Strategic Technology & Innovation Plan

2018-2021

Brewster Central School District

Table of Contents

Brewster Digital Learning Committee Members (May 2018)

Andy Kurtz, Teacher, Brewster High School
Angela Spreter, Teacher, HH Wells Middle School
Anne Marie Poole, Teacher, HH Wells Middle School
Austin Simmons, Computer Aide, Brewster High School
Bob Valdez, Assistant Director of Technology for Support & Operations
Brendan Breen, Library Media Specialist, Brewster High School
Christian Hernandez, Assistant Principal, HH Wells Middle School
Christine Rice, Computer Aide, CV Starr Intermediate School
Danielle Michielini, Teacher, CV Starr Intermediate School
Danielle Trippodo, Assistant Principal, Brewster High School
Deb Romaine, Instructional Technology Specialist, Teacher, HH Wells Middle School
Donna Schneider, Assistive Technology Specialist
Frank Zamperlin, Ed.D., Principal, JFK Elementary School
Gabrielle Lappe, Teacher, JFK Elementary School
Jackie Fego, Teacher, CV Starr Intermediate School
Jen Piper, Network Specialist, Technology & Innovation Department
Jim Treloar, Director of Technology & Innovation
Julianna Tangredi, Teacher, CV Starr Intermediate School
Kyan Beauzile, Student, Brewster High School
Liz Hamboussi, Instructional Technology Specialist & Teacher, JFK Elementary School
Liz Kennedy , Director of Pupil Personnel Services, Special Ed.
Michelle Gosh, Assistant Superintendent for Curriculum, Assessment & Instruction
Michelle Mejia, Computer Aide, Technology & Innovation Department
Maggie Andriello, Principal, CV Starr Intermediate School
Mary Grgecic, Teacher, JFK Elementary School
Marcus Gromofsky, Student, HH Wells Middle School
Mary DeBellis, Library Media Specialist, HH Wells Middle School
Mike Putorti, Teacher, HH Wells Middle School
Paul George, Instructional Technology Specialist & Library Media Specialist, CV Starr Intermediate School
Paul Stellacci, CSE Chair, Pupil Personnel Services
Peter LaMoreaux, Teacher, Brewster High School
Steven Coshal, Teacher, CV Starr Intermediate School

Introduction & Overview

"Those who cannot change their minds cannot change anything."
— George Bernard Shaw

Digital tools and the internet have completely transformed the way we think about learning, work and life. Our first source for information is not an encyclopedia with information that is outdated once it is published, but rather Wikipedia whose crowdsourced information is updated and monitored by subject matter experts daily. We use email, texts and social media posts to interact with friends and family long before we pick up a pen and paper or a phone. Computers in their many forms from desktops and laptops to tablets and smartphones are a ubiquitous and vital part of work, commerce, and daily lives. While there are many that lament the "good old days" from our youth when times were simpler and less digital, this is the world our students live in and the world in which we must help them to succeed. The Brewster Central School District has embraced this new reality and through the Strategic Coherence Plan set the district on a path to provide students with the essential skills to be successful in an ever changing world. We have identified, through the Profile of a Graduate, 5 skills that will help students succeed no matter what changes and new realities they may face or what path they choose.
The Strategic Coherence Plan and the District's Mission have been central to the development of the Instructional Technology Plan for 2018 - 2021. We have used these lenses to develop our vision and goals for the use of technology in our community.

Planning Process for Development of the Instructional Technology Plan

A broad coalition of teachers, administrators, students and parents representing all 4 school buildings met over the course of 5 months from January - May 2018. Our Digital Learning Committee worked first to develop a vision statement for the use of technology in Brewster using the district's mission statement, our Strategic Coherence Plan, and the state's mission statement as a guide. Using the vision that was developed, the committee then analyzed data to determine where we were with respect to achieving that vision. The most influential data we

used came from a Technology use survey from BrightBytes that looked at responses from teachers, students and parents around 4 areas:

1. availability of technology in the school and in the classroom;
2. use of technology and promotion of 21st century skills in the classroom;
3. perceived technology skills, and
4. beliefs, culture and professional learning around technology.

This survey was administered once in January 2014 and then again in January 2018 and showed improvements that were made some areas with respect to our last Instructional Technology Plan Goals and enabled us to determine 3 main goals for us to focus on over the next 3 years to help us realize our vision for the use of technology.

With these goals defined, we split into sub-committees to work on 3-year action plans for each. The sub-committees looked at data to see where we were at with respect to each goal to outline the concrete steps needed to achieve them. The committee then laid out plans to meet over the next year to meet to implement the plans that were put in place.

District Mission Statement:

To create a culture within BCS that embraces the whole child, challenges children's abilities, values diversity, incorporates relevant technology, and develops a Professional Learning Community that strives to rigorously evaluate its effectiveness on student learning.

Our Vision for Use of Technology

Brewster Central School District will engage all learners through authentic problem and project-based learning, inspire and empower them to ask and answer questions of personal and public interest, and be responsible digital citizens.

Goals to Drive the Attainment of This Vision

Goal 1 - Increase the use of technology supported problem and project based learning by 10% annually for the next three years as measured by pre and post year surveys and skills assessments.

Goal 2 - Develop a K-12 scope and sequence of grade level digital literacy skills by July 2019 that will be integrated into existing curriculum, assessments & instruction and assessed annually.

Goal 3 - Improve tools for communication & collaboration by upgrading 75% of student, teacher and classroom devices to be more agile and collaborative by the end of the 2020-2021 school year.

Current State of Brewster CSD

Infrastructure

Network

Over the past few years, Brewster has built up a robust network to support instruction, administration, and operations and made upgrades to increase security and reliability. Here are a few of the main highlights:
- Redundant data storage with off-site backup
- Redundant firewalls with automatic failover
- Redundant internet lines with automatic failover to maintain maximum uptime
- 100% WiFi coverage in all instructional and administrative spaces
- 850 mbps (megabits per second) of available bandwidth across a full 10Gb network
- Next Generation Anti Virus / Network Exploitation Protection
- Full fiber optic network connecting all BCSD buildings

Instructional Technology

With the help of the Smart Schools Bond Act, Brewster has been able to expand access to computers for all students in the district. We currently have over 3,000 Chromebooks which provide all teachers as well as students in grades 1-12 with their own devices and will expand this down to Kindergarten by the end of the 2018-2019 school year. Ipads are used throughout Kindergarten as well as in grades 1- 5 to support the use of robotics and Project Lead the Way (PLTW).

Technology Oversight Committees

There is one district level and 4 building level committees that meet regularly to collectively drive and manage Brewster's technology vision.

District Digital Learning Committee

The District Digital Learning Committee is primarily responsible for the coordination and oversight of the variety of technology initiatives and actions conducted across the district. The District Digital Learning Committee exists in order to ensure that all key stakeholders have input into district decisions related to technology's use as a tool for teaching and learning. The committee will be led by Brewster's Director of Technology and Innovation in close collaboration with the Building Instructional Technology Specialists. It will include representation from each Building Digital Learning Committee (see below), district Curriculum and Instruction administrators, and district-level

leadership, and parents. Building-based staff (teachers and administrators) and students who are on the District Digital Learning Committee should also be on their respective Building Digital Learning Committees. The Director of Technology and Innovation is responsible for recruiting members and ensuring that the committee position openings are filled.

Each year, the District Digital Learning Committee will coordinate a review/evaluation of district progress toward meeting the goals in the Strategic Technology Plan and will revise/update the plan as necessary. The District Digital Learning Committee will also review technology initiatives and current use of current software and hardware and make recommendations to the Director of Technology and Innovation as to the technology needs of the district.

Building Digital Learning Committees - The group is organized by representation by each of the departments, and/or grade level teams in the building and the building administration. The committee is chaired by the building Instructional Technology Specialist. The Building Digital Learning Committees are responsible for gathering, aggregating, and formulating building-level decisions around how technology best fits with each individual school's instructional program. The building committees are charged with deliberating around the particulars of technology integration (e.g., training needs, desired policies, hardware, software and network needs) and then advocating for these needs at the level of the District Digital Learning Committee (where each building-level committee is represented) as well as through monthly meetings with the Director of Technology & Innovation. Building Digital Learning Committees should contain representation from all staff members and departments. Building Technology Committees do not have a "budget" per se, but rather provide input on building needs to the District Digital Learning Committee and the Director of Technology and Innovation who oversee and disburse the district's technology budget.

Staffing

The Technology & Innovation Department consists of 4 main teams. Members of each team also assist with Help Desk requests and support one another.

Network Infrastructure

Responsible for developing and maintaining all of the access to the internet, access controls, cyber security and network resources. The team consists of:
- 1 **Assistant Director of Technology for Support and Operations**
- 2 **Network Specialists**
- 1 **Computer Support Technician**
- 1 **Computer Aide**

Data

Manages our state reporting, student information system (SIS), all of the integration with other instructional, operational and finance systems and also assists educators and other end users in the collection, assessment and analysis of information. This team consists of:
- 1 **School Information Systems Data Manager**
- 1 **School Information Systems Support Specialist**

Website & Communications

The Website and Communications Team is responsible for maintaining the website and communications with staff and the Brewster community via social media, newsletters, robo calls and Bear's Backpack.
- 1 **Computer Operations Specialist**
- 1 **Clerical Aide**

Instructional Technology

This team works to support teachers in effective and innovative use of tech tools and technology supported instructional strategies. This team consists of:
- 1 **Director of Technology & Innovation**
- 4 Teachers who receive a stipend to work as **Instructional Technology Specialists**
- 1 **Adaptive Technology Specialist**
- 4 **Part-time computer aides**. (Two are full time that also have attendance duties.)

The district had a district wide instructional Technology Specialist from Sept 2015 to June 2018. The position was cut due to budget constraints in the 2018-2019 school year. It is the belief of the committee that this is something that should be rectified as soon as possible to support teachers and students in the expanded use of devices and software to support learning throughout the district and fulfil the districts vision for the use of technology.

Vision, Goals and Action Plans

The District-Wide Digital Learning Committee worked over the course of several months to develop our vision for the use of technology in Brewster and 3 strategic goals that will help us to realize that vision.

Vision for use of Technology

Brewster Central School District will engage all learners through authentic problem and project-based learning, inspire and empower them to ask and answer questions of personal and public interest and be responsible digital citizens.

SMART Goal 1 - Problem & Project Based Learning

All staff will increase their use of technology supported problem and project based learning by 10% annually for the next three years as measured by pre- and post-year surveys and skills assessments.

NYSED Goal that this Goal Aligns with:
Provide access to relevant and rigorous professional development to ensure educators and leaders are proficient in the integration of learning technologies.

Action Steps

Description	Stakeholder responsible	Anticipated date of Completion	Anticipated Cost	Measure of success
Develop survey tool that will be used to measure the level to which teachers have increased their use of project and problem based learning	Director of Technology & Innovation	Nov 2018		Yearly Post Survey
Provide monthly professional learning opportunities to modify/transform existing lessons to incorporate technology supported problem and project based learning	Assistant Superintendent for Curriculum & Instruction	Jun 2019	Money could come from teacher center budget	Monthly trainings are held
Creating Awareness - Share examples of how teachers are incorporating technology to do project and problem based learning in their classroom during faculty meetings and PLC time	Building Principals	Jun 2019		Web Matrix
Creating Awareness - Add information about project and problem based learning in Newsletters and other communication from the Technology & Innovation Department and from principals.	Assistant Superintendent for Curriculum & Instruction	May 2021		Information is shared with faculty via newsletters and other communications
Develop a plan to incorporate time for Tech PD and/or sharing during PLC time for 10% of the time yearly.	Building Principals	Sep 2018		Plan for Tech PD and sharing during PLC submitted to Tech Director
Provide opportunities for teachers to do intervisitation using Innovation Exploration model.	Classroom Teacher	Jun 2021		Requests are approved for visitations.
Develop a matrix of K-12 digital literacy exemplars to provide educators tangible examples of effective technology integration models that empowers teachers to transform pedagogy and learning.These exemplars will reside in a larger matrix of standards.	Director of Technology & Innovation	Jun 2019		Matrix is developed
Add time during Superintendent Conference Days for Project-based Learning	Assistant Supt for Curriculum & Instruction	Jun 2021		Professional Learning on PBL is offered at SCD

SMART Goal 2 - Develop K-12 Scope & Sequence

Develop K-12 scope and sequence of digital literacy skill that will be assessed annually using grade level goals.

NYSED Goal that this Goal Aligns with:
Develop a strategic vision and goals to support student achievement and engagement through the seamless integration of technology into teaching and learning.

Action Steps				
Description	**Stakeholder responsible for completion**	**Anticipated date of Completion**	**Anticipated Costs**	**Measure of success**
CSforAll Committee assesses and reports the current state of digital literacy in the district.	District ITS	Jun 2018		Audit will be completed.
Evaluate applicable standards (from what?) to support the foundation of our benchmarks.	Assistant Supt for Curriculum & Instruction	Sep 2018	$10,000	Standards will be identified
Develop a K-12 scope and sequence of digital literacy skills	Assistant Supt for Curriculum & Instruction / Building ITS	Jun 2019	$20,000	Comprehensive Scope and Sequence will be finalized and published.
Develop rubric-based assessments of student achievement toward digital literacy skills at benchmarks (aligning to SCP where possible?)	Assistant Supt for Curriculum & Instruction / Building ITS	Jun 2020	$20,000	Collection of rubrics & assessments
Provide curriculum writing opportunities for teachers for incorporating specific skills at different points in the grade level curricula	Assistant Supt for Curriculum & Instruction / Building ITS/Building Admin	Jun 2021		Lessons/units that incorporate specific digital literacy skills/benchmarks.
Create lessons and curricular materials to teach digital literacy skills that move toward benchmarks	Assistant Supt for Curriculum & Instruction / Building ITS	Jun 2021	$50,000	Production of exemplar lessons and Curricular materials in multiple subjects and grade levels.

SMART Goal 3 - More Agile and Collaborative Tools

Make 75% of student, teacher and classroom devices more agile and collaborative by the end of the 2020-2021 school year.

NYSED Goal that this Goal Aligns with:
Provide technology-enhanced, culturally- and linguistically-responsive learning environments to support improved teaching and learning

Action Steps

Description	Stakeholder responsible for completion	Anticipated date of Completion	Anticipated Cost	Measure of success
Develop replacement cycle for all instructional devices from Student and Teacher Chromebooks to classroom desktops and instructional Displays.	Director of Technology & Innovation	Aug 2018	$0	Replacement cycle is in place.
Develop a Virtual Desktop Infrastructure (VDI) to provide students access to PC based application on their chromebooks and allow them to access these school resources from anywhere, anytime	Director of Technology & Innovation	Sep 2018	$80,000	Replace one PLTW classroom laptops for 2018-19 School Year
Develop plan for use of an annual Installment Purchase Agreement which will fund the instructional hardware replacement cycle.	Director of Technology & Innovation	Jun 2019	$400,000 annually	IPA in place
Replacement of aging and failing projector based instructional displays with Digital Displays for improved visibility and to allow screen casting and on-screen collaboration. This will occur in stages replacing 25% of the aging devices each year. This gradual rollout will spread out the financial impact for both implementation and for replacements.	Director of Technology & Innovation	Jun 2021	$225,000 Annually	By June 2021, 75% of classrooms have Digital Displays for instruction.

Professional Learning to Support Technology Goals

Many of the members of the District Digital Learning Committee are also part of the Professional Learning Committee which helped to ensure that both the Instructional Technology Plan and [Professional Learning Plan](#) were aligned. Here are the plans as they relate to each goal:

- **Goal 1:** All staff will increase their use of technology supported problem and project based learning by 10% annually for the next three years as measured by pre- and post-year surveys and skills assessments.
    - A 3 day long paid workshop was held in the summer of 2018 by a trainer from the Buck Institute to assist interested teachers in developing Projects Based Learning (PBL) units & lessons
    - An additional introductory one day session will be offered in the fall or winter of the 2018-19 school year to generate interest and involve more teachers in utilizing this approach in their teaching.
    - We plan to offer an additional 3 day in-service course offered by our staff to further develop their skills in PBL.
    - Project Based Learning is one of the Learning Strands that will be offered throughout this upcoming year to any and all interested teachers
    - Participants in the PBL strand will engage in some of the following activities throughout the year:
        i. Workshops and working sessions during Superintendent Conference Days
        ii. Learning Walks to observe and reflect upon other teachers practice in their classroom
        iii. Ongoing asynchronous online discussions and readings

- **Goal 2:** We will develop K-12 scope and sequence of digital literacy skill that will be assessed annually using grade level goals.
    - These benchmarks will be designed to help focus both the curriculum development and the professional learning required to help achieve our district mission and realize our instructional technology vision.
    - One of the action items for this goal is the development of a Brewster Technology Integration Matrix which is a modification of the University of South Florida Technology Integration Matrix (https://fcit.usf.edu/matrix/matrix/). We plan to show how each of the Strategic Coherence PlanSkills (Communication & Collaboration, Critical Thinking, Adaptability, Civic Responsibility and Perseverance) can be implemented using technology at the 5 different levels of technology integration. We feel that this process of developing this matrix will provide excellent professional learning and the tool itself will be used to guide the development of future learning opportunities for educators.

- ○ The district adopted professional learning plan for the 2018-2019 school year includes year long in-depth learning Learning Strands around a number of topics that will support our vision for instructional technology. A few of them are:
    - i. Improving student learning through the use of 1:1 devices
    - ii. Improving student engagement through total participation techniques
    - iii. Cultivating curiosity
    - iv. Differentiation
    - v. Using assessment to guide instruction
    - vi. Innovation in the classroom
    - vii. Fostering problem solving in the classroom
    - viii. Project Based Learning
    - ix. Strategies for student centered classroom

- **Goal 3:** Make 75% of student, teacher and classroom devices more agile and collaborative by the end of the 2020-2021 school year.
    - ○ Each teacher that receives a new fully interactive Smart Display will be required to attend 4 half-day trainings over the course of the year to learn how to use all of the different features and use it to promote more student centered lessons and project based learning.
    - ○ When we roll out our Virtual Desktop Infrastructure, VDI, we will support that with instructor and student workshops and ongoing support through help videos and in-class guidance