)
- I think we have to be integrated both horizontally and vertically in all aspects of school (Technical, Vision, Change Advocates, Budget, Planning, IT, Instruction - eg CETL). In years past we were focused primarily on the technology components of what it took to keep schools operational - Finance, SIS, Internet Access, Communications. We didn't have to go deeper and further - it was operational in nature.

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New Job Expectations



What are some new job expectations that are required of you as your district's technology leader?

- The SOP's of the past are now BYOD and any device needs access to our networks. Internet is the lifeblood of instruction and is growing by gigabytes per day.
- Student collaboration is the current trend with Google Classroom driving the surge. Students are more aware of their time investment in education with so much information available on the Internet along with their social sites.
- WIIFM (What's In It For Me) is mantra. We as tech leaders need to be "fast on our feet as possible" to address the needs of today's classroom instruction.

Results from the Texas K-12 CTO Council Survey Conducted on October 13 – 16, 2014

New Job Expectations



What are some new job expectations that are required of you as your district's technology leader?

- As more departments embrace technology we are expected to become the experts in helping implement and maintain their program improvements. This is nothing new but just seems that more and more departments are turning to technology.
- Develop expertise in network and data security as the threats expand and become more sophisticated.
- Today our work is never done!

Results from the Texas K-12 CTO Council Survey Conducted on October 13 – 16, 2014

K-12 CTO Skills *Moving From:*



- *Configuring networks and servers to **mediating a contract for an ASP.***
- *Supervising technicians to **evaluating out-sourced work and setting up effective helpdesks.***
- *Writing technology plans to **working inter-departmentally** with curriculum, staff-development, public relations, assessment and strategic planning.*
- *Providing technology devices to staff and students to **providing access** to school resources for personal devices.*

[Robert J Moore, *The Future of Information Technology: How The Next Ten Years Will Fundamentally Change the Role of the K-12 CTO: Executive Summary**, November 2010, COSN](#)

K-12 CTO Skills *Moving From:*



- *Writing policies that dictate behaviors to **writing guidelines and curricula** that encourage safe and responsible use.*
- *Knowing less about the "how" of a new technology to the "why" of a new technology in education.*
- *Maintaining the status quo to **selecting and planning for new technology applications and best practices.***

We've been asking our schools to change for many years. Are we prepared to change our own roles?

[Robert J Moore, *The Future of Information Technology: How The Next Ten Years Will Fundamentally Change the Role of the K-12 CTO: Executive Summary**, November 2010, COSN](#)

New Challenges for CTOs



Which areas are the most challenging for you?

Now a Framework for the CTO Role



I. Leadership + Vision



Leadership + Vision



Ethics + Policies



Strategic Planning

II. Understanding the Educational Environment



Instructional Focus
+ Prof. Development



Team Building
+ Staffing



Stakeholder Focus

III. Managing Technology & Support Resources



Information
Technology
Management



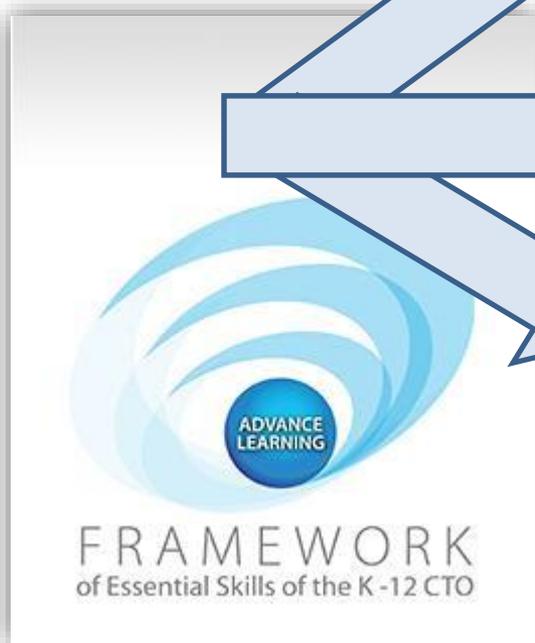
Communication
Systems
Management



Business
Management



Data
Management



Why the Need for a CTO Framework?

Clear identification of the role of the CTO position in a district's leadership organization

-
- Professional development opportunities
 - Validation from industry recognized leaders
 - Need for partnership of Teaching and Learning and Technology Services
 - Focus on broad “Body of Knowledge”

Framework for the CTO Role

- **Identifies** the skills and knowledge that CTOs need to either acquire or to strengthen.
- **Defines** best practices, whether or not they are followed in every school district.
- **Illustrates** the expanded role of CTO as an educator—not just technology—leader.

The Framework may be used to:

- **Self-assess**
- **Describe** the clearly identifiable role for CTO within the district leadership structure
- **Validate** CTOs who already have these skills and knowledge
- **Help** guide the CTO interview and hiring process
- **Provide** roadmap for professional development for both CTOs and those who hire them
- **Clarifies** the need for partnership of Teaching, Learning, and Technology Services

Framework of Essential Skills of the K-12 Chief Technology Officer

Leadership & Vision

Leadership & Vision

Strategic Planning

Ethics & Policies

Managing Technology & Support Resources

Information Technology

Communication Systems

Business Management

Data Management

Understanding the Educational Environment

Instructional Focus &
Professional Development

Team Building & Staffing

Data Stakeholder Focus

Core Values & Skills

Effective Communicator • Innovative • Courageous
Flexible & Adaptable • Results-Oriented

Leadership & Vision

Leadership & Vision

Leadership & Vision

Strategic Planning

Ethics & Policies



Leadership + Vision

Leadership & Vision

Leadership



“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; provide leadership when creating a vision of how technology will help meet district goals.”

- Understand the big picture
- Participate in the decision-making process
- Facilitate change



Strategic Planning

Leadership & Vision 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.”

- Align technology efforts to strategic goals
- Utilize best practices and VOI analysis
- Mitigate risk



Ethics + Policies

Leadership & Vision

Ethics & Policies



“Manage 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.”

- Enforce PEIMS, FERPA, COPPA, & CIPA
- Understand eRate
- Assure fairness and honesty
- Focus on green computing

Understanding the Educational Environment

Understanding the Educational Environment

Instructional Focus & Professional Development

Team Building & Staffing

Data Stakeholder Focus



Instructional Focus
+ Prof. Development

Understanding the Educational Environment



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

- Budget, plan, and coordinate professional development
- Implement emerging technologies
- Assure technology integration in instruction



Understanding the Educational Environment



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.”

- Build cross-functional teams
- Create shared expectations
- Hire and develop staff



Stakeholder Focus

Understanding the Educational Environment



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.”

- Collaborate and communicate
- Build relationships and partnerships

Managing Technology & Support Resources

Managing Technology
& Support

Information Technology

Communication Systems

Business Management

Data Management



Managing Technology & Support Resources



Information Technology

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

- Formulate data - informed to plan, implement, sustain, evaluate and adapt
- Support devices, infrastructure, and systems
- Metrics and business continuity



Managing Technology & Support Resources



Communication Systems

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

- Support all technologies, including websites, e-mail, voicemail, cell, and much more....
- Assure Interoperability
- Archive and manage records retention



Managing Technology & Support Resources



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.”

- Manage funding sources and budgets
- Manage purchasing policies, RFPs, Co-op
- Negotiate with vendors
- Prepare Total Cost and Value of Ownership



Managing Technology & Support Resources



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.”

- Maintain task-specific software, and custom code
- Prepare reports and data-mining
- Sustain information and software

Core Values & Skills



The Core Values & Skills represent the critical personal skills and behaviors necessary for accomplishing all of the other competencies identified in the Framework.

Core Values & Skills

Effective Communicator

Innovative

Courageous

Flexible & Adaptable

Results-Oriented

Core Value: Being an Effective Communicator



CTOs must communicate directly, honestly, and respectfully. They must effectively communicate in all forms of speaking, writing, and presenting, using emerging technologies and aligning the message to the stakeholder.

Core Value: Effective Communicator



Examples

- Presentations
- Published writing
- Persuasive internal discussions regarding district initiatives
- Developing team members to have good communication skills
- Email news to department team leaders
- Meet with Department administrators and team leaders
- Newspaper articles, presentations to the school board, teacher training
- Listen before talking, ask good questions
- Remembering who your audience is and talking to that level
- Transparent and proactive communication with all stakeholders

Results from the Texas K-12 CTO Council Survey Conducted on October 13 – 16, 2014

Core Value: Effective Communicator



Examples

- Say things in multiple times and via multiple channels
- Sit on the Superintendent's cabinet and participate in regular discussions regarding all school business
- Ensure that essential information is placed on district website
- Engage in weekly meetings with senior staff members.
- Seek out leaders in other departments to discuss upcoming initiatives and ensure that we are all on the same page.
- Participate in online blog for dept., Create videos, Connect w/parents on Facebook

Results from the Texas K-12 CTO Council Survey Conducted on October 13 – 16, 2014

Core Value: Being Innovative



CTOs must lead and manage for innovation, modeling the behaviors others are encouraged to adopt.

Core Value:

Being Innovative

Examples



- Implementing Latitude 2 Learn, 1:1 tablet computers at scale.
- Deploying 1:1 9 years ago
- Going out on a limb and building our own phone system using an open source project called asterisk. We have it running 7,000 telephones in our district. (at a cost of \$0 per year)
- Implementing Learning Commons and MakerSpaces
- Taking manual paper driven processes and automate these using cloud based services.
- Implementing VoIP in 1999. At the time we were the largest implementation in the US of any kind. We saved the district a substantial amount and paved the way for similar projects.

Results from the Texas K-12 CTO Council Survey Conducted on October 13 – 16, 2014

Core Value: Being Innovative

Examples



- Embracing a parent driven after school program where Minecraft clubs have been allowed to grow.
- Implementing our 1:1 project I helped define the scope of the project to enhance our student learning. We decided on iPads along with VDI to provide a full featured experience for students.
 - We were purposeful and strategic in our implementation of wireless by utilizing wireless analyzers to determine the appropriate level of wi-fi density to ensure a success.
- Designing and building our private fiber-optic ring connecting all of our campuses.
- Creating 1:X program; xCamp professional learning experience

Results from the Texas K-12 CTO Council Survey Conducted on October 13 – 16, 2014

Core Value: Exhibiting Courage



CTOs must be willing to have the difficult conversations, promoting effective technology solutions, even when it is uncomfortable for the organization, and also pulling back when technology solutions are requested that do not address a real need.

Core Value:

Exhibiting Courage

Examples



- Selecting iPads for a 1:1 despite initial internal and external resistance. Selecting Dell Window tablets, despite internal and external skepticism
- When the district has to cut staff, making decision on which positions to dissolve and which positions to keep. That was an administrative team decision.
- We had a school board member that wanted us to purchase iPads for our High School before we had the infrastructure to support it. Through a series of presentations and meetings I was able to show him we weren't ready but also show him the plan we created to be ready in the future. Now we have started the rollout but we have taken the steps in the plan to prepare.
- Facing the staffing needs while deploying 1:1 across the district.

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Core Value:

Exhibiting Courage

Examples



- Every time I get in front of our faculty counsel. The move to the cloud for e-mail (for staff) was the time I believed to have exhibited the most courage. We had some initial issues with some of the board members e-mails and I hung with the cloud solution in opposition to others in the leadership team. The issues were resolved and it evolved into a full solution that runs many organizations today.
- Holding on technology refresh because of anticipating upcoming new device roll out.
- At two different times, vendors tried to get me fired because I did not select their products. Both times I was investigated and found innocent of the charges, and the decisions I made were later seen as the correct decision for the district.

Results from the Texas K-12 CTO Council Survey Conducted on October 13 – 16, 2014

Core Value:

Exhibiting Courage

Examples



- We have promoted BYOD rather than get caught in a one to one iPad rollout. Holding off being trendy allowed us to see the power of Google in the Classroom and Dell Chromebooks.
- For several year's I was a vocal advocate to relax our district's restrictive filtering policies. Eventually it came to pass.
- When we started the conversations with our community, trustees and leadership teams regarding the need for a 1:1 project - I stepped out to stress that this was the right thing for students.
- Expanding the district's one to one program knowing that it is not embraced by all stakeholders.
- As the district technology leader I am exhibiting courage daily by making the decisions that abreast or ahead of the curve.

Results from the Texas K-12 CTO Council Survey Conducted on October 13 – 16, 2014

Core Value: Being Flexible and Adaptable



CTOs must be flexible, adaptable, and also credible in their performance of work.

Core Value: Being Results-Oriented



CTOs must be results-oriented, focusing on measurement of results and continuous improvement, in both organizational and personal learning.

Core Value: Being Results Oriented

Examples



- Some things like district initiatives should be quantifiable and measured so the results can be shown at the end of the year.
- If we don't set metrics and milestones, then any results will do.
- Statistics and numbers influence decisions.
- Clearly define problems and then help outline how we can get to our end need for the "results".
- Measure what is important to us.
- Keep eye on the end goal.
- Data informs, it does not drive.

Results from the Texas K-12 CTO Council Survey Conducted on October 13 – 16, 2014



CETL Certification

**Ask all those
that are CETLs
to Stand!**



Certified Education Technology Leader (CETL)™



Based on the Framework

The CETL Program Created by CTO's

Item writing panel assembled to work with certification exam experts

- *Framework* updated
- Beta tested

Program governed by Certification Governance Committee (CGC)

- Combined total of more than 160 years of ed technology experience
- Decide all policies and procedures

Exam Structure

Two-Part Exam

PART ONE

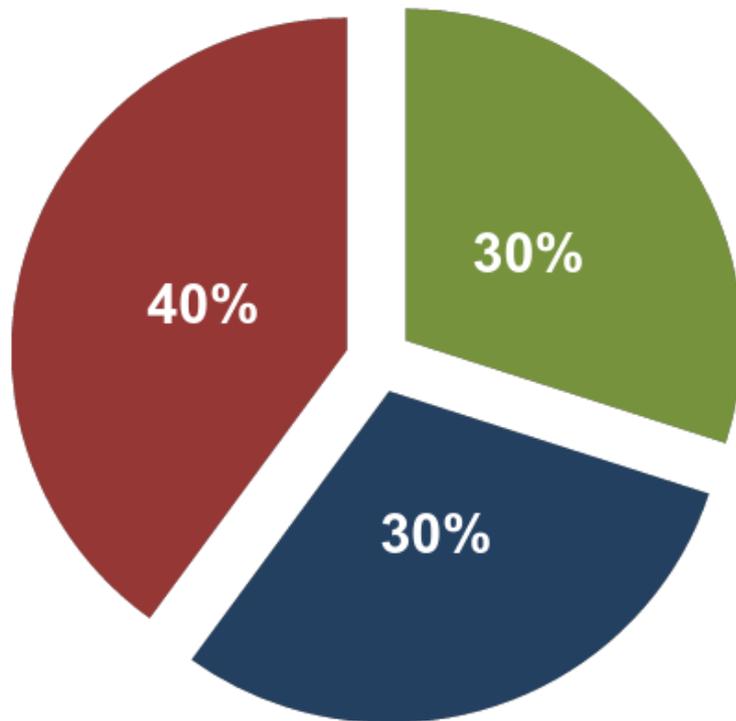
Multiple Choice – scored on site

PART TWO

Essay – scored by practicing CTOs

- Internet-Based Testing (IBT)
- Must pass both to earn CETL designation

Exam Content



- Leadership & Vision – 40%
- Understanding the Educational Environment – 30%
- Managing Technology & Support Resources – 30%

Resources:

- [Administrators Guide](#)
- [Self Assessment](#)
- [Online Study Course](#)
- [Other Resources](#)



Taking the Exam



Eligibility Requirements

- Bachelor's degree
- Four years of ed technology experience (demonstrable experience in the three primary skill areas)
- Sign Code of Conduct and Terms of Confidentiality

How to Apply

www.cosn.org/certification

Qualified Applicant

- Create profile in CoSN Certification database
- Fill out and submit online exam application with payment

CoSN Certification Program

- Application reviewed
- Authorization to Test (ATT) letter sent to confirmed applicants

Preparing for the Exam

- Take the **self-assessment**
- Take the practice exam
- Visit CoSN's Knowledge Center
- Form a study group
- Identify a mentor



*Become a Highly Capable School
System Technology Leader*

CoSN's Online Collaborative Learning
Site for CETL preparation

CETL Certification



Those who pass the test

- **Certified Education Technology Leader (CETL)tm**
- CETL after their names
- Listed in online CETL directory
- LinkedIn CETL Community
- Recertify every three years to remain certified
- Notification letter to superintendent or supervisor

Recertification Requirements

60 hours of continuing education hours every three years

- Continuing Education
- E-Learning/Online Courses
- Industry-Related Certification
- Teaching/Instruction
- Professional Membership
- Published Works
- Volunteer/Leadership Work

Retake the Exam

Hiring CETLs Will:

- Help districts hire or promote only the most **skilled** and **knowledgeable** education technology leaders
- Help districts **match the skills** of your technology team to the job requirements
- Demonstrate to district stakeholders the **commitment to the highest standards**
- Show employees in the district commitment to **professional growth**

Find Out More:

www.CoSN.org/Certification

www.texas12ctocouncil.org



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