Churchville-Chili Central School District
District Technology Plan
2018-2022

Table of Contents

Executive Summary

Vision: Technology is the means to fully achieve 21st Century Learning Environments in the classroom and workplace

Through technology, students have an opportunity for greater course offerings, access to a larger variety of documents, and the capacity for quality research. Teachers can use technology to provide effective learning environments which support student preparedness for college and career. Providing similar settings for teacher professional development can also occur - online professional development, professional learning communities, managing student data, and local and global collaboration with students, parents and other educators.

Eight Keys to Technology Integration include[1]:
- revision of the curriculum to promote 21st century knowledge and skills
- ongoing differentiated professional development
- a focus on making school culture more collaborative
- identification of realistic, sustainable funding sources for technology
- timely support for all users (teachers, staff, students)
- a strong and distributed leadership for implementation of educational technology
- a clear vision for technology integration
- increased partnerships with families, universities, and community businesses

Technology is the core of virtually every aspect of our daily life and work and we must leverage it to provide engaging and powerful learning experiences and content as well as resources and assessments that measure student achievement in more complete, authentic, and meaningful ways. Technology-based learning and assessment systems will be pivotal in improving student learning and generating data that can be used to continuously improve education systems at all levels. Technology will help us execute collaborative teaching strategies combined with professional learning to better connect our educators. Additionally, technology will help students to meet college and career readiness goals and develop their twenty first century skills.

Provide customer service utilizing technology in an efficient manner reliable and cost effective tools to support business, human resources and all supporting functions within the school system. Consolidation of silo systems to allow for business functions, Human Resource functions and instructional functions to exist in an integrated platform.

---

[1] "Technology-Rich Schools Up Close - ASCD." 2013. 5 Mar. 2013
<http://www.ascd.org/publications/educational_leadership/mar13/vol70/num06/Technology-Rich_Schools_Up_Close.aspx>

Introduction

The first goal of Churchville-Chili Central School District is to *"Engage all students in learner-centered instructional experiences based on state standards an~ rigorous district curriculum that leads to mastery on local, state, national assessments, graduation and the transfer and application of learning into their lives."*

In an effort to meet our district instructional goal, Churchville-Chili strives to provide all learners with engaging and empowering learning experiences. As a result, learners will set goals, remain in school despite obstacles, earn a high school diploma, and become college and career ready.

In an effort to "integrate and utilize technological resources to enhance and improve learning, communication, and efficiency," we will focus upon developing 21st Century Skills which will lead to inquisitive, creative, and resourceful thinkers, informed citizens, effective problem-solvers, groundbreaking pioneers, and visionary leaders.

In order to use today's information, tools, and technologies effectively and develop a commitment to lifelong learning, educators must be more than information experts; they must be collaborators in learning, seeking new knowledge and constantly acquiring new skills alongside their students.

Students must be fully engaged in school-intellectually, socially, and emotionally. This level of engagement requires opportunities to work on interesting and relevant/authentic projects, the use of technology, online resources, and access to an extended social network of adults and peers who support their intellectual growth.

In an effort to move forward and implement a five year technology plan, a district committee was formed in 2011-12 to focus upon implementing the National Education Technology Plan. The 21st Century Technology Planning Advisory Committee was tasked with the following Mission and Charge:

Mission: Create a District Wide Technology Plan that will apply advanced technologies to our entire education system to improve student learning, accelerate and grow the adoption of best practices and use data and information for continuous improvement.

Charge: Develop a district wide, dynamic technology plan based on our 21st Century Learning Environment Vision.

*
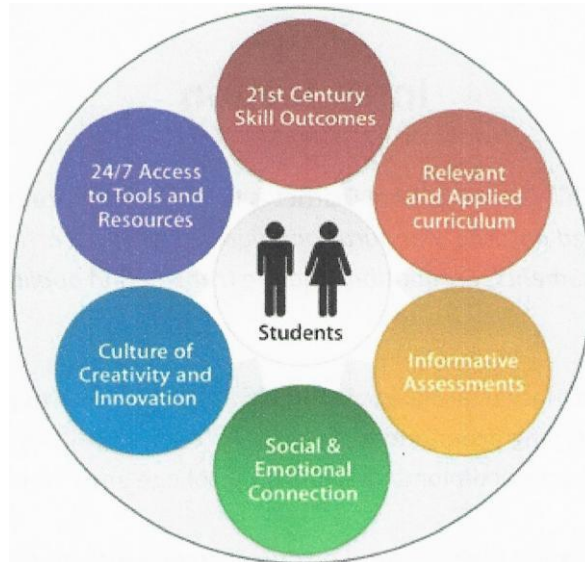
In order to obtain a current state of technology, as well as crafting a vision for future use of technologies, the committee gathered input from: Principals, Directors, Assistant Superintendents, parents and students of all respective areas, and teachers on the committee to represent initial ideas and thoughts at the elementary, middle and secondary levels.

Based on the findings of the committee, the vision for the district includes: creating a 21st century learning environment in which all learners have consistent access to a variety of resources based on the district's learner centered principles.

The goals that will lead to the vision are defined as:

- Engagement of students and adults utilizing technology in their own learning (IS)

- Construction of a blended learning model that is developmentally appropriate (IS)

- Building of capacity within our faculty and staff to meet the requirements provided in New York State Teaching and Learning Standards (PO Advisory Committee)

- Building of capacity within our faculty and staff to meet the Regents Reform initiatives (Common Core Standards implementation, computer based online assessments and Data-Driven Instruction)

- Customer service utilizing technology in an efficient manner (Business, HR, Transportation, Nutrition Services, Registration)

- Creation and implementation of curriculum which consistently incorporates technological

- resources as a tool (Office of Instruction with Principals)

- Implementation of 21st Century Skills - 4 C's (Communication, Collaboration, Critical Thinking, Creativity) (IS)

- Use of data to inform all practices including instruction, business, human resources, transportation, and nutritional services

Technology is not limited to the discussion of hardware or software in a school district, it also includes:
- Access to current and future digital resources
- Online collaboration
- Blended Learning environment
- Digital assessment - formative and summative
- Automated, integrated, digital procedures and processes

Subcommittees are created to clarify their vision, finalize their priorities and make recommendations to the district committee for technology implementation for each coming school year.

Learning: Engage and Empower

The challenge for our education system is to leverage technology to create relevant learning experiences that mirror students' daily lives and the reality of their futures. We live in a highly mobile, globally connected society in which young Americans will have more jobs and more careers in their lifetimes than their parents. Learning can no longer be confined to the years we spend in school or the hours we spend in the classroom: It must be lifelong, lifewide, and available on demand. (Bransford et al. 2006)[2].

To prepare students to learn throughout their lives and in settings far beyond classrooms, we must adapt what and how we teach to match what people need to know, how they learn, and where and when they learn and change our perception of who needs to learn. We must bring 21st-century technology into learning in meaningful ways to engage, motivate, and inspire learners of all ages to achieve.

Goal: All learners will have engaging and empowering learning experiences both in and out of school that prepare them to *be active, creative, knowledgeable, and ethical participants in our globally networked society*

- All stakeholders will create and foster a 21st century school climate
- CC will create a 21st century learning environment in which all learners have consistent access to a variety of resources and technological tools.
- CC will use a variety of communication strategies to engage each student.
- Teachers incorporate a knowledge and understanding of technology in their lessons to enhance student learning.
- Teachers incorporate instructional approaches and technologies to provide students with opportunities to demonstrate mastery of learning outcomes.
- Teachers engage students in the development of multidisciplinary skills, such as communication, complex problem solving, multi-media communication, collaboration, critical thinking, and equitable use of technology.
- Teachers use multiple measures and multiple formats, including available technology, to assess and document student performance.
- Schools will more closely connect academic goals and expectations with relevant experiences that mirror the reality of their lives and college/career environments.

_____

[2] "National Education Technology Plan 20161 U.S. Department of Education Office of Educational Technology" 2016. <http://tech.ed.govlfiles/2015/12/NETP16.pdf

Partnership for 21st Century Skills defines 21st Century Student outcomes to be:[3]

1. Core Subjects and 21st Century Themes

Mastery of core subjects and 21st century themes is essential to student success. Core subjects include English, reading or language arts, world languages, arts, mathematics, economics, science, geography, history, government and civics.

In addition, schools must promote an understanding of academic content at much higher levels by weaving 21st century interdisciplinary themes into core subjects:

- International Mindedness
- Financial, Economic, Business and Entrepreneurial Literacy
- Civic Literacy
- Health Literacy
- Environmental Literacy
- Common Core Literacy Shifts: balancing informational and literary text; building knowledge in the disciplines; staircase of complexity; text-based answers; writing from sources, and academic vocabulary
- Common Core Mathematics shifts: focus; coherence; fluency; deep understanding; applications; dual intensity

2. Learning and Innovation Skills

Learning and innovation skills are what separate students who are prepared for increasingly complex life and work environments in today's world and those who are not. They include:

- Creativity and Innovation
- Critical Thinking and Problem Solving
- Communication and Collaboration

3. Information, Media and Technology Skills

Today, we live in a technology and media-driven environment, marked by access to an abundance of information, rapid changes in technology tools and the ability to collaborate and make individual contributions on an unprecedented scale. Effective citizens and workers must be able to exhibit a range of functional and critical thinking skills, such as:

Information Literacy

Access and Evaluate Information:

- Access information efficiently (time) and effectively (sources)
- Evaluate information critically and competently

---

[3] "P21 Partnership for 21st Century Skills." 2005. 8 Apr. 2016 <http://www.p21.org/>

Use and Manage Information
- Use information accurately and creatively for the issue or problem at hand
- Manage the flow of information from a wide variety of sources
- Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of information

Media Literacy

Analyze Media
- Understand both how and why media messages are constructed, and for what purposes
- Examine how individuals interpret messages differently, how values and points of view are included or excluded, and how media can influence beliefs and behaviors
- Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of media

Create Media Products
- Understand and utilize the most appropriate media creation tools, characteristics and conventions
- Understand and effectively utilize the most appropriate expressions and interpretations in diverse, multi-cultural environments

ICT (Information, Communications and Technology) Literacy

Apply Technology Effectively
- Use technology as a tool to research, organize, evaluate and communicate information
- Use digital technologies (computers, PDAs, media players, GPS, etc.), communication/networking tools and social networks appropriately to access, manage, integrate, evaluate and create information to successfully function in a knowledge economy
- Apply a fundamental understanding of the ethical/legal issues surrounding the access and use of information technologies

4. Life and Career Skills

Today's life and work environments require far more than thinking skills and content knowledge. The ability to navigate the complex life and work environments in the globally competitive information age requires students to pay rigorous attention to developing adequate life and career skills, such as: Flexibility and Adaptability, Initiative and Self-Direction, Social and Cross-Cultural Skills, Productivity and Accountability, Leadership and Responsibility .

Learning Environment

The learning environment of the future will become more of a blended learning model defined as: a *formal education program in which* a *student learns* at *least in part through online delivery of instruction and content with some element of student control over time, place, path and/or pace and at least in part in a supervised brick-and-mortar place away from home.*[4]

The district is committed to providing students with an online component and will determine which blended learning model is appropriate based on grade level and content area. The environment will contain a learning management system component, a content delivery component and a device that is appropriate to the task.[5]

Implementation Action Steps:

I. Curriculum Development - Embed 21st Century Skills into the curriculum writing process for all subjects

II. Resources - Identify and support the purchase of technological resources to support: factual knowledge, procedural knowledge, and motivational engagement.

III. Access and Equity - Provide resources and opportunities for students and staff to have necessary learning and teaching tools for personalized learning anytime and anywhere (Including one-to-one initiative at grades 3-12)

IV. STEM - Use advances in learning sciences and technology to enhance STEM (science, technology, engineering, and mathematics) learning. Support the purchase and use of new technologies for representing, manipulating, and communicating data, information, and ideas have changed professional practices.

V. Research and Design: Investigate blended learning models and align to level and content area.

_____

4 "Innosight Institute» Classifying K-12 blended learning." 2012. 25 Apr. 2013
<http://www.innosightinstitute.*org/med*ia-room/publicationsleducation-publicationsl classifying-k-12 -blended-learning/>
5 "Future Ready Learning - Office of Educational Technology." 2015. 8 Apr. 2016
<http://tech.ed.govlfiles/2015/12/NETP16.pdf>

Providing Technology Accessibility for All Learners[6]

Learning experiences enabled by technology should be accessible for all learners, including those with special needs. Supports to make learning accessible should be built into learning software and hardware by default. The approach by CC is to include accessibility features in all technology driven environments, known as a universal design.

Three main principles drive application of universal design for learning (UDL)

1. Provide multiple means of representation so that students can approach information in more than one way. Examples include digital books, specialized software and websites, and screen readers that include features such as text-to-speech, speech-to-text, alterable text size, changeable color contrast, or a selection of different reading levels.

2. Provide multiple means of expression so that all students can demonstrate and express what they know. Examples include providing options in how they express their learning, where appropriate, which can include options such as writing, online concept mapping, flexible knowledge presentation tools.

3. Provide multiple means of engagement to stimulate interest in and motivation for learning. Examples include providing options among several different learning activities or content for a particular competency or skill and providing opportunities for increased collaboration or scaffolding.

[6] *Rose,* D. *H.,* & *Meyer, A. (2002). Teaching every student in the digital age: Universal design for learning.* Alexandria, VA: Association for Supervision and Curriculum Development.

Assessment: Measure What Matters

Churchville-Chili Central School District will use technology driven formative and summative assessments to diagnose and modify the "conditions of learning and instructional practices while determining what students have learned for grading and accountability practices."

> *Goal:* Our education system at all levels will leverage the power of technology to measure what matters and use assessment data for continuous improvement of instruction. We will use data to inform all practices including instruction, business operations, human resources, transportation, and nutritional services.

Technology Supports Assessing Complex Competencies
Technology allows the assessment of important competencies through multimedia, interactivity, and connectivity, demonstrating aspects of thinking highlighted in cognitive research. Technology makes it possible to assess students by asking them to design products or experiments, manipulate parameters, run tests, record data, and graph and then describe their results in a variety of ways.

Using Technology to Assess in Ways That Improve Learning
Assessments must be transparent, flexible and responsive to learner's needs, informative, and integrated with teaching and learning. Formative assessments are a tool to drive instruction, they should be frequent and common to allow for teachers to analyze the data and modify instruction as needed.

- o Assessing in the Classroom: Through the use of technology, every student answers questions, answers are posted and those with differing responses discuss how they determined their response, thus creating a more engaging learning environment.

- o Assessing During Online Learning: As students engage in online learning, the system captures inputs and collects evidence of problem solving, sequences, knowledge and strategy use. It provides timely competency based assessment for online learning and assessment of student learning.

- o Technology Supports Ongoing Interim Assessment for data-driven instruction: Technology provides streamlined implementation of regular cumulative assessments that guide future learning.

How Technology Supports Better Assessment

- o Adaptive Assessment Facilitates Differentiated Learning: Designed to identify the new learning experience which will most benefit the individual learner

- o Universal Design for Learning and Assistive Technology Improve Accessibility:

Technology allows for the presentation and assessment using alternative representations of the same concept of skill and can accommodate various student disabilities and strengths.

o Technology Speeds Development and Testing of New Assessments: Allows for efficiency and the ability to quickly assess the validity of the task items.

o Technology Enables Broader Involvement in Providing Feedback: Technology allows for authentic feedback from experts in the areas being assessed. Using experts to give feedback provides an authentic audience which is highly motivating for students. Technology makes the assessment process and the data collection more transparent and authentic.

Prospects for Electronic Learning Records
Electronic records follow the students throughout their lives, accumulating evidence of growth across courses and across school years. An extension of online grade books and other electronic portfolios, electronic learning records would include any learning experiences, demonstrated competencies including examples of student work and intervention reviews and progress monitoring data.

Using Assessment Data to *Drive Continuous Improvement*
We will collect student data and use this data to continually improve the learning outcomes and productivity while advancing technical and regulatory practice.

Implementation Action Steps:
I. Design, develop, and implement assessments that give students, educators, and other stakeholders timely and actionable feedback about student learning to improve achievement and instructional practices.

II. Build the capacity of educators, educational institutions, and developers to use technology to improve assessment materials and processes for formative, interim and summative uses.

III. Conduct research and development that explores how embedded assessment technologies, such as simulations, collaboration environments, virtual worlds, games and cognitive tutors, can be used to engage and motivate learners while assessing complex skills.

IV. Conduct research and development that explores how Universal Design for Learning can enable the best accommodations for all students to ensure we are assessing what we intend to measure rather than extraneous abilities a student needs to respond to the assessment task.

V. Revise practices, policies, and regulations to ensure privacy and information protection while enabling a model of assessment that includes ongoing gathering and sharing of data for continuous improvement.

Teaching: Prepare and Connect

In an effort to prepare for the awareness and use of twenty-first century skills, as well as the technological tools to support student learning, Churchville-Chili will provide professional development that is collaborative, differentiated and incorporates individual choice in learning opportunities for teachers.

Goal: CC *educators will be supported individually and in teams by technology that connects them to data, content, resources, expertise, and learning experiences that can empower and inspire them to provide more effective teaching for all learners.*

Professional Development Plan
    21st Century Skills
          a. tiered learning experiences based on personal skill level
               i.   awareness and basic through advanced
          b.   curriculum development and lesson planning
          c.   support for implementation of existing and emerging technology

    Collaborative, coherent, and ongoing professional development

    Delivery Choices:
          a. in Person
          b. online learning community
          c. blended environment

    Develop a collaborative environment:
          a. teachers (professional development, PLC, etc.)
   b. student learning (teacher and peer instruction)

It is imperative that we introduce connected teaching into our curriculum rapidly. The NYS Teacher Standards and Common Core Standards call for a shift to connected teaching; technology utilized as a teaching and collaborative tool for preparing our students to be college and career ready.

The proper use of technology can help us improve learning and assessment, better prepare effective educators, increase teacher technological competency and improve the delivery of effective instruction. The use of technology will enable a shift to a new model of connected teaching and learning.

Connected teaching:
- 24/7 access to content, data, and systems
- Digital Resources
- 24/7 student access to teacher via online resources

- 24/7 access to parent portal grades and student progress information
- Professional Learning Communities (PLCs)
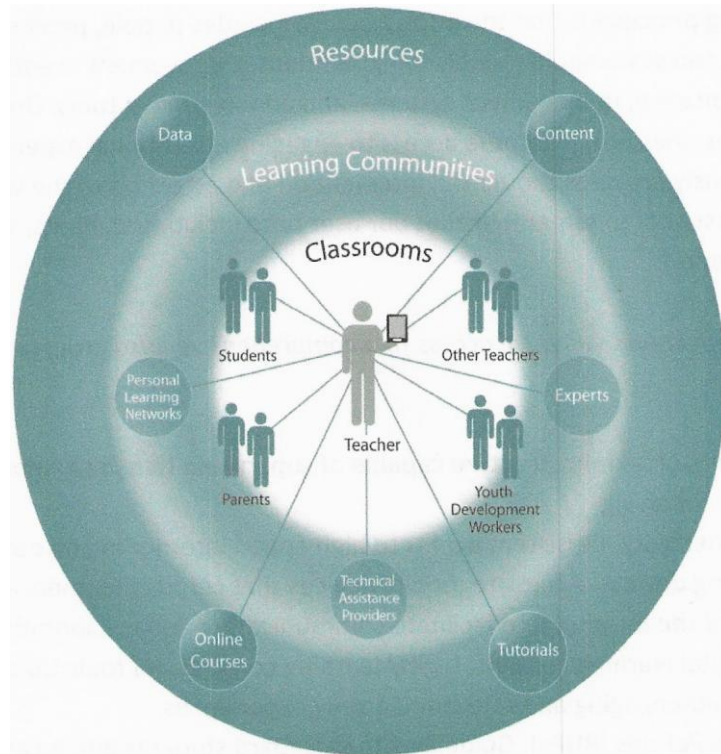
Connected teaching supports educators in managing the multiple dimensions of curricular instruction. Tools allow educators to coordinate course materials, syllabi, assignments and discussions in a centralized digital learning format for students.

Connecting with Students to Personalize and Motivate Learning
Connected teaching offers many opportunities to personalize and create authentic learning experiences. Online learning communities reduce teacher isolation and creates opportunities for peer collaboration to improve student learning. Online learning communities also permit the coordination of teams of educators to collaborate within a school, between a school and homes, and amongst other settings that may support a student's learning. Educators are no longer limited by where they teach or when and students are no longer limited by traditional brick and mortar school settings.

Infrastructure: Access and Enable

Support CC as it moves beyond the traditional model of educators and students in classrooms to a learning model that brings together teaching teams and students in classrooms, labs, libraries, museums, workplaces, and homes-anywhere, anytime.

The essential underlying principle is that the infrastructure includes people, processes, learning resources, and policies and sustainable models for continuous improvement in addition to broadband connectivity, servers, software, management systems, and administrative tools. On its own, access to connectivity and devices does not guarantee access to engaging educational experiences or a quality education. CC continuously provides thoughtful intervention and attention to the way technology is used for learning. It is also essential to remember that our user base includes students, educators, administration and parents.

Goal: All students and educators will have access to a comprehensive infrastructure for learning when and where they need it.

The essential components of an infrastructure capable of supporting transformational learning experiences include the following:

- Ubiquitous connectivity: Persistent access to high-speed Internet in and out of school
- Powerful learning devices. Access to mobile devices that connect learners and educators to the vast resources of the Internet and facilitate communication and collaboration
- High-quality digital learning content. Digital learning content and tools that can be used to design and deliver engaging and relevant learning experiences.
- Responsible Use Policies (RUPs). Guidelines to safeguard students and ensure that the infrastructure is used to support learning.

INFRASTRUCTURE

To Support Everywhere, All the Time Learning

High-Speed
Connectivity to Schools

Quality Digital Content
& Resources

Data Privacy
& Security

LEADERSHIP

ASSESSMENT

LEARNING

TEACHING

High-Speed Wifi
Throughout Schools

Digital Citizenship
& Responsible Use

Home Internet
Access

High-Quality,
Low-Cost Devices

Broadband & Access Everywhere

Internal broadband includes the overall data transmission speeds inside the district between all buildings. Internet broadband is the data transition speed between the district and the Internet.

Implementation Action Steps:

School Year	Internal Bandwidth	Internet
2018-2019	Extend internal10GB fiber backbone to remote elementary buildings	Implement 1GB Internet connection
2019-2020		Secondary Internet connection for additional bandwidth and redundancy
2020-2021		

Broadband to student households. The committee does an annual survey grades 3-12 to ascertain what devices student currently own and utilize, what types of access student have at home and on the road and what resources students use on a regular basis through their personal and educational experiences.

Per the student surveys, less than 2% of our student population does not have access to the Internet at

home and less than 15% did not have Wi-Fi capacity at home. In addition to this, approximately 50% of the students have an Internet capable Smartphone. With this information, the community is in a good place as the district continues to move forward with adopting other forms of a digital based curriculum. The district also has an inventory of cellular carrier based laptops that can be signed out to the 2% based population that does not have Internet access at home.

Server, Core Services and Disaster Recovery

Includes email, core user applications, core data applications, storage, disaster recovery site.

School Year	
2018-2019	- increase active infrastructure monitoring and alerting tools - New Network Administrator position -Monitor and adjust required internal storage capacity - Monitor Google cloud usage
2019-2020	- Monitor and adjust required internal storage capacity - Monitor Google cloud usage
2020-2021	- Move district staff to MS Office 365 - Monitor and adjust required internal storage capacity - Monitor Google cloud usage

Access devices for every student and educator

District provided and BYOD. Ensure that every student and educator has at least one Internet access device and appropriate software and resources for research, communication, multimedia content creation, and collaboration for use in and out of school.

With the Smart Schools Bond Act expenditure planning, the Board of Education approved a plan to implement 1:1 Chromebook devices for students grades 2-12 during the next three school budget cycles. In addition to this, the district is implementing iPad based learning centers in grades K-2 and are providing a Chromebook cart for Grade K-1 in each elementary building to support the transitional device use at grade 2.

School Year	Staff	Student
2018-2019	1:1 Laptop K-12 Full time	- Replace Chromebooks for Grade 3/5/7/10 with touch, convertible devices - Convert student model where devices can be kept over summer - Add 1:1 Chromebook carts for Grade 2 - Remove traditional desktop computer lab in elementary buildings
2019-2020	1:1 Laptop K-12 Full time	- Replace Chromebooks for students entering Grade 7/9/10/12 with touch, convertible devices - Replace Chromebooks for Grade 4/6 with touch, convertible devices - Create maker space activity centers in elementary buildings
		- Replace Chromebooks for students entering Grade 7/10 with new touch, convertible devices - Replace Chromebooks for Grade 2 with touch, convertible devices - Expand maker space activity centers in elementary buildings and Middle School

Student Safety & Responsible Use

Responsible Use Policies (RUPs): CC maintains written guidelines and principles for the use of Internet, Web-based products, and computer access provided by the district. RUPs create an opportunity to teach students, while in school, to become responsible digital citizens, which will help them thrive in a connected world. A device user agreement is signed by both student and parent grades 3-12 which provide basic care and responsibility guidelines. The Student Code of Conduct is continually updated on rules governing use of the Internet and online conduct of students.

CC meets CIPA requirements by implementing Internet content filtering. Filters designed to provide protections from controversial online content by intercepting and blocking attempts to view particular web pages. In addition, student provided email accounts are filtered from use with parties outside the district maintaining a safe communication environment with district peers, teachers and staff only.

All district iPad and Chromebook devices are district managed, allowing control over what Apps can be loaded, maintaining the educational purposes of the device. Device management also provides Internet filtering capacity outside the district.

Protections for Student Data and Privacy
The use of student data is crucial for personalized learning and continuous improvement. Acting as the stewards of student data presents educators with several responsibilities. School officials, families, and software developers have to be mindful of how data privacy, confidentiality, and security practices affect students. CC has an obligation to tell students and families what kind of student data the school or third parties are collecting and how the data can be used. The district continues to update its policies and data use awareness to families. The district is also in the process of working with individual outside providers on terms of service.

School Year	Staff
2018-2019	- Refine individual 3rd party vendor contracts - Create Data Privacy Policy

Interoperability Standards and Connectivity
The district strives for interoperability standards when researching outside hosted solutions. These services may provide software functionality, educational content, and/or may provide student-learning data.

Identified critical interoperability standards and connectivity:
- Account authentication between systems tied together with single sign-on capacity
- Automated data connections between the Student Information Systems (SIS) and other data

based student systems

- Continued integration of Student Information Systems (SIS), CC-Apps and approved Learning Management Systems (LMS)
- Improve Central Office efficiencies increasing automation and implementing employee self-service systems

School Year	Staff
2018-2019	- Continue SSO between Google Apps and new hosted application services - Implement Clever SSO services and student badge login services - LDAP integration with Staff Intranet Portal

Leadership

Research & Design: Innovate and Scale

With an ever changing landscape in education, Churchville-Chili must create opportunities in research and design, providing effective and quality learning experiences in the classroom. In addition, the investigation of reliable and cost effective tools to support business, human resources and all supporting functions within the school system is essential.

Goal: CC *will adopt and ensure equitable access to a technology-based education system which provides effective learning experiences, assessments, and teaching along with a comprehensive infrastructure for learning to support both formal education and all other aspects of learning.*

Embracing Continuous Improvement
The underlying principle of continuous improvement is that we need to define and measure productivity, and monitor these measures to identify areas for improvement. This starts with identifying what we seek in learning outcomes. It also requires getting a handle on the costs associated with components of our education system and with individual resources and activities, so that the ratio of outcomes to costs can be tracked over time.

Measuring and Managing Costs:
- Need ability to track, benchmark and analyze costs of services provided in the district individually and in a format that allows for comparative analysis
- Common cost-accounting standards will be used to benchmark and analyze all costs

Using Data in Decision Making
- Mechanisms are required to allow for integrated systems to be put in place that will provide means to easily and efficiently (highly productive manner) collect complex forms of data needed to derive meaningful interpretations relative to what is being measured.
- Consolidation of silo systems to allow for business functions, Human Resource functions and instructional functions to exist in an integrated platform

Employing frequent Design and Development
- Define, test and refine new educational practices on a trial basis and measure their implementation effectiveness and results to drive continuous improvement practices

Moving to Useful Metrics on the Use of Technology
- Systematically collect data to determine how technology is being used to support

teaching, learning and assessment
- Regularly review and communicate metrics to improve learning outcomes and the productivity of the education system

Reorganizing Teaching and Learning

Provide ability for students to learn on demand anytime and anywhere. Students need the ability to access resources regardless of time of day, geography, or ability. They should have access to individualized instruction from educators and experts of the content area anywhere in the world They should be able to learn at their own pace and in ways that are tailored to their individualized interests and learning modalities.

- Alternative ways to give students credit for learning (dance vs PE; community courses count for school setting - content is the same)
- Seeking partnership opportunities where appropriate with area local and county governments, businesses and universities.
- Utilize technology to implement Individualized competency based learning progression
- Utilize technology to deliver flexible student centered learning schedule
- Leverage student's interest in technology and the time they currently spend learning informally outside of the school day to extend learning time in a way that motivates them even more.
- Provide online learning that can be accessed anytime/anywhere (NYS Virtual High School)

Removing Barriers to Secondary and Postsecondary Graduation
- Improve graduation rates
- Create greater access to rigorous courses for all students
- Remove barriers - review district policies for acquiring course credit

Implementation/ Next Steps:

- Ensure sustainability by establishing clear strategic planning connections among all state, district, university, and school levels and how they relate to and are supported by technology to improve learning.
- Develop and Adopt a common definition of productivity along with improved policies and technologies for managing costs.
- Rethink basic assumptions in our education system that inhibit leveraging technology to improve learning. recognize how we currently organize student and educator learning around seat time instead of demonstration of competencies.
  - differentiation made more possible through technology use (students move through pace of content learning in lieu of seat time)
- Develop systems for record keeping to assess educational use of technology

  - collaborative inquiry (metrics)
- Design, implement, and evaluate technology-powered programs and interventions to ensure that students progress seamlessly through our system to prepare students for college and

careers.

- Implementation of an effective online learning management system (i.e. lms.cccsd.org)
- Continual research into hybrid, blended, and online learning systems
- Continual support of research and development opportunities and initiatives