

## CETL Part I Exam Detailed Content Outline

**Total Test Questions = 100 scored + 15 pre-test questions (unscored)**

*Effective April 2012*

### I. Leadership and Vision

#### A - Leadership & Vision (15%)

CETL certificants should be able to: 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 can help meet district goals.

#### Related Knowledge

- Strategic planning techniques to create a vision for how technology will support a district's strategic and operational goals
- Ensuring focus on shared goals and sense of a common mission
- Systemic planning skills and use of decision-making rules for priority setting
- Organizational structure (formal and informal), history, and profile of all stakeholders
- Processes (methods) that recognize individual stakeholder contributions
- Definition of roles, responsibilities, and expectations for advisory committees necessary for effective use of technology to support district goals
- Effective collaboration and interpersonal communication skills, e.g., listening, asking questions to solicit best ideas, relationship-building, consensus-building, communicating the need for change, using effective power-sharing techniques, camaraderie to ensure success
- Personal communication skills, e.g., marketing collateral (print and online), public speaking, storytelling
- Organizational and time-management skills
- Constructive conflict management
- Current technologies
- Scope and value of emerging and promising technologies
- Technologies that can positively impact teaching and learning in the interdependent environment of assessment, curriculum, and instruction
- Role of technology to enhance efficiency and effectiveness of current practices and related cost-reduction opportunities
- Forecasting return on investment and benchmark measurements for key innovations
- Ensuring effective, challenging, and engaging learning for all students
- Sources and nature of educational content and processes
- Assessment best practices, e.g., how to assess key instructional activities, learning diagnostics, assessment of and accommodations for learning styles, educational terminology
- Cultural context of change; management and facilitation of the change process
- Role of professional development in the change process
- Building support for change through a variety of mechanisms, e.g., learning by example and personal and mass communication
- Use of data to help people draw conclusions

## B – Strategic Planning (15%)

CETL Certificants should be able to: 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.

### Related Knowledge

- Strategic planning best practices and identification of system leaders
- Technology frameworks and alignment of technology and resources (people, capital, expenses) to strategic goals
- Alignment of performance evaluations to strategic goals
- Conducting a needs assessment
- Budget development (chart of accounts)
- Funding sources (federal, state, local, and public/private grants), donations
- Use of financial information, financial and non-financial metrics
- Alignment and communication of research to support VOI best practices
- Modeling implementation of industry best practice methodologies, tools, and programs (TCO, ITIL, SDLC, Baldrige, etc.) to support strategic goals
- Project management skills and prioritization of concepts to implementation, including determining relative priorities of competing demands
- Identification of all district systems and their departments, e.g., instruction, assessment, finance, facilities, transportation, security, food service
- Integration of and relationships among various departments
- Methods of finding evidence and examples of successful technology-based solutions for each district system and department
- Measurements for how technology supports each system or department
- Communicating results of evidence and examples of successful solutions found for each district system and department, e.g., case study
- Development of a technology and systems security plan
- Periodic and ongoing backup and recovery tests
- Establishment of redundancy systems to support business and instructional initiatives, assessment of risk, and potential impact
- Use of metrics and data on goals, strategies, and budget to support technology plan
- Communicating meaningful reports to stakeholders on technology plan
- Disaster recovery/business continuing planning best practices, examples of successes and failures, and a phased-in plan to include multiple solutions
- Involving stakeholders in disaster recovery/business continuity planning—in defining and refining the plan and in drills
- Conveying complex technology concepts in familiar terms to non-technology staff, including translating data and statistics into easily understood graphical representations of goals and objectives
- Engineering solutions based on goals and objectives
- Developing solutions for creating a process of continuous improvement

## C – Ethics and Policies (10%)

CETL Certificants should be able to: 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.

### Related Knowledge

- Collaboration with all impacted departments to ensure adherence to state and federal laws
- Process for demonstrating and monitoring personal and system compliance
- Policies and procedures at all levels, e.g., district, federal, e-Rate
- Maintenance of records indicating personal and system compliance
- Examples of best practices of appropriate ethical and professional behavior for technology use
- Resources for maintaining current information about laws and legal issues and how district departments, policies, and practices are impacted
- Communication via multiple methods and current information about laws and legal issues
- Cyber security and physical security, potential vulnerabilities, and related issues for both students and staff
- Best preventive practices and policies to impact vulnerabilities
- Alignment of technology planning and implementation to goals for environmental protection, energy-saving practices, and appropriate equipment disposal
- Communicating and collaborating with others in the policy development process
- Definition of a high-performing learning environment
- Ensuring policies and the policy development process to support a high-performing learning environment
- Definition of equitable access
- Structuring technology expenditure formulas to accommodate equity
- Identification of stakeholders in the equitable process, as determined by district practice and/or policies
- Assessment of needs of diverse students and staff, e.g., Universal Design for Learning (UDL) information, IDEA, ESL, special needs

## II. Understanding the Educational Environment

### A – Instructional Focus and Professional Development (12%)

CETL Certificants should be able to: 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.

#### Related Knowledge

- Conducting a needs assessment to ensure purposeful professional development, including collaboration and communication with instructional leaders and assessment of staff proficiency
- Resources (funding, technologies, and policies) needed for purposeful professional development
- Communicating with stakeholders and gathering feedback regarding professional development
- Research, collaboration with the field, and collaboration with district instructional leadership to identify and promote technologies that support educational best practices
- Alignment of technology resources to support best practices
- Alignment of technology and curriculum standards
- Alignment of job roles to available and/or needed technology resources to empower staff to successfully meet ongoing job demands
- Communication and promotion of student proficiency in 21st century skills
- Examples of standards for innovative teaching and learning that develop student proficiency in 21st century skills
- Collaboration with local education institutions to establish professional development programs of interest to teachers
- Serving in advisory capacity to develop skills for new teachers
- Organizations responsible for developing and modifying state and national standards, benchmarks, and frameworks for technology literacy
- Collaboration with staff to share updates regarding standards
- Conducting professional development targeting standards
- Diverse needs of students and other stakeholders
- Identification of technology resources to address diverse needs of students
- Providing or facilitating professional development opportunities to address diverse needs of students and other stakeholders
- Examples of effective uses of technology to maximize learning for diverse students

### B – Team Building and Staffing (9%)

CETL Certificants should be able to: 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.

#### Related Knowledge

- District organization and related roles and responsibilities
- Purpose of a cross-functional team and determining when it is necessary for appropriate aspects of the district technology plan
- Creating cross functional teams, including who to pull together and when, and protocols for creating the team
- Resources (knowledge, funding, time, tools) to deliver on team's purpose
- Leadership skills to manage diverse teams, ensuring distributed leadership
- Defining and setting clear purpose, objectives, and expectations of any team
- Establishing agendas, targets, and measures
- Planning and coordinating meetings, including meeting and communication protocols, and providing post-meeting follow-up that includes everyone
- Team communication standards (who, what, when, where, how)
- Delegating responsibilities
- Ensuring everyone is clear on team expectations and individual roles
- Gathering feedback and monitoring process, progress, and results of team activities; facilitating when and how a team comes to consensus
- Ensuring proper follow-through on team commitments
- Decision-making tools to support effective teamwork, e.g., identifying who needs to be involved; establishing/monitoring timelines; determining how to meet milestones; using scorecards, dashboards, progress summary
- Framework for decision making that includes current and desired district, state, and other assessment information
- Engaging team members and ensuring everyone has opportunity for input
- Team building based on team needs and not the job
- Separating fact from opinion, reconciling mixed messages, limiting positional power, and dealing with personalities and professional interactions
- Effective screening and interviewing processes, including quantitative and qualitative data for making decisions, and validation of information sources
- Representative and clear job descriptions
- Ongoing feedback to individuals and teams on strengths and required growth, using quantitative and qualitative data, and establishing benchmarks
- Analysis of team structure and organization chart relative to supporting strategic plan, with clear team function and responsibilities
- Accurate, published organization chart, involving board/cabinet as needed
- Strategic plan for staffing requirements, aligning staffing resources to needs
- Staff skills development, including empowering others to leadership roles
- Using data to deploy or reassign staff to best meet strategic plan goals, working with HR and the budget process as necessary

## C – Stakeholder Focus (9%)

CETL Certificants should be able to : 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.

### Related Knowledge

- Identification of all stakeholder groups needed for buy-in of vision of technology program
- Collaboration with stakeholders to create a vision for how technology will support district goals
- Soliciting input and/or feedback from stakeholders for vision for technology
- Focus groups for representative stakeholders
- Concepts for survey development
- Anticipation and clarification of stakeholder group technology needs and/or interests
- Communication models for listening to stakeholder input and feedback
- Interpersonal communication skills to collaborate with stakeholders on vision for how technology will support district's strategic goals
- Human metrics and methods of implementing successful human interactions
- Definition of "knowledge worker"
- Addressing and responding to stakeholder and all knowledge worker input, feedback, issues (positive or negative), and concerns
- Synthesizing and aligning stakeholder needs and/or concerns
- Alignment of district goals with stakeholder goals
- Ensuring stakeholders know district vision and strategic goals
- Electronic collaboration tools that assist in stakeholder involvement
- Partnerships that can yield funding via grants or charitable contributions
- Identifying appropriate technology options to support volunteer and/or alternative efforts to improve education
- Models for identifying opportunities and their requirements for supplementing district resources
- Using emerging technologies, e.g., Twitter, Facebook, messaging systems, to effectively communicate with stakeholders
- Responding to stakeholder preferred method(s) of communication

### III. Managing Technology and Support Resources (30%)

#### A – Information Technology Management (9%)

CETL Certificants should be able to: Direct, coordinate, and ensure implementation of all tasks related to technical, infrastructure, standards, and integration of technology into every facet of district operations.

#### Related Knowledge

- System design
- Standards concepts, e.g., networking standards and interoperability
- Available resources, e.g., funding and people, for planning all tasks related to technical systems, network infrastructure, and technology device management
- Rationale for technology choices
- Needs assessment of training, readiness, and concept of scalability
- Techniques for overseeing implementation of technical systems, network infrastructure, and technology device management
- Alignment of roles and responsibilities to tasks, and project management techniques
- Assessing impact of choices made, e.g., for outsourced options
- Staying abreast of emerging technology trends
- Evaluation of TCO and ROI
- Conducting pilot projects, e.g., to meet goals, support education, with comparison of plans to actual outcomes
- Development of evaluation instruments
- Stakeholder communication regarding evaluation results
- Application of evaluation results and making appropriate changes
- Meaning of “integration of technology into every facet of operations” in the education environment
- Systems to support specific types of operations, e.g., purchasing systems for food services
- Impact of filtering on operations
- Developing, collecting, interpreting, and reporting metrics for all aspects of IT system, e.g., utilization, uptime statistics, equity (number of devices, etc.), ratio of technicians to students or devices, mean-time-to-repair, who users are, how students and staff are using the system, staff efficiency
- How stakeholders make use of metrics
- Contrast between disaster recovery and business continuity
- Identification of “mission critical” resources
- Identification of levels of risk
- Development of disaster recovery plans built on best practices
- Development of business continuity plans built on best practices
- Managing stakeholder expectations for disaster recovery and business continuity

## B – Communication Systems Management (7%)

CETL Certificants should be able to: 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 enhance effective communication with key stakeholders.

### Related Knowledge

- Communication systems currently installed and in use, their interoperability with one another, and the scalability of each
- Identification of which stakeholders are accessing which systems and how
- Emerging access options, devices, and communication tools and the potential use of each in the education environment
- Collaboration with stakeholders in the field about what is effective and maintaining collaboration and connections
- Building relationships and communicating with experts for recommendations and information on standards, interoperability, and other districts' successful use of communication systems
- Gathering and responding to feedback from stakeholders on communication systems issues and needs
- Organizational policies, e.g., acceptable use policy for students and employees; student information; copyrights; ethical use of district resources and internet necessary to keep district, school, and teacher websites and other communication tools updated, compliant, and operational
- Collaboration with experts and stakeholders to establish standard framework for content and security to keep district, school, and teacher websites and other communication tools updated, compliant, and operational
- Organizations responsible for sharing information on emerging technologies that enhance communications
- Identifying internal support capabilities and available resources
- Research on support options, including uptime requirements and the relationship to support
- Compliance requirements, e.g., archiving, use and abuse, security, records retention

## C – Business Management (7%)

CETL Certificants should be able to : Manage the budget and serve 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.

### Related Knowledge

- Funding sources available to meet district and programmatic goals - grants, federal funds, state funds, matching funds, others
- Differences between recurring resources and one-time funding
- Differences between capital and operational expenses and funding
- Differences between leasing and purchasing and/or multi-year purchasing
- Differences between fixed and variable expenses
- Differences between unit costs and extended costs
- Differences between budgeted costs and actual costs
- Differences between TCO and VOI (soft and hard benefits) and tradeoffs
- Differences between line item budgeting and categorical budgeting
- Federal guidelines, e.g., Title I and e-Rate certifications and guidelines
- Salary administration
- Budget cycle and fiscal year
- Bid and RFP processes and preparation
- Bulk purchasing, warehousing, just-in-time purchasing, volume purchasing
- Aligning purchasing to strategic goals and needs
- Laws and monetary limits
- Quotes, contracts, and contract negotiations, including rules for negotiation
- Impact of inventory and insurance practices on purchasing decisions
- Asset management life cycle
- Financial reporting and forecasting
- Budget rollover or carryover
- Role of governing bodies in (re)appropriation of funds
- District and state policies and guidelines, e.g., monetary limits, lunch and other benefits, legal requirements, purchasing guidelines relevant to negotiating with and managing vendors and business partners
- Discounts
- Ethical purchasing
- Creating task forces to bring in business partners
- Collaborating with business partners and maintaining appropriate contacts with vendors
- Donations and in-kind contributions
- Vendor performance management, process for a non-performing vendor, and milestones for contract payments based on implementation
- Analyzing the scope of necessary professional development for staff using technologies, budgeting and implementing it, including analysis of in-house services against contracted services

## D – Data Management (7%)

CETL Certificants should be able to: 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.

### Related Knowledge

- Basic understanding of database structures and concepts for gathering, warehousing, mining, integrating, and reporting data in meaningful ways
- Systems and tools for gathering, warehousing, mining, integrating, and reporting data in meaningful ways
- Effects of invalid data
- Authorization and security standards
- Data streams and systems
- Platforms and interoperability
- Data frameworks and multi-dimensional cubes
- Assessing scalability
- Evaluating and managing user needs
- Requirements gathering
- Data migrations
- Data loss management
- Monitoring health of data systems through reporting
- Differences between web-based computing and cloud computing
- Differences between hosted and self-hosting
- Availability of on-demand data for decision making to support all stakeholders
- Conducting a stakeholder needs assessment and/or gap analysis for decision making
- Automation of data capture
- Ensuring access to the right data for the right people
- Definition, description, and differentiation between SIF and SCORM and other industry standards
- Alignment of input to output necessary for responding to information reporting requirements related to government mandates
- Collection of data to produce necessary reports
- Data validation processes
- Identification of end-user data needs

## CETL Part II Exam Content Outline

Part II of the CETL exam consists of four (4) essay questions, all of which must be answered and are scored, which encompass a variety of skills necessary for an education technology leaders, such as planning, communication, presentation, facilitating and negotiating.