ADAMS COUNTY SCHOOL DISTRICT 50’S EDUCATIONAL TECHNOLOGY INFORMATION LITERACY PLAN

April 30, 2012 – April 29, 2015
INTRODUCTION

DISTRICT INFORMATION

District Name: Adams County School District 50
District Number: 0070
County Name: Adams
Superintendent: Dr. Pamela Swanson
Mailing Address: 6933 Raleigh Street
Westminster, CO 80030

CONTACT INFORMATION

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DEMOGRAPHICS

Average Enrollment: 10,124
Number of Certified Staff: 589
Percent Free/Reduced Lunch: 81%
Percent Minority: 81%
Number of School Sites: 19

TECH PLAN DURATION

Start Date: April 30, 2012
End Date: April 29, 2015

TECH COMMITTEE

Anthony Mathews, Principal Flynn Elementary; Jenny Sullivan, Teacher Flynn Elementary; Sara Gould, Principal Hodgkins Elementary; Shannon Willy, Principal Mesa Elementary; Glenn Moore, Teacher Skyline Vista Elementary; Lori Rinkoff, Teacher Mesa Elementary; Kevin Byers, Project Manager Learning Services; Denise Edlowitz, Teacher Librarian Scott Carpenter Middle School; Leann Cobry, Teacher Westminster High School; Stephanie Gronholz, Teacher Westminster High School; Brady Mills, Director of Technology Services; Jeni Gotto, Director of Assessment and Instructional Technology; Linda Kister, Director of Learning Services; Art Drotar, Director of Learning Services; Dr. Oliver Grenham, Chief Education Office
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A. Needs Assessment

The needs assessment is a three part story for Adams County School District 50. First, it’s important to acknowledge and describe the larger context for the reinvention of the organization and the capacity for change. Secondly, the results of staff surveys and student assessment will serve as the primary instrument to guide the development of goals, objectives and strategies in addition to the anecdotal information that was collected during the course of the school year. Finally, it is important to understand the technology environment that currently exists in Adams 50, as we continue to set goals and increase the use of instructional technology in our classrooms and libraries.

Need for District reinvention and capacity for change

Adams County School District 50 is a 17 square mile “landlocked” school district located in the north central section of the Denver metropolitan area. Once considered a typical suburban school district, economic and demographic shifts within the larger metropolitan region have changed the face of the District within a relatively short period of time to resemble that of an archetypal urban district: low-income, majority minority enrollment, aging facilities, high mobility, and poor student achievement. With these changes have come new challenges that the traditional educational system as designed is ill-prepared to handle. While providing schooling for all, the District is only providing learning for some. The District’s goal must be to ensure proficiency for all.

In December 2006 school year, Adams County School District 50 participated in a Comprehensive Appraisal for District Improvement (CADI) review with an independent team of educators who provided a report of findings and recommendations for improvement. The major recommendation proposed in the report was that the District needed to create a seamless alignment in the delivery of curriculum, assessment and instruction among all school levels for all content areas.

Upon receiving the CADI audit findings in February 2007, a number of staff and community representatives participated in a collaborative process to examine the report in detail and identify priority goals and practices to improve student achievement. At the conclusion of this process, a sense of urgency had been established regarding the low academic performance of the District as measured by CSAP, ACT, AYP and graduation rates. At the conclusion of the 2006-07 school year, the District was placed on “Academic Watch” by the Colorado Department of Education.

In April 2010, Adams County School District 50 participated in a Comprehensive Appraisal for District Improvement (CADI) Revisit in follow up to the original CADI review conducted in December 2006. Subsequently, the district has entered into a Targeted District Improvement Partnership (TDIP) with the Colorado Department of Education which provided grant funds to conduct this revisit process as well as to assist district improvement efforts with additional resources and technical support. The intent of the CADI Revisit was to assess the processes and practices currently being implemented throughout the district and to provide recommendations to improve the current level academic achievement and close existing achievement gaps.

On May 24, 2010, the District received the findings and recommendations of the Comprehensive Appraisal for District Improvement Revisit Audit Report, which were shared
and debriefed in public with a broad representation of staff that included teachers, instructional coaches, Westminster Education Association leaders, principals and district leaders. At the conclusion of this meeting, it was determined that another date would need to be scheduled to conduct a Root Cause Analysis in conjunction with personnel from the Colorado Department of Education to determine and verify why district achievement was persistently low.

On June 16, the “Root Cause Analysis” was conducted in a full-day event led by personnel from the Colorado Department of Education. Again, teachers, instructional coaches, Westminster Education Association leaders, principals and district leaders were invited to participate. Upon reviewing the district’s student achievement data and the findings and recommendations from the CADI Revisit Report, the meeting’s participants identified and prioritized district needs and selected four they believed can yield the most improvement to student achievement. Those priority needs were:

1. Monitor existing (and, if needed, develop) research-based instructional models with clearly defined expectations, focused coaching and systematic monitoring of progress toward effective instruction for every learner;
2. Provide on-going professional development to enable teachers to move beyond management to being able to use student data in order to guide direct instruction and differentiate small group work;
3. Develop a comprehensive, ongoing professional development plan for building administrators and for teachers that focuses on effective instructional strategies in math and literacy content. Build leadership capacity to effectively monitor and guide the improvement of instructional expertise in the building; and
4. Provide leadership training to develop capacity for facilitating collaborative groups to dialogue, apply and evaluate effective instructional strategies as part of a purposeful learning community.

These systemic priority needs were further refined during the “Root Cause Analysis” meeting and during subsequent conversations with the Colorado Department of Education into four major improvement strategies which are as follows:

1. Develop, implement and monitor progress of a proven effective instructional model in a Standards-based System;
2. Develop and implement monitoring structures with clearly defined expectations, exemplars of proficiency, and measures to determine progress and/or impact;
3. Develop a plan for leadership development for the Board of Education and Principals; and
4. Implement and refinement of an authentic Learner-Centered, Competency Based System.

The Competency Based model includes four major components:

- Leadership addresses moral purpose, relationships, vision, being change adept, with a focus on results;
- Shared Vision provides systems for input and communication, strategic planning, and performance;
- Competency Based Design includes well-defined standards, aligned assessments, an instructional model that is student-focused, and systems for reporting/recording student learning based on standards; and
Continuous Improvement Cycle is systemic and systematic, has explicitly defined evaluation criteria, embeds progress-monitoring cycles, and celebrates improved results.

Implementation of each component of the model is described in the District Self-Assessment Tool (DSAT) continuum that allows a district or school to assess the degree to which individual components have been implemented according to a scale: that runs from awareness, to understanding, 1st implementation, routine use, refinement and replication. From this self-assessment the district and schools are able to identify other 21st century skills in addition to the acquisition of technology use. The model implicitly calls for the integration of technology as an instructional focus as well as a management system. Technology plays a major role in this effort. Accountability of both the schools and students is recorded and reported digitally. Access to all learning targets, performance tasks, and capacity matrices is available on an electronic platform (i.e. Adams 50 Wiki). In addition, parents have online access to monitor student progress (i.e. E-ducate®).

Teacher and Student Needs
Looking at the current results from the Colorado TELL Survey and the 8th grade Technology Literacy assessment and past staff surveys, the District is able to identify and prioritize needs.

According to the TELL survey results (see fig.1), 92 percent of the teachers in the district reported they have adequate access to communication technology, including phones, faxes, and email. In stark contrast to this reported access to communication technology, a much smaller percentage of teachers reported having sufficient access to instructional technology and the training and support they need to fully utilize instructional technology. Only 45 percent of teachers reported having sufficient access to computers, printers, software, and internet access that they can use for instructional purposes, while 37 percent reported having sufficient training and support to effectively use these technologies in their instruction.

Figure 1. Percentage of Adequate Access to Technology
Historically, teachers in District have reported and been observed using technology in fairly traditional ways. Outside of technology courses, research continues to be the primary use of technology across the district. (see fig.2)

**Figure 2. Classroom Use of Technology**

![Classroom Use of Technology](chart1)

In line with the use of technology to perform and report out on research, search engines and office applications are often the most used computer programs across the District. (see fig.3)

**Figure 3. Teacher Professional Technology Use**

![Teacher Professional Technology Use](chart2)

Adams 50 uses the Middle Level Technology Assessment developed by Learning.com to help determine the proficiency levels of our students. Last year, 43 percent of our eighth grade
students were determined to be proficient. When given the same assessment this year, it appears that our students are improving, with 56% of eighth graders reported as proficient. While this demonstrates solid growth, the District is hoping to see this growth continues from year to year. The concepts that are addressed in this assessment include systems and functions, social and ethical topics, word processing, spreadsheets, multimedia and presentations, telecommunications and Internet, and databases. All of these concepts are covered by our Learning Targets and Measurement Topics.

In the summer of 2011, researchers at EffectiveSC, a Denver based non-profit organization that is working to use technology to help enable personal and adaptive learning both in and out of classrooms, interviewed teachers. Teachers were asked about their use of technology in their jobs. Overwhelmingly, teachers expressed a frustration with disparate computer systems and with computer systems that are not designed to be user friendly. The results from this research are driving current work in the District to integrate computer systems and to improve software workflows through Application Programming Interface (API) development.

**Telecommunications Capacity and Services**

The District maintains a one-Gigabit Fiber Wide Area Network (WAN) supported by modern networking protocols and using Cisco networking gear. The new Fiber WAN was fully functional as of December 2009. A hybrid ring topology was designed and implemented. One high school and one middle school are interconnected core sites. Each of the core sites have five to eight spokes (edge sites) connected to them. Layer-three protocol switches are maintained at each core site.

The District’s network components are consistent with a single vendor (Cisco) and platform. All core and edge site routing equipment is maintained with annual support/maintenance agreements with the vendor. Spare equipment is available and installed when a site switch experiences a failure so that minimal down time is experienced.

Each edge site was upgraded to include a new Cisco switch with the ability to receive the Fiber connection. Before the Fiber WAN, the T-1 based connections were regularly reaching full utilization capacity at most sites, this resulted in WAN traffic bottlenecks. With the new Fiber, network traffic utilization is reaching approximately 10% of capacity. There are no more bottlenecks and there is significant room for growth for voice, video, and data. See the basic network diagram below. The Fiber WAN is funded through E-Rate and District general fund monies. The District is currently in year-three of a fifteen-year contract with Unite Private Networks to maintain the WAN. Therefore, this WAN with its current capacity of 1-Gigabit to all buildings will be in place through and past the 2015 school year. (See fig. 4)
Figure 4. Simple WAN Diagram

To keep pace with the growing need to support access for instruction, library services, assistive technologies, and data and assessment; the District will continue to maintain a single Network Operating System (NOS), which is Microsoft Windows. The NOS, as well as the servers that support it will continue to be maintained with all necessary service packs and security updates on a regular basis. All server hardware is standardized on HP equipment. An HP Virtual Machine Chassis environment is maintained for most mission critical software applications and includes ‘failover’ support. On an annual basis, a portion of the budget is dedicated to regular upgrade and replacement of servers, switches and purchasing of switches for additional network connections. This contributes to consistent and uninterrupted network services including e-mail, network authentication, print services, data storage services, security, access to curriculum applications, access to the student system and assessment systems, Internet access, and other functions.

With the Fiber WAN in place, the District has excellent internal traffic capacity (One-Gigabit) between all sites for voice, data, and video.

The District completed the migration to VoIP (IP Telephony) technology in 2010. This has resulted in a collapsed voice and data network providing more robust teacher-student-parent communication.
Equipment Access for Curriculum Support, Assistive Technologies, Data and Assessment, and Library Services

Each school building has a modern Local Area Network (LAN) for support of all technology provisions within the building. All District LANs are based on consistent network switches in a switched 100 Megabit environment with Gigabit connections between distribution closets. All classrooms have network connectivity supporting one or more computers. All schools have either a computer lab and/or a library computer lab. All student and faculty computers are connected to the LAN which is part of the WAN. All computer desktops and laptops have access to full network services including Internet.

The District computer workstation/desktop environment is consistent and standardized. A single hardware vendor and a single Operating System (OS) platform are implemented. This allows for better computer performance and allows for greater Return on Investment (ROI). In the past three to four years, the District has included Apple computers, iPads and iPods. All desktop computers are networked and provide access to approved networked software applications. All desktop computers are purchased with a full 3-year warranty. These advantages contribute to better computer performance, ability to support modern curriculum software applications, smaller spare part inventories, quicker resolution to helpdesk tickets, etc. The minimum CPU speed for computer desktops is 4.4Gigahertz. The minimum amount of RAM in a small percentage of workstations is 1 Gigabyte and machines are replaced with desktop, which have 4 Gigabytes of RAM.

The District will continue to maintain the highest possible level of desktop computers through its annual computer replacement. Nearly 33% of all computer desktops were upgraded/replaced through the annual replacement cycle in 2011-2012. A similar replacement cycle is scheduled for the next three fiscal-year cycles. There are a total of 3,300 computer desktops and laptops along with 1,500 iPads and iPods on the District Network.

In the past two years, the District has placed into classrooms over 260 document camera and projectors sets, 88 iPads, 560 iPods, and 100 sets of hardware that is used for creating instructional videos. These are in addition to similar hardware that has been purchased at individual building levels.

The student and teacher data storage is maintained on several centralized Network Access Storage (NAS) and Storage Area Network (SAN) devices. These storage solutions provide high capacity and high-speed data access.

Annual Server upgrades will continue through the capital reserve budget process. Approximately 10% of all central servers are upgraded/replaced. With the Fiber WAN in place, the District has fully migrated to a central user-data-storage environment. This has reduced costs for remote server hardware/software maintenance and has increased performance and reliability. This migration was completed in the 2009-2010 school year.

The District’s CenturyLink Metropolitan Optical Ethernet LAN connection will be expanded from 70 Megabits to 300 Megabits in the summer of 2012. This link will support 300 Megabits of dedicated Internet bandwidth.

Various instructional streaming services are supported and are available to all schools. The District makes use of a student information management system that is based on modern database technology and is Web accessed. This centralized-real-time database allows for accurate reporting and better interface solutions with assessment and achievement systems.

The library catalog software application has been upgraded in the 2011-2012 school year and has improved student access to library supplies and textbooks.
Network and Data Security

The District maintains a single Active Directory forests with two domains. This provides the ability to isolate faculty data from student access. There is a 1-way trust so that the student domain trusts faculty accounts to allow teacher access to student H: drive data, but no access from the student domain to faculty resources. If a student manages to elevate their account to a Domain Administrator, they still have no access to the faculty data, including H: drive, Email, Infinite Campus access.

The District has implemented a wireless network using 802.1X in all buildings to prevent unauthorized use. All district machines are issued a certificate through an internal PKI, and only district machines with a certificate are allowed access to the wireless network. This helps prevent a home machine without anti-virus software from attacking and infecting the network.

The District has implemented an “A50Open” wireless in all buildings that allows faculty and students to bring their personal machines and access a subset of the district resources. This allows access to the Internet and systems that we expose to the Internet though our firewall, such as Outlook Web Access. We will be increasing and adding additional wireless access points throughout the District to help support the A50Open access.

All websites and services that are open to the Internet that allow access with a District account are secured with a SSL Certificate purchased from Thawte. Access to these services through the guest wireless access is also encrypted with the same certificate. We currently upload data to outside vendors that require us to send faculty and student demographic data. Any transfers of data to a system outside of the District network use a secure FTP protocol (FTP over TLS/SSL). The District maintains a Windows Service Update Server to approve and push Windows updates to all district PC computers on the network. This provides the ability to enforce updates and ensure that any security patches that are needed are appropriately applied. With the consolidation of data files and network resources to central Network Attached Storage, the District will be able to isolate subnets from each other creating a barrier to help restrict any inappropriate access between sites. This will also prevent a virus on a workstation at one site having direct access to other sites. The District uses redundant Cisco Adaptive Security Appliance firewalls along with a DeepNines Web filter. Nearly all TCP / UDP ports are blocked other than those needed for instruction. By blocking access to non-standard ports, we reduce the ability for students to bypass filters and access inappropriate material and services.

In 2009, the District replaced our acceptable web usage filter with a DeepNines product that is more “school-oriented” that previously used products. This product allows us to filter content based on Active Directory user groups so that certain faculty such as a Resource Officer can have access to sites that students normally do not have access to. We will also be able to open up web sites to the appropriate students during windows of time when needed. We will also able to restrict bandwidth for certain sites and categories that need to be open but cause an impact on the network bandwidth.

Level of Technology Staff Support

The infrastructure / services above require adequate technology staff support. One technology director is required. A minimum of one systems support specialists and two systems administrators are required. A full software application support department is required to maintain a student information management system along with associated system interfaces and secondary student databases/applications; one data base administrator, one software engineer, and one software helpdesk technician/trainer. For network support; one network administrator is required. A full helpdesk department is needed to track and resolve all trouble tickets. The helpdesk support requires one manager, and a minimum of two field desktop
technicians. The helpdesk support contract in place with the District’s helpdesk managed service provider maintains a minimum of trained helpdesk call center technicians. The helpdesk contract also provides helpdesk software tracking and reporting. All these staff levels intend to be maintained through the 2015 school year.

A well-trained helpdesk staff supports the District. The remote helpdesk staff, remote control software, and a standardized-equipment-enterprise allows for approximately 75% of all Helpdesk tickets to be resolved without a technician onsite. This Helpdesk support translates into a network and educational software tools that perform at high levels.

Internet Capacity

The District currently maintains a 70 Megabit Qwest/CenturyLink Metropolitan Optical Ethernet (MOE) link, which connects the District’s central-core network location the Internet service provider. The Metropolitan Optical Ethernet link will be increased to 300 Megabit in the 2012-2013 school year along with the corresponding increase of 300 Megabits of Internet bandwidth provided by Mammoth Networks and ADVODA communications. The increase will be needed to meet the growing needs of the District.

The District will also be implementing a cloud base computing system. This will enable staff and students access to applications and data from anywhere. We will be continuing to expand the District’s BYOD (bring your own device) capacity to support learning.

B. Goals

Vision

Information literacy and technology are inherent components of and for student achievement. “The current and future health of America’s 21st Century Economy depends directly on how broadly and deeply Americans reach a new level of literacy – 21st Century Literacy – that includes strong academic skills, thinking, reasoning, teamwork skills and proficiency in using technology.” (21st Century Workforce)

Adams County School District 50’s vision is to ...

- Ensure students’ skills and knowledge meet or exceed the requirements of a successful 21st Century citizen.
- Honor and embraces the diversity of its school community.
- Nurture the love of learning and inquiry within every District 50 student.
- Serve as a lighthouse district in the state of Colorado for students’ academic achievement and life-long success.

To meet this vision in today’s global culture, students and adults must function as effective users of tools, ideas and information. This requires a collegial partnership between classroom teachers, teacher librarians, technology instructors and administrators pursuing best practices in teaching and learning. It is imperative that educational technology and information literacy are integrated into all curriculums and not viewed as separate, but just part of the way a teacher teaches and a learner learns. A clear and seamless integration of educational technology and information literacy is necessary to help staff empower students. This also provides a focus on learning with information and technology rather than learning about information and
technology. Information literacy, as a model of learning based on real-world information resources, serves as basic survival skill for the Information Age. As determined by the current TELL survey results, all teachers and building leaders need training and support in tying information, resources and technology together to support student achievement. Our vision also includes promoting teachers’ use of data to facilitate information-based educational practices. As teachers and students work to develop higher level thinking skills and incorporate them into learning on a daily basis, collaboration and conferencing among adults and students will increase. Research notes that such skills are not just important for students when they are completing schoolwork, but are essential skills that can be transferred and used for all aspects of life: academic, professional and personal.

Goals:
District 50 has identified five main goals that will help ensure teachers and students have access to technology and data that will help improve instruction. We believe that focusing on these overarching goals will help meet the needs of our staff and students.

1. Continue to refine and expand the professional development model that certifies teachers and administrators skill and knowledge for integrating technology and information literacy into the instructional and learning processes of an authentic learner-centered, competency based system.
2. Support the use and teaching of technology Learning Targets in non-technology classes.
3. Continue to provide an adequate technology infrastructure.
4. Continually evaluate software for effectiveness and efficiency with regard to education technology and information literacy.
5. Provide professional development and community training regarding digital citizenship and cyber safety.

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<tr>
<th>Goals:</th>
<th>Objectives:</th>
<th>Strategy:</th>
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| Goal 1 | Train staff and administration | • Provide training on the philosophy and strategies of Blended Learning  
• Provide training at the New Teacher Institute (NTI)  
• Plan District in-services  
• Expand after school technology classes  
• Offer online professional development courses to staff  
• Offer custom professional development based on building or teacher requests  
• Increase utilization of library media specialists regarding information literacy |
| Goal 2 | Support the use and teaching of technology Learning Targets in non-technology courses | • Develop performance tasks that utilize technology and information literacy standards in other content areas |
| Goal 3 | Continue to enhance and maintain current network systems infrastructure as well as ensuring the availability of an adequate | • The Technology Department and Learning Services will work together to identify network, hardware, and software needs and solutions |
number of high quality computers and hardware.

- Continue the rollout of the Bring Your Own Device (BYOD) infrastructure and policies
- Develop policies and/or procedures for maintaining equipment purchased at the building level through grants

Goal 4
Acquire new programs to replace outdated software and develop new programming to meet our unique needs for implementing an authentic competency based system.

- Work with software vendors and programmers to streamline teacher workflows within software environments.
- Develop a user interface that integrates numerous computer systems into one portal.
- Identify vendors with research-based content to support the development of a virtual school.

Goal 5
Digital Citizenship and Cyber Safety

- Provide professional development and materials to lead teachers based on the curriculum developed by Common Sense Media.
- Provide parent training on online safety through the District and Building Accountability Advisory Committees based on the Common Sense Media resources.

District-Wide
Adams County school District 50 will use CDE’s endorsed definition where technology literacy is defined as the ability to responsibly use appropriate technology to communicate; solve problems; and access, manage, integrate, evaluate, design, and create information to improve learning in all subject areas and to acquire lifelong knowledge and skills in the 21st century. This definition aligns with the District’s reinvention of implementing an authentic learner-centered, competency based educational system. As of the 2011-12 school year, this competency based system is in place for all students except those who are in traditional 11th and 12th grades. By the 2013-14 school year, the entire student population will be educated in this Competency Based System.

To assure that all students are technologically literate by the time they complete middle school, as part of the implementation of our learner-centered competency based system, teams of teachers have created Learning Targets for each of ten content areas. The ten content areas include: Math, Literacy, Science, Social Studies, Technology, Visual Arts, Performing Arts, Physical Education, World Language, and Personal/Social skills.

For each content area up to fourteen specific performance levels have been created. When the competency based system is fully implemented, the District will not have traditional grade levels across the traditional pre K-12 system. Rather, “performance levels” for each content (subject) area represent expectations leading to graduation (see fig.5). Advanced knowledge and skills will be represented by performance levels beyond the performance level graduation requirements. All performance levels and Learning Targets from Pre-Kindergarten
“readiness” to level fourteen have been developed and reviewed by the Adams 50 staff. Additionally, WestEd, a research and development service agency audited the Learning Targets and gave recommendations as to the appropriateness of the rigor of the performance levels for postsecondary education and workplace readiness.

Figure 5. Competency-based Schematic Design

ADAMS 50 COMPETENCY BASED DESIGN

10 CONTENT (SUBJECT) AREAS

STRANDS & MEASUREMENT TOPICS
Example: Strands within Technology – Hardware, Software, Cyber ethics
Example of Measurement Topic within Software Strand: Multimedia Presentation

LEARNING TARGETS
Example of Multimedia Presentation Learning Target: Uses computer based audio and video playback software

PERFORMANCE LEVELS & ASSESSMENT

SCORING GUIDES / CAPACITY MATRIX
Score 3 defines mastery (proficiency) of the Learning Targets

ASSESSMENT
e.g., Placement and District Summative Assessments

RESOURCES
e.g., Materials, Technology, etc.

INSTRUCTION & INTERVENTIONS
e.g. Classroom Strategies

What students are required to know and be able to do is defined according the Learning Targets at each performance level. Measurement Topics are related essential learning elements that are organized into strands that are commonly taught in conjunction with each other to provide a guaranteed viable curriculum. They are the essential learnings that all students are expected to know, understand, and be able to do as measured by common defined scoring guides.

The technology Learning Targets and accompanying instructional resources were developed to allow deep study in technology courses while also encouraging technology integration and assessment in other content courses as well. These instructional resources are available for all teachers and students on the District Wiki. These resources include the most
recent research and resources regarding how to integrate computer technology into classroom practices. For example, ISTE’s Educational Technology Standards for Teachers, Students and Administrators, 21st Century Learning skills as defined by the Partnership for 21st Skills, as well as exemplary lessons.

Creating and sharing student capacity matrices, performance tasks, and scoring guides with all teachers and students via the District Wiki page helps ensure that students will be able to demonstrate proficiency on any technology Learning Targets in any classroom either at the elementary or secondary level. Secondary schools will continue to provide specialized technology and computer classes after students have demonstrated proficiency in the eight required performance levels.

Parents are able to access information from our district and school web pages. Currently, we are using School Wires to create and publish the district and school web pages. We use E-ducate® across the District to allow parents to access student progress in performance levels. E-ducate® is a web-based competency based education management suite that equips our school district with the right tools to tackle a wide variety of essential jobs in an authentic competency based setting. E-ducate® has multiple competency based grading tools, scheduling abilities, detailed reporting for individual students and groups, a Learning Target (standards) manager that allows for version updates, web-based assignment deployment tools, online content management of blogs, calendars, forums, surveys, announcements, links, assignments, assessments, and custom notices. All stakeholder audiences are apprised of student progress based on the Student Snap Shot report along with historical progress charts. Parents and students are trained on how to utilize E-ducate® so they can access it at any time to monitor learning progress.

Parents also have access to Infinite Campus, our traditional Student Information System, in order to access attendance data. The District is currently in the process of integrating this data directly into E-ducate to minimize the number of systems parents, students and teachers have to access in order to stay up to date on student progress.

The following tools, materials and strategies are in place in Adams County School District 50:

Curriculum
- Ebooks are available for checkout
- Literacy intervention – Read180, LANGUAGE!, Rosetta Stone
- Anywhere/anytime access to library databases
- Inter-library loan is an active, vital part of library media
- IXL Math
- NetTrekker
- Scantron Achievement Series for common assessment development
- Discovery Education
- Safari Montage
- Visual Thesaurus
- DIBELS/easyCBM online assessment tools
- Orchard online courses
- Star Suite online courses
Community
- Libraries are open before and after school for students and staff to use technology when it is not available at home.
- Adult education needs are constantly assessed and resources provided through our schools to build capacity in the adults so they may be a support system to our students.

Staff
- Off-site availability of all District databases and the web based software
- Support for teachers to integrate best instructional practices in math, literacy, science, social studies and technology
- Ongoing mentoring and imbedded support for teachers – E-ducate, Scantron, Infinite Campus
- In school staff development on systems, tools, programs and strategies
- After school professional development courses are offered
- A Learning Management System, Moodle, is available for teachers to use when implementing blended learning tools and strategies into their face-to-face classes.
- Staff are able to access the Internet from any devices that are brought into the district through our BYOD friendly wireless network.
- Google Apps for Education will be made available to all staff in the fall of 2012 through a District domain.

Libraries
- It is the goal of district secondary libraries to operate according to the Power Library model with a focus on collaboration with the teacher librarian, teacher and the building principal. A Power Library:
  1. Is an essential, integrated part of the school’s instruction and activities
  2. Integrates the Colorado Information Literacy Standards throughout the school’s curriculum
  3. Actively engages in collaborative teaching and planning processes
  4. Promotes, supports, and encourages reading, literacy, and learning in the school
  5. Integrates and utilizes technology to enhance teaching and learning.

Technology is utilized in school libraries to provide resources to students and staff with an automated circulation system. Libraries also provide work centers for online research utilizing subscribed reference databases. Beginning with secondary librarians, the District has provided training in the Big6 Skills model approach – to teach information literacy and technology skills as tools to solve any problem for any age. Some middle and high school teachers are piloting the use of this research model in their lessons. Other venues for integration in the District include, but are not limited to: development of performance assessments, Lexile use, Scantron Performance and Achievement Assessment Series’ eBooks, Video Streaming (Discovery Education or Safari Montage), and Novel Stars. The Strategic Plan outlines the need to improve academic achievement for all students, improve and enhance opportunities for ELL, SpED and gifted/talented students, increase parental involvement and use of cable programming.

Technology Services
- It is a primary goal of Technology Services in the hiring process to select individuals for
positions who have the necessary base skills and a very strong background of experience in the areas of support needed. After hiring, employee’s previous experience and the current skill sets are augmented with exposure to new tasks/assignments/projects along with additional training and education. As the District’s Curriculum department adds new educational software products or online assessment tools, the appropriate Technology Services support personnel are linked to the training in the new software or products along with the Curriculum department. Additionally, select Technology Support individuals annually attend training and user conferences for IC (Infinite Campus, the District’s Student Information System). This is for user support of the student system application or front-end system. Select software development and database administrator personnel annually receive database training to augment skills in support of the student information management system database platform and attend annual training and conferences related to Wide Area Network (WAN) infrastructure to ensure ongoing support of Cisco networking equipment and to maintain the greatest level of network availability time and access to District business applications and curriculum/assessment products. Other annual training and conferences are included in the Technology Services’ department goals so that solid awareness is maintained in critical industry trends and best practices.

Responsibility for maintaining and procuring technology rests with our Technology Services Department and is governed by Superintendent Policy GBEF: Computer Hardware and Software Use and Purchase. When a need is identified at any level within the District the policy procedures are followed. Technology Services also implements an annual computer replacement cycle which is funded through the general and capital reserve funds. On-going E-Rate funding coupled with general fund dollars are used for Telecom and the Western States Contracting Alliance state purchasing power agreement is leveraged for maximum benefit.

C. Professional Development Strategy

Each school currently has an E-ducate and Scantron facilitator. These individuals are responsible for implementing a “train-the-trainer” model of professional development in regards to the effective use of these technologies to assess and record student mastery of the District’s Learning Targets. Staff, both veteran and new, are updated at the beginning of the year on system changes through these site-based trainers. These facilitators are also available to the staff in their buildings for assistance and additional trainings as needed throughout the school year.

District instructional coaches, data facilitators and media center staff will continue to be trained on information literacy and technology standards and the integration into current District initiatives (e.g., Learning Targets, performance assessments, learning-teaching cycle, use of textbook resources at all levels, etc.).

Since Adams 50 served as the lead district for the Colorado Consortium for Data Driven Dialogue (C2D3) from 2003 – 2007, conversation around how to analyze and use data as part of the Data-Driven Dialogue has dramatically increased. Administrators, principals and staff meet monthly to look at student assessment data and make decisions regarding both classroom instruction and professional development. Training has been provided throughout the district on data analysis, with the use of a variety of protocols to structure the conversations. The district has adopted the Colorado Department of Educations Unified Improvement Plan. The content of the plans are constantly revised throughout the year as a result of the data-driven
dialogue process. Technology tools used for data driven discussions include, Scantron, ERO, DIBELS, and E-ducate. The district is implanting Tableau, a data visualization tool, in the fall of 2012 to allow staff to access a variety of data views on district and state assessments as well as demographic, attendance, and discipline data.

The District is currently examining the feasibility of bringing back PD360, a collection of online professional development videos focused on instructional strategies and common core content instruction. The hope is that these videos, integrated with our new Learning Management System, will be able to be a valuable professional development resource.

**District Leadership Expectations**

District expectations are that all certified personnel become proficient in information literacy and technology. Training around these standards occurs in the form of technology classes that are offered to all district personnel and through job-embedded training on district systems and programs. New teachers receive training on District systems through training at the beginning of the year and through job-embedded training at the building level. Assessment of the application of these standards for both teachers and administrators occurs within the Performance Evaluations for Licensed Teaching Personnel (Standard II-B “Knowledge/Use of Math, Literacy, and Technology”) and Administrative Personnel (Standard III-E “Technological Proficiencies”). Adams County School District 50 will continue to seek corporate partnerships and training opportunities that focus on the importance of leadership in implementing effective technology integration in schools. Administrators need support and training to analyze exemplary leadership behaviors, national standards, and actions they can take to be successful in promoting and supporting technology integration.

**Curriculum & Instruction**

All District staff must be able to understand and be efficient with integrating technology into their specific workplace, therefore, an additional component of the professional development will be to train and bring coherence to curriculum delivery with consistent vocabulary, Learning Targets, capacity matrices, and performance task templates for teachers to draw upon as resources. As new curriculum is implemented teachers will be provided opportunities for professional development regarding incorporation of the ILT process standards. Teachers will be provided strategies and opportunities to incorporate learner competencies in teacher instruction (i.e., project-based learning, research activities), and use learner competencies to create student learning based on the ability to seek, access, analyze, interpret, synthesize, apply, evaluate and express ideas and information.

Currently, informal and formal professional development occurs between media specialists and classroom teachers. With additional training and insight for both groups, this will be expanded and monitored by the ET-IL committee. The District is committed to continued use of online assessment management systems (TABLEAU, Scantron, Moodle, and E-ducate) to allow teachers to administer assessments electronically when needed and to access current and historical assessment data on their students. Administrators can develop reports to look at trends within buildings and across the District.

**Professional Development Courses**

Currently, staff is provided opportunities for training in technology tools and applications. After school professional development courses have been offered that cover the use of Excel, presentation software, digital cameras, digital storytelling, iDevices, and cloud computing software. While teachers that have attended these offerings have found them to be
valuable, the District has realized the need to reach more teachers with this content. In order to increase the number of teachers who participate in technology related professional development, the District has launched a Learning Management System (LMS), Moodle. Moodle will be utilized to deliver a variety of professional development courses in the future. The clear advantage of offering courses through this medium is the ability for teachers to participate in these courses at anytime in the year.

Professional development courses offered include:
- Document Cameras
- Educe Basics and Advanced Concepts
- Excel Basics, Intermediate, and Advanced
- Microsoft Word
- iDevices
- Building Class Websites
- Formative Assessments with Scantron
- Blogs & Wikis
- PowerPoint
- NetTrekker
- Podcasts
- Social Bookmarking and Google Tools
- Digital Storytelling and Photography
- Blended Learning
- Building Courses in Moodle

In order to directly meet the needs of individual buildings, departments, and small groups of teachers, the District is developing a custom professional development request system. This request system will ensure that any staff with a specific technology related professional development need are able to get the necessary support. An important component of this system will be the actual request form, which will require an explanation of how the technology training will impact their teaching and their students’ learning. We also hope to use this system to model the teaching and learning cycle for our staff.

Formal surveys to identify staff and student needs in information literacy and technology areas will be implemented and completed prior to planning additional training opportunities. The following list of pilots will be implemented over the next two years to address content and structure needs within the District.

Pilots
- iPod Touch Fluency Project
  - ISSUE: How can we use technology to accelerate reading for students who need to catch up to typical progression?
  - Partner: Apple Curriculum Specialist
  - Participants: 19 schools, 44 teachers
  - Equipment: 20 iPod Touch devices, iBook, Bretford Case
- LevelUp Integrated User Interface
• **Inspired Writing Project**
  - ISSUE: Improve writing achievement through the integration of web 2.0 technologies.
  - Partners: Modeled after the Littleton Public Schools project, Student Writing Achievement Through Technology Enhanced Collaboration (SWATTEC) initiative and Write From the Beginning curriculum.
  - Participants: 4 schools, 16 teachers.
  - Equipment: 30 Netbooks, 1 Netbook cart, 5 USB drives.

• **Blended Learning Pilot**
  - ISSUE: Provide tools to support achieving proficiency of all Colorado Academic Standards in a personalized learning environment.
  - Partners: Bill and Melinda Gates Foundation, Intific game developers, Digital Media and Learning competition.
  - Participants: 4 schools, 25 teachers.
  - Equipment: 5 iPads.

• **Flipped Classroom Pilot**
  - ISSUE: Support differentiated instruction in a learner-centered, competency-based classroom.
  - Partners: Bill and Melinda Gates Foundation, Turnaround District Improvement Plan (TDIP), Aaron Sams, and Jon Bergman.
  - Participants: 19 schools, 80 teachers.
  - Equipment: Camtasia Software, Logitech Headset, Logitech QuickCam Orbit, Wacom Bamboo Pen and Tablet.

• **Apple TV Pilot**
  - ISSUE: Identify a budget conscious solution for Interactive White Boards to allow for the development of interactive lessons and content.
  - Partners: Online resources.
  - Participants: 1 school, 23 teachers.
  - Equipment: 23 Apple TVs, 23 converters, 23 HDMI cable (all teachers in the school already have a LCD projector and iPad).

**Libraries**
Educators will be provided ample opportunities to use their school library and instructional technology resources so that students are active, engaged learners with access to the necessary tools for researching, compiling, synthesizing and producing work that meets the proficiency requirements for District Learning Targets and state standards. Educators will be trained on collaborative processes for effective information literacy and technology integration. A key factor to the success of the ET-IL plan will be successful implementation and integration of technology tools and teaching/learning tools and skills. As part of an authentic learner-centered competency based system, the district is actively promoting anytime, anywhere learning. Our challenge is to respond to the adult needs identified in the recent ET-IL survey and provide job-embedded, content-focused learning to support the professional learning communities and systemic change.
District-level support:
- Director of Assessment and Instructional Technology
- District Library Media Coordinator
- Model use of information literacy and technology
- Model use of IBEP (Information Based Educational Practices)
- Commit to achieve a high level of technical expertise and skill
- Commit to understanding current and future trends in technology integration

Building-level support:
- Supervise to ensure implementation of plan
- Model use of information literacy and technology
- Model use of IBEP (Information Based Educational Practices)
- Model collaboration with media staff
- Commit to achieve a high level of technical expertise and skill
- Commit to understanding current and future trends in technology integration

Building library staff:
- Facilitate flexible library scheduling
- Maintain professional affiliation with Colorado Association of Libraries and use the Colorado Power Libraries Project model
- Commit to achieve a high level of technical expertise and skill
- Commit to understanding current and future trends in technology integration
- Act as liaison between district and school to help bring information to the school
- Act as liaison between state library community and district to bring information to the district
- Support appropriate use of technology in learning
- Support appropriate use of resources needed to enhance and support learning
- Support of use of technology in information access, use and evaluation
- Support knowledge of information literacy and technology in schools

D. Evaluation Process

Previous Plan
The goals that were laid out in the previous ET-IL plan, submitted in 2009, were achieved with varying success.

1. Needs Assessment - This was developed by the original ET-IL Committee. It was presented to all staff in the district, informing the District about technology use and needs across the district. The current plan calls for a yearly needs assessment, ensuring the District is on track to meet the needs of staff and students. While this was carried out as described in the last ET-IL plan, our current goal involves the creation of an annual needs assessment.

2. Software Trainings - The trainings that were proposed in the 2009 ET-IL plan were carried out successfully. Focusing primarily on Scantron and E-ducate use, the District continues to use this “trainer-of-trainers” model and has seen successes with providing
facilitators in each building for day-to-day program help. With the success we have seen in the past few years, the District is maintaining this goal as a long-term effort.

3. **PD360** - This web-based professional development platform was launched across the district as planned. The intent was to provide targeted trainings and supports for teachers when and where they needed them. Though the discussion forums did prove to be a popular tool, in the end, the videos were not utilized enough to make the costs acceptable. Since then, the District has discontinued the PD360 subscription. The District is exploring the possibility of subscribing to PD360 in the fall of 2012 with a very structured rollout.

4. **After School Classes** - After school technology classes have been offered for the past three years for staff across the district. In order to reach more teachers, the district is looking at ways to deliver this content online, through our new Learning Management System. This goal is being expanded upon, as we look to offer more trainings and online professional development opportunities.

5. **Library Media Specialists** - A district level library media center coordinator was hired to help library specialists integrate information literacy skills into schools. With the retirement of our current library media coordinator, this is an important goal for the District to maintain, as we hire a replacement.

6. **Measurement Topics** - A solid set of Technology Measurement Topics and Learning Targets were created as we launched our Competency Based System. These were based directly off of ISTE’s NET-S standards. Creating these, as well as the accompanying resources, has been a benefit to technology and classroom teachers across the district. Proficiency on Technology Learning Targets are tracked in E-ducate along with all other content areas.

7. **Implement the NTeQ Model** - With the amount of change that our district has seen over the past three years, this has not been accomplished at the level we had originally desired. Our hope is to provide, to schools, departments, and groups of teachers over the next two years, focused trainings regarding integrating technology into a classroom. This has been added to our current goals.

8. **ET-IL Committee** - This committee did not meet as regularly as originally planned. Our future plan is to leverage technology to allow for more collaboration and communication between committee members. This has been added to our current goals.

**Teacher Evaluation**

Educational technology engages learners and information literacy provides thinking skills. This powerful combination can be used to more readily provide differentiation and accommodations in the classroom. As part of the District’s teacher evaluation tool, a proficient teacher uses teaching and learning strategies that demonstrate a consistent use of strategies designed to meet the needs of diverse learners, such as: interactive learning, students using technology, critical thinking activities and group strategies (Standard 2). With regard to differentiated instruction, the proficient teacher in Adams County School District 50 uses a variety of data sources and instructional strategies to meet the needs of the diverse learner. The pacing of instruction and learning strategies are based upon individual and/or group needs as determined from both formal and informal data analysis.
Currently the teacher evaluation instrument used by the District includes the following measurement criteria:

- Use of technology to analyze trends in student behavior or performance.
- Data-driven instruction is evident in the classroom (i.e. various tools to collect school data)
- Uses building resources to enhance instruction: Librarian, Data Facilitator, building Coaches
- Collaboration with others to lead changes in practice
- New techniques are tried as a result of training or collaboration
- Evidence of consistent use of strategies designed to meet the diverse learning styles: Students using technology, Interactive learning, group strategies

Criteria in the administrator’s evaluation instrument include:

- Understands and demonstrates the use of technology for analysis of students data, instruction and communication.

**Student Evaluation**

8th grade students will continue to be assessed, using the Middle Level Technology Assessment, developed by Learning.com. Results of these assessments will be studied, with results and trends helping to refine instructional practices across the district.

**ET-IL Plan Evaluation**

The ET-IL committee will continue to meet regularly to monitor and develop a process to evaluate the plan and its outcomes. It is likely that a variety of mechanisms will be used for evaluation, to include, but not limited to:

- Formal surveys and anecdotal feedback regarding the implementation of the information literacy and technology plan from stakeholders and participants at both district and school levels.
- Peer evaluation using defined evaluation instruments of the information literacy and technology portions of SIP plans
- Examination of data, i.e., technology use, library use, support requests from schools, student achievement results
- Participant evaluations of all formal information literacy and technology professional development offerings
- Schools will use Building Leadership Teams to evaluate the success of students in meeting their information literacy and technology proficiencies embedded within content
- Collection of student work samples, particularly useful in rubric development and as samples to guide students
- Data collected around collaboration between teachers and librarians

**Specific, Goal Related Tasks for Evaluation**
Affecting Goal 1, 2, 3, & 4 - Needs Assessment to identify technology and IL program needs

**Strategies:** Conduct annual needs assessment, compile and report results to determine needs.

**Activities/Timeline:** In May 2012, convene the ET-IL team to create an annual needs survey for instructional staff and students.

**Responsible Parties:** Director of Instructional Technology

**Budget Commitments:** No explicit commitment.

Affecting Goal 1 - Provide all K-8 staff with training in the Scantron electronic assessment systems (Achievement and Performance Series)

**Strategies:** Provide 4 day summer training to 20 lead teachers to develop a trainer of trainers model.

**Activities/Timeline:** Every K-8 teacher will receive a day of training from the lead teacher for implementing the competency-based assessment system. Scantron will provide a full time project manager to facilitate ongoing training, development of formative assessments and appropriate practices, and support for analyzing results to determine instructional needs.

**Responsible Parties:** Director of Instructional Technology

**Budget Commitments:** Total amount for year 1 implementation of a 3 year implementation cycle is $120,000

Affecting Goal 1 - Provide reporting and recording (E-duce) training for all K-12 staff

**Strategies:** Identify a lead E-duce trainer. Every teacher will receive a day of training from the lead E-duce teacher for entering data, monitoring progress on learning targets, creating reports and classroom webpages, blogs, calendars, etc.

**Activities/Timeline:** Training will begin in August 2012 for the lead teachers and be ongoing for all teachers throughout the following school year.

**Responsible Parties:** Executive Director of Learning Services Director of Instructional Technology

**Budget Commitments:** $2,000 for 16 teacher trainers for one year ($32,000)

Affecting Goal 1 - Provide after school technology classes.

**Strategies:** Identify a person with the necessary skills, knowledge and disposition to lead professional development sessions on requested topics.

**Activities/Timeline:** Specific schools needs are included in the schools professional development plan.

**Responsible Parties:** School principals Director of Instructional Technology Building supervisors
Affecting Goal 1 & 2 - Increase utilization of library media specialists regarding integration of information literacy skills.

Strategies: Hire a district level media center coordinator
Activities/Timeline: Post position and define role for a competency-based system
Responsible Parties: Executive Director of Learning Services Director of Learning Services
Budget Commitments: Reallocation of district FTE.

Affecting Goal 2 - Utilize a model, e.g. NTeQ, to integrate technology into teacher lesson planning.

Strategies: Create awareness regarding the model and train the technology mentors so they can help support all classroom teachers.
Activities/Timeline: This activity will begin in August and be ongoing throughout the school year.
Responsible Parties: Executive Director of Learning Services Director of Instructional Technology School Principal
Budget Commitments: No explicit budgetary commitment.

Affecting Goal 3 – The results of needs assessments will be used to identify network, hardware, and software needs.

Strategies: The results of the annual needs assessment will be compiled and used to help direct future technology improvements.
Activities/Timeline: Annually. Distribute and compile data from staff needs assessments.
Responsible Parties: Director of Instructional Technology and Director of Technology Services
Budget: No explicit budgetary commitment.

Affecting Goal 4 – Develop streamlines workflows and an integrated teacher portal.

Strategies: Pilot teachers and administrators will work with software developers to help create simplified workflows in existing software and a new teacher portal that will integrate current systems.
Activities/Timeline: Beta launch is planned for Fall 2012, with a District wide roll out in the Fall of 2013
Responsible Parties: Director of Instructional Technology

Affecting Goal 1, 2, 3, & 4 - The ET-IL committee will meet and monitor progress of the ET-IL plan and make adjustments as needed.
Strategies: Identify additional members who are willing to commit for 2-3 years. Define the purpose for the group
Activities/Timeline: Create a meeting schedule Create specific activities that need to be monitored, supported and adjusted, if necessary
Responsible Parties: Director of Instructional Technology
Budget: No explicit budgetary commitment.