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SECTION I

OVERVIEW OF THE HANDBOOK
Instructional Technology Handbook

Introduction
This handbook describes VCSU’s commitment to enhancing teaching and learning with instructional technology, research and training. Technologies can provide powerful support for teaching and learning but the value depends upon how effectively they are used to support instruction. All teacher education students should graduate with the knowledge and skills that will allow them to easily and effectively integrate technology in their teaching.

VCSU is fortunate to have a technology rich environment that provides opportunities for instructors and students. The importance of technology is apparent through the laptop initiative, installation of media technologies, and support for innovation in the classroom. Faculty have developed considerable expertise in the use of instructional technology during the past 15 years and greatly expanded the range of instructional strategies available as well as assessment tools that can be deployed to fit the various situations.

Instructional Technology Standards
This handbook was developed using the standards developed by the International Society for Technology in Education (ISTE). ISTE is the leading organization supporting educators in improving teaching and learning through the effective use of technology in PK-12 and teacher education. The National Educational Technology Standards (NETS) serve as a roadmap for improved learning and teaching. The NETS help measure proficiency and set goals for what students (NETS•S) and teachers (NETS•T) should know and be able to do with technology in education.

Example Strategies
This handbook divides the NETS•Student and NETS•Teacher standards into two sections. Each section provides example strategies that can be used to address the standards and performance indicators. The example strategies are from content method courses on the VCSU campus and examples developed by the Bush Grant instructional technology group. They are intended to assist readers in understanding the type of activities that can be used to address the standards and performance indicators. There are most likely other strategies you use or may develop in the future that will also address the standards.

Bush Grant Initiative
The goal of the Partnership for Educating Teacher Leaders (PETL) project is to recruit, prepare, place and support teachers who are able to effectively ensure that each of their students makes at least one year of progress during each year of instruction. Four key dimensions of teaching are at the core of project activities: assessment, classroom management, instructional technologies, and diversity. This handbook was developed as a component to meet the instructional technologies core project activity.
SECTION II

INSTRUCTIONAL TECHNOLOGY AT VCSU
**VCSU Technology Initiatives**

Technology at VCSU has always focused on the improvement of teaching and learning and aligns with the campus strategic plan. The laptop initiative provides students with a unique experience and access to computers any time. In addition to the laptop computers students are provided access to other technology hardware and software to enhance their learning experiences. This type of learning environment empowers students to develop skills important to employers such as the ability to work in a team, problem-solving, communication and interpersonal skills.

A technology rich teaching and learning environment exposes students to a variety of technology tools and applications related to their teaching majors. It allows students to apply their knowledge and learn far more information. Faculty embed technology experiences in all classes to extend their learning from the Educational Technology course provided in the professional education sequence.

**VCSU Technology Services**

VCSU is committed to providing students with quality technology and services. Education is experiencing rapid changes in technology and the development of enhanced learning environments in the K-12 system. Providing a technology rich environment to pre-service teachers at VCSU assists in the transfer of knowledge and skills to their future classrooms. Following is a summary of technology available to students all students:

- Laptop Computers
- Smart Classrooms
- Interactive Whiteboards
- LCD Projectors
- Digital Cameras
- Digital Video Cameras
- Document Scanners
- Interactive Video Services
- Electronic Library Subscriptions
- Personal Web Portal
- Online Learning Management System
- IP Telephony and Unified Messaging
- Web Conferencing
- Class Recordings
- State of the Art software

In addition to the summarized listing above, students in each major are also exposed to various technologies related to their fields of study.

A rich technology environment enables a transformation of nearly all aspects of the learning environment. Students are more involved in the learning process as they use their computers to take notes, conduct research, communicate, create, and solve problems. Students develop electronic portfolios that demonstrate abilities not documented on a resume or transcript. Students, faculty, and staff believe the information technology at VCSU provides a more effective learning environment.
SECTION III
ISTE NETS STANDARDS
ISTE NETS Teacher Standards

1. Facilitate and Inspire Student Learning and Creativity
Teachers use their knowledge of subject matter, teaching and learning, and technology to facilitate experiences that advance student learning, creativity, and innovation in both face-to-face and virtual environments. Teachers:
   a. promote, support, and model creative and innovative thinking and inventiveness
   b. engage students in exploring real-world issues and solving authentic problems using digital tools and resources
   c. promote student reflection using collaborative tools to reveal and clarify students’ conceptual understanding and thinking, planning, and creative processes
   d. model collaborative knowledge construction by engaging in learning with students, colleagues, and others in face-to-face and virtual environments

2. Design and Develop Digital-Age Learning Experiences and Assessments
Teachers design, develop, and evaluate authentic learning experiences and assessments incorporating contemporary tools and resources to maximize content learning in context and to develop the knowledge, skills, and attitudes identified in the NETS•S. Teachers:
   a. design or adapt relevant learning experiences that incorporate digital tools and resources to promote student learning and creativity
   b. develop technology-enriched learning environments that enable all students to pursue their individual curiosities and become active participants in setting their own educational goals, managing their own learning, and assessing their own progress
   c. customize and personalize learning activities to address students’ diverse learning styles, working strategies, and abilities using digital tools and resources
   d. provide students with multiple and varied formative and summative assessments aligned with content and technology standards and use resulting data to inform learning and teaching

3. Model Digital-Age Work and Learning
Teachers exhibit knowledge, skills, and work processes representative of an innovative professional in a global and digital society. Teachers:
   a. demonstrate fluency in technology systems and the transfer of current knowledge to new technologies and situations
   b. collaborate with students, peers, parents, and community members using digital tools and resources to support student success and innovation
   c. communicate relevant information and ideas effectively to students, parents, and peers using a variety of digital-age media and formats
   d. model and facilitate effective use of current and emerging digital tools to locate, analyze, evaluate, and use information resources to support research and learning

4. Promote and Model Digital Citizenship and Responsibility
Teachers understand local and global societal issues and responsibilities in an evolving digital culture and exhibit legal and ethical behavior in their professional practices. Teachers:
   a. advocate, model, and teach safe, legal, and ethical use of digital information and technology, including respect for copyright, intellectual property, and the appropriate documentation of sources
   b. address the diverse needs of all learners by using learner-centered strategies and providing equitable access to appropriate digital tools and resources
   c. promote and model digital etiquette and responsible social interactions related to the use of technology and information
   d. develop and model cultural understanding and global awareness by engaging with colleagues and students of other cultures using digital-age communication and collaboration tools
5. Engage in Professional Growth and Leadership
Teachers continuously improve their professional practice, model lifelong learning, and exhibit leadership in their school and professional community by promoting and demonstrating the effective use of digital tools and resources. Teachers:

a. participate in local and global learning communities to explore creative applications of technology to improve student learning
b. exhibit leadership by demonstrating a vision of technology infusion, participating in shared decision making and community building, and developing the leadership and technology skills of others
c. evaluate and reflect on current research and professional practice on a regular basis to make effective use of existing and emerging digital tools and resources in support of student learning
d. contribute to the effectiveness, vitality, and self-renewal of the teaching profession and of their school and community
1. **Creativity and Innovation**
   Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology. Students:
   a. apply existing knowledge to generate new ideas, products, or processes.
   b. create original works as a means of personal or group expression.
   c. use models and simulations to explore complex systems and issues.
   d. identify trends and forecast possibilities.

2. **Communication and Collaboration**
   Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others. Students:
   a. interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.
   b. communicate information and ideas effectively to multiple audiences using a variety of media and formats.
   c. develop cultural understanding and global awareness by engaging with learners of other cultures.
   d. contribute to project teams to produce original works or solve problems.

3. **Research and Information Fluency**
   Students apply digital tools to gather, evaluate, and use information. Students:
   a. plan strategies to guide inquiry.
   b. locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.
   c. evaluate and select information sources and digital tools based on the appropriateness to specific tasks.
   d. process data and report results.

4. **Critical Thinking, Problem Solving, and Decision Making**
   Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources. Students:
   a. identify and define authentic problems and significant questions for investigation.
   b. plan and manage activities to develop a solution or complete a project.
   c. collect and analyze data to identify solutions and/or make informed decisions.
   d. use multiple processes and diverse perspectives to explore alternative solutions.

5. **Digital Citizenship**
   Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior. Students:
   a. advocate and practice safe, legal, and responsible use of information and technology.
   b. exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity.
   c. demonstrate personal responsibility for lifelong learning.
   d. exhibit leadership for digital citizenship.

6. **Technology Operations and Concepts**
   Students demonstrate a sound understanding of technology concepts, systems, and operations. Students:
   a. understand and use technology systems.
   b. select and use applications effectively and productively.
   c. troubleshoot systems and applications.
   d. transfer current knowledge to learning of new technologies.
SECTION IV

PERFORMANCE INDICATORS AND EXAMPLES
FOR TEACHERS
**NETS Teacher Standards and Performance Indicators**

**STANDARD 1 – Facilitate and Inspire Student Learning and Creativity**

Teachers use their knowledge of subject matter, teaching and learning, and technology to facilitate experiences that advance student learning, creativity, and innovation in both face-to-face and virtual environments.

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<tr>
<th>Performance Indicator 1a: promote, support, and model creative and innovative thinking and inventiveness</th>
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<td><strong>Example strategy that supports Standard &amp; Performance Indicator:</strong> Incorporate existing and emergent technologies to communicate, supplement classroom learning and enhance student engagement with material. (examples of technologies include Twitter, Facebook, Blogging, or Learning Management system tools in products like Blackboard, Desire2Learn, and Moodle)</td>
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<tr>
<th>Performance Indicator 1b: promote, support, and model creative and innovative thinking and inventiveness</th>
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<td><strong>Example strategy that supports Standard &amp; Performance Indicator:</strong> Incorporate project/s requiring students to identify a problem or research question, identify sources that directly address that issue, define an analytical approach, and pose a reasoned solution to the problem. (library digital databases, websites and electronic media are useful resources)</td>
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<tr>
<th>Performance Indicator 1c: promote student reflection using collaborative tools to reveal and clarify students’ conceptual understanding and thinking, planning, and creative processes</th>
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<td><strong>Example strategy that supports Standard &amp; Performance Indicator:</strong> Implement a concept mapping activity in which students demonstrate personalized understanding of complex issues. Another strategy could be to have students develop digital portfolios based on course competencies and demonstrate their understanding through self-assessment and reflection. (applicable software may include Kidspiration, Inspiration, Powerpoint and Keynote)</td>
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<th>Performance Indicator 1d: model collaborative knowledge construction by engaging in learning with students, colleagues, and others in face-to-face and virtual environments</th>
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<td><strong>Example strategy that supports Standard &amp; Performance Indicator:</strong> Engage students in a discussion on an issue that is open to interpretation. The teacher will moderate interaction. (establish a discussion board, online forum, video conference, blog, wiki, or in-class debate)</td>
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STANDARD 2 – Design and Develop Digital-Age Learning Experiences and Assessments
Teachers design, develop, and evaluate authentic learning experiences and assessments incorporating contemporary tools and resources to maximize content learning in context and to develop the knowledge, skills, and attitudes identified in the NETS•S. Teachers:

Performance Indicator 2a: design or adapt relevant learning experiences that incorporate digital tools and resources to promote student learning and creativity

Example strategy that supports Standard & Performance Indicator:
Adapt traditional assignments and activities to apply contemporary tools, or embed in the curriculum the use of diverse technologies to enhance the standard curriculum. (examples might include using Photoshop & a tablet/stylus to adapt a drawing assignment or incorporating Google Earth and GPS technology to illustrate spatial relationships in Geography)

Performance Indicator 2b: develop technology-enriched learning environments that enable all students to pursue their individual curiosities and become active participants in setting their own educational goals, managing their own learning, and assessing their own progress

Example strategy that supports Standard & Performance Indicator:
Engage the students in their own learning by establishing a student-generated project in which they define their own objectives, methodologies, outcomes and assessment. Students will develop their own rubrics and engage in self-assessment. (useful tools include Rubistar, electronic grading system, journaling and peer review)

Performance Indicator 2c: customize and personalize learning activities to address students’ diverse learning styles, working strategies, and abilities using digital tools and resources

Example strategy that supports Standard & Performance Indicator:
Differentiate instruction for diverse learners by incorporating scaffolding strategies that effectively support different learning styles. Provide multiple methods for students to demonstrate understanding of content and concepts. (TeacherTube, podcasts, vodcasts, written reports and portfolios)

Performance Indicator 2d: provide students with multiple and varied formative and summative assessments aligned with content and technology standards and use resulting data to inform learning and teaching

Example strategy that supports Standard & Performance Indicator:
Assess student outcomes with a variety of measures, which account for both student learning styles and effective technologies. Adapt instruction and assessment based on observed outcomes. (examples may include personal response systems, student blogs, Rubistar rubric generator, portfolios)
STANDARD 3 – Model Digital-Age Work and Learning
Teachers exhibit knowledge, skills, and work processes representative of an innovative professional in a global and digital society. Teachers:

| Performance Indicator 3a: demonstrate fluency in technology systems and the transfer of current knowledge to new technologies and situations |
| Example strategy that supports Standard & Performance Indicator: |
| Actively employ technology-literacy in a day-to-day environment and demonstrate an ability to adopt new technologies. (dual-platform operating systems, email, grade software, general office applications, internet applications) |

| Performance Indicator 3b: collaborate with students, peers, parents, and community members using digital tools and resources to support student success and innovation |
| Example strategy that supports Standard & Performance Indicator: |
| Establish a digitally connected community that extends beyond the classroom, to facilitate student learning and success. (BlackBoard, D2L, PowerSchool, online library systems, social networking sites such as Ning, Facebook, Wikis, etc.) |

| Performance Indicator 3c: communicate relevant information and ideas effectively to students, parents, and peers using a variety of digital-age media and formats |
| Example strategy that supports Standard & Performance Indicator: |
| Utilize digital tools to inform and educate constituencies beyond the classroom of urgent, interesting or exciting developments. (listserves, Twitter, NotiFind, digital newsletters, podcasts, online video and images of student-produced artifacts, digital portfolios) |

| Performance Indicator 3d: model and facilitate effective use of current and emerging digital tools to locate, analyze, evaluate, and use information resources to support research and learning |
| Example strategy that supports Standard & Performance Indicator: |
| Use digital tools to assist in development of critical thinking and problem solving. (library databases and resources, critical analysis of web sites, research activities, presentation software, turnitin) |
**STANDARD 4 – Promote and Model Digital Citizenship and Responsibility**
Teachers understand local and global societal issues and responsibilities in an evolving digital culture and exhibit legal and ethical behavior in their professional practices.

**Performance Indicator 4a:** advocate, model, and teach safe, legal, and ethical use of digital information and technology, including respect for copyright, intellectual property, and the appropriate documentation of sources

**Example strategy that supports Standard & Performance Indicator:**
Incorporate in all assignments the expectations of academic integrity and protection of intellectual property. Follow documentation/source protocols for employing copyrighted material and proper citation to avoid plagiarism. (turnitin, copyright and fair use guidelines, standardized citation formats for MLA and/or APA)

**Performance Indicator 4b:** address the diverse needs of all learners by using learner-centered strategies and providing equitable access to appropriate digital tools and resources

**Example strategy that supports Standard & Performance Indicator:**
Commit to learner-centered teaching strategies that promote student creativity and use of alternative digital tools and media to demonstrate learning. (Personal learning contracts, options for varied digital tools and software, open source software, and cooperative learning projects)

**Performance Indicator 4c:** promote and model digital etiquette and responsible social interactions related to the use of technology and information

**Example strategy that supports Standard & Performance Indicator:**
Discuss appropriate etiquette with digital tools and potential issues related to irresponsible use. Acceptable use policies could also be discussed. Instructors should engage in digital communication with students and moderate communication between students. (example social tools might be BlackBoard discussion boards, Wimba tools, Blogs, Wikis, Ning, etc.)

**Performance Indicator 4d:** develop and model cultural understanding and global awareness by engaging with colleagues and students of other cultures using digital-age communication and collaboration tools

**Example strategy that supports Standard & Performance Indicator:**
Students and Faculty in different disciplines can use the video conferencing technology to conduct observations or practicum experiences, host guest speakers, webinars, podcasts/vodcasts, or virtual tours. One example might be Spanish classes connecting and interacting with classes at partner institutions in Mexico. (Wimba Live Classroom, Interactive Video Network, Skype, Pronto, etc.)
STANDARD 5 – Engage in Professional Growth and Leadership
Teachers continuously improve their professional practice, model lifelong learning, and exhibit leadership in their school and professional community by promoting and demonstrating the effective use of digital tools and resources.

**Performance Indicator 5a:** participate in local and global learning communities to explore creative applications of technology to improve student learning

**Example strategy that supports Standard & Performance Indicator:**
Determine content area specific learning communities for pre-service or in-service teachers. Have students and faculty take part when possible. In circumstances where this is not possible, establish a learning community for all content area majors. (Example learning community software could be BlackBoard Organizations, Ning, online blogs, etc.)

**Performance Indicator 5b:** exhibit leadership by demonstrating a vision of technology infusion, participating in shared decision making and community building, and developing the leadership and technology skills of others

**Example strategy that supports Standard & Performance Indicator:**
Faculty should participate in professional development provided by the VCSU Office of Instructional Design on emerging technology software and tools for the classroom. In addition to professional development instructors may submit mini grant proposals through ITC and the Office of Instructional Design for funding of instructional technology testing.

**Performance Indicator 5c:** evaluate and reflect on current research and professional practice on a regular basis to make effective use of existing and emerging digital tools and resources in support of student learning

**Example strategy that supports Standard & Performance Indicator:**
Faculty could register for professional journals, online communities or e-publications like eSchool News to increase their knowledge of emerging instructional technology and related research. Faculty should also use available technology when appropriate to enhance teaching and support student learning.

**Performance Indicator 5d:** contribute to the effectiveness, vitality, and self-renewal of the teaching profession and of their school and community

**Example strategy that supports Standard & Performance Indicator:**
Faculty could encourage teacher education students to be active in professional organizations and professional development opportunities for life long learning. Faculty should also promote professional development as a participant or as presenter.
SECTION V

PERFORMANCE INDICATORS AND EXAMPLES
FOR STUDENTS
NETS Student Standards and Performance Indicators

STANDARD 1 - Creativity and Innovation
Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.

Performance Indicator 1a: apply existing knowledge to generate new ideas, products, or processes.

Example strategy that supports Standard & Performance Indicator:
Students will Use digital media in presentations:
- Powerpoint Slide Shows
- Digital Slide Shows
- iMovies
- Googledocs

Performance Indicator 1b: create original works as a means of personal or group expression.

Example strategy that supports Standard & Performance Indicator:
Students will be able to Generate, Design, and Edit Digital Media:
- Design Digital Video
- Garage Band
- Audacity
- Drawing/Graphics Software

Performance Indicator 1c: use models and simulations to explore complex systems and issues.

Example strategy that supports Standard & Performance Indicator:
Students will be able to experience real-world experiences through simulation and modeling.
- Stock Market simulation software
- Texas Instrument Calculator and external data collection sensors
- Use of multiple operating systems through virtual computer software
- National Instruments LabView for programming and building virtual instruments
- Lego software (WeDo, Robolab, and NXT-G)

Performance Indicator 1d: identify trends and forecast possibilities.

Example strategy that supports Standard & Performance Indicator:
Students will be able to locate resources for technology developments:
- Educational Technology Websites and Sources
- Online Journal examples: Instructional Technology Journal Technological Horizons (T.H.E.)
- E-School News article summaries and reactions.

**STANDARD 2 - Communication and Collaboration**
Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.

**Performance Indicator 2a:** interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.

**Example strategy that supports Standard & Performance Indicator:**
Students will be able to use online collaborative tools:
- Ability to use blogs, Google docs, wikis, teacher tube, podcasts
- WebQuests
- Discussion Forums
- Professional Learning Community

**Performance Indicator 2b:** communicate information and ideas effectively to multiple audiences using a variety of media and formats.

**Example strategy that supports Standard & Performance Indicator:**
Students will be able to design and communicate ideas:
- Present information to audiences – PowerPoint, audio, video, text
- Utilize principles of designing effective communication-Visual and Text Elements
- Producing digital media to communicate a specific idea

**Performance Indicator 2c:** develop cultural understanding and global awareness by engaging with learners of other cultures.

**Example strategy that supports Standard & Performance Indicator:**
- Videoconferencing
- Skype (audio/video conferencing tool)
- Wimba Pronto/Live Classroom
- Web pages

**Performance Indicator 2d:** contribute to project teams to produce original works or solve problems.

**Example strategy that supports Standard & Performance Indicator:**
- Cross Curricular - Multiple Content Areas /Project Based learning /Developing Thematic Units
- Virtual Field Trips
- WebQuests
**STANDARD 3 - Research and Information Fluency**
Students apply digital tools to gather, evaluate, and use information.

**Performance Indicator 3a:** plan strategies to guide inquiry.

**Example strategy that supports Standard & Performance Indicator:**
Awareness of soft technologies and software that will aid them
- Concept Mapping/Venn Diagramming/KWL
- Kidspiration, Inspiration
- Brainstorming and collaboration software

**Performance Indicator 3b:** locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.

**Example strategy that supports Standard & Performance Indicator:**
- Conduct Effective Internet searches
- Internet Search Techniques-search engine narrow the topic
- Excel spreadsheets and charts
- Use websites as research for lesson plans and other assignments

**Performance Indicator 3c:** evaluate and select information sources and digital tools based on the appropriateness to specific tasks.

**Example strategy that supports Standard & Performance Indicator:**
- Identify validity of information on websites: checklist for credibility
- Reliable, accurate, relevant sites
- Select and appropriate software applications

**Performance Indicator 3d:** process data and report results.

**Example strategy that supports Standard & Performance Indicator:**
- Synthesize information collected, identify main points, put together in a logical format and an appropriate presentation
- Slideshows
- Create Web sites
- Flash Animation
- Video presentations
**STANDARD 4 - Critical Thinking, Problem Solving, and Decision Making**
Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

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<tr>
<th>Performance Indicator 4a:</th>
<th>identify and define authentic problems and significant questions for investigation.</th>
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| Example strategy that supports Standard & Performance Indicator: | Problem based learning  
Cars sales project in Algebra-use online calculator  
Each content area has authentic problems that can be researched and discussed using a variety of technology tools and processes. |

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<tr>
<th>Performance Indicator 4b:</th>
<th>plan and manage activities to develop a solution or complete a project.</th>
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| Example strategy that supports Standard & Performance Indicator: | Ongoing weather investigation  
Work in collaborative groups on an assignment and present with a media component  
Use group pages in BlackBoard LMS for group collaboration and assignments. |

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<tr>
<th>Performance Indicator 4c:</th>
<th>collect and analyze data to identify solutions and/or make informed decisions.</th>
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| Example strategy that supports Standard & Performance Indicator: | Conduct research through digital sources in the library or on the internet  
Use data collection software and equipment related to their field of study (examples could include - SPSS, Vernier Instruments, LabView, Excel, Texas Instruments Calculator, etc.)  
Utilize electronic grading and assessment software to make informed decisions about instruction, remediation, and evaluation. |

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<tr>
<th>Performance Indicator 4d:</th>
<th>use multiple processes and diverse perspectives to explore alternative solutions.</th>
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| Example strategy that supports Standard & Performance Indicator: | Utilize a variety of technologies and media to complete an assignment, presentation, delivery of a lesson etc.  
Music students use instruments, recording devices, video and music software in a variety of ways to prepare lessons, read sheet music, and practice with interactive |
- Video cameras and digital media editing tools can be used to analyze sports movement and techniques.

**STANDARD 5 - Digital Citizenship**
Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.

**Performance Indicator 5a:** advocate and practice safe, legal, and responsible use of information and technology.

**Example strategy that supports Standard & Performance Indicator:**
- Develop an acceptable use policy for use in future classrooms
- Discuss and understand School District Privacy Issues-release of student information/picture for public use
- Read and understand the VCSU/NDUS acceptable use policy

**Performance Indicator 5b:** exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity.

**Example strategy that supports Standard & Performance Indicator:**
- Demonstrate effective use of electronic collaboration tools used in online and face-to-face classes (examples could include: BlackBoard, Pronto, social networking software, Blogs, etc.)
- Participation with group projects using technology such as presentations and video
- Promote the use of collaborative tools with faculty and peers

**Performance Indicator 5c:** demonstrate personal responsibility for lifelong learning.

**Example strategy that supports Standard & Performance Indicator:**
- Explore and utilize technology tools beyond the classroom environment
- Develop a mini grant proposal and submit to the VCSU Office of Instructional Design for testing and evaluating emerging technology to enhance student learning
- Attending training outside of the classroom (examples could include, TNT and summer institutes).

**Performance Indicator 5d:** exhibit leadership for digital citizenship.

**Example strategy that supports Standard & Performance Indicator:**
- Actively participate in campus decision making regarding selection and use of instructional technology
- Participate in campus surveys and assist in development of criteria for laptop selection
- Volunteer to participate in advisory committees for instructional technology

**STANDARD 6 - Technology Operations and Concepts**
Students demonstrate a sound understanding of technology concepts, systems, and operations.

**Performance Indicator 6a:** understand and use technology systems.

**Example strategy that supports Standard & Performance Indicator:**
- Develop skills and ability to use different computer platforms and software versions and Operating Systems
- Troubleshoot hardware and software problems
- Develop a basic understanding of different peripheral devices and connections, cables and software necessary to use them.

**Performance Indicator 6b:** select and use applications effectively and productively.

**Example strategy that supports Standard & Performance Indicator:**
- Investigate software titles and evaluate them for quality, functionality and use in instruction (commercial software, open source software, and freeware)
- Determine suitable software and hardware systems necessary to complete specific tasks.

**Performance Indicator 6c:** troubleshoot systems and applications.

**Example strategy that supports Standard & Performance Indicator:**
- Learn how to troubleshoot basic computer connection problems with the internet, printing, connection of peripheral devices, installation of software and drivers.
- Learn basic maintenance operations on the computer to avoid system trouble (examples could include disk defragmenting, data backup, virus scanning, etc.)
- Use help menus and device manuals to discover solutions to problems with hardware and software

**Performance Indicator 6d:** transfer current knowledge to learning of new technologies.

**Example strategy that supports Standard & Performance Indicator:**
- Share knowledge of software and hardware with peers and faculty
- Transfer knowledge of menus and functions between software applications and hardware
- Learn the similarities and differences between common operating systems, software and computer hardware
SECTION VI

GLOSSARY OF TERMS
GLOSSARY

ADA/Americans with Disabilities Act-Section 508—The section of the 1986 ADA Law that contains provisions ensuring that information technology is accessible to people with disabilities.

Animation—A technique in which the artist gives motion to still images by creating and juxtaposing a series of pictures with small, incremental changes from one to the next.

Asynchronous—Not at the same time.

AUP/Acceptable Use Policy—A written document approved by a school district and/or school board, outlining terms and conditions for student/staff use of school district technology, including the Internet and e-mail.

Authority—In judging a work, this refers to the qualifications of the producer, author or editor. (e.g., expertise, reputation, education, etc.).

Bandwidth—The range of frequencies an electronic communications channel can support without excessive deterioration.

Boolean/Boolean search/Boolean operator—A system of logic that, when applied to searches, links search terms with the “operators” AND, OR, and NOT. Boolean operators broaden or narrow the range of a search.

CD-R—Compact disc-recordable. A compact disc on which the user may record information digitally one time and then access it many times.

CD-ROM—Compact disc read-only memory.

CD-RW—Compact disc-rewriteable. A compact disc on which the user may record information digitally many times and access it many times.

Circulation policy—Rules that govern the borrowing of library materials by the patrons.

Clustering—Small groups of workstations or learners in a classroom setting.

Copyright—The exclusive legal rights granted by a government to the owner of intellectual property that protects the copyrighted material from unauthorized duplication, sale, or performance.
**Database**—A collection of information organized for search and retrieval.

**Demographics**—Data on a population group relating to age, gender, education, occupation, income, etc.

**Digital camera**—A camera that produces images in digitized form instead of using photographic film. (Example would be flipvideos, Sony Handycam, Canon Vixeo, etc.)

**Discipline-related tools**—Software or hardware developed for a particular area of study such as computer-aided drafting programs (CADD).

**Document camera**—A video camera mounted on a copy stand to show documents, pictures, graphics, and real objects to groups.

**Download**—To receive a file from one computer directly into another computer.

**Electronic book (e-book)**—Hand-held device roughly the size of a paperback book that typically contains enough memory for 75 to 80 novel-length works.

**Fiber optics**—A transmission medium using spun silicon shaped into threads as thin as human hair. It transmits more signals with higher quality than can metal cables.

**File server**—See Server.

**Firewall**—Intranet software that prevents external users from accessing a proprietary network, while allowing internal users access to external networks.

**Flash drive**—USB minidrive; a form of removable storage device that allows the user to store files outside the computer.

**GPS/Global Positioning System**—A satellite navigation system that was designed for and is operated by the U. S. military, but with a growing number of civilian users. GPS provides specially coded satellite signals that can be processed in a GPS receiver, enabling the receiver to compute position, velocity and time.

**Graphic organizer**—Software used to organize information graphically such as charts, timelines, chain of events, spider maps, Venn diagrams, or storyboards.

**Graphics**—The creation and manipulation of picture images which may be obtained by a variety of means, including web pages, scanning, and digital cameras.

**Graphics software**—Any computer program that enables the user to draw, display and/or manipulate pictures, charts, or graphs that have been scanned, drawn or imported. Many software applications include graphics components.

**Hardware**—The physical component of technology such as the computer, keyboard, mouse,
projector, or camera.

**Information**—A collection of data, facts, intelligence, or knowledge.

**Information literacy**—The ability to recognize the need for information in intelligent decision-making, formulate questions based on those needs, identify potential sources of information, develop successful search strategies, access a variety of sources of information, evaluate, organize, and integrate that new information into existing knowledge, and use it in critical thinking and problem-solving.

**Instant messaging (IM)** —A real-time ongoing text conversation with another person.

**Intellectual freedom**—The right of any person to read or express non-libelous views that may be unpopular or offensive to others as established by the First Amendment to the U.S. Constitution.

**Intellectual property laws**—Laws governing the tangible products of the human mind and intellect that have the legal status of personal property, including works protected by copyright and patented inventions. A person’s ideas are covered as soon as they are recorded or made manifest in some form.

**Interactive Whiteboard (IWB)** - a large interactive display that connects to a computer and projector. A projector projects the computer's desktop onto the board's surface, where users control the computer using a pen, finger or other device. (SmartBoard and Promethian Activboard)

**Internet**—A widely-used worldwide public computer network, initially developed by the U.S. military, that links smaller computer networks and allows users on different computer systems to communicate with one another on a global scale.

**Intranet**—The communication network of computers within an organization, or company, available only to the users within the organization.

**Jigsawing**—A learning strategy in which different class groups work on a part of the whole, not all working on the same part at the same time. The parts are added to each other to form the whole.

**Keyword**—A searchable word in a title, subject, or body of text.

**LAN/Local Area Network**—A network of computers located at one site.

**Macros**—A series of instruction (or mini computer programs) that enable the user to carry out specific tasks when certain key combinations are pressed.

**Mail Merge**—A feature within a word-processing program that enables the user to merge a document with a data file of names and addresses, for the purpose of personalized mass mailings.
Media—Types of information sources or any type of product used as a means of communication or to transmit information or both (e.g., books, compact discs, motion pictures, newspapers, television, videotapes).

Modem/MODulator-DEModulator—A device that allows a computer to connect to the Internet over conventional phone lines.

MP3 (MPEG Audio Layer 3)—A format for compression of audio files to reduce them into more manageable size, especially when using the Internet.

Multimedia—Combined use of media (text, graphics, sound animation, or video) resulting in an artistic presentation of information.

Netiquette—Standards of polite behavior while using the Internet.

Online—Connected to a network of computers, usually the Internet.

OCR/Optical Character Recognition—Software designed to convert text on paper into digital format by scanning a document, which can then be manipulated by using a keyboard.

OPAC/On-line Public Access Catalog—A computerized library catalog that replaces the card catalog and provides for additional search strategies such as keyword.

Operating System—The software that controls and manages all of the functions of a computer that allows it to operate. e.g., Windows XP, DOS and OS2.

PDA/Personal digital assistant—A hand-held device that can be used to store digital information, calculate, telephone, fax, and network. Information can be typed in via a portable keyboard, entered by touching letters on a screen with a stylus, tracing the letters on the screen with a stylus, or downloading information from a computer or another PDA.

Peripherals—Hardware devices such as printers, scanners, external modems or keyboards that are connected to the computer through ports, and through which information can be transferred.

Portfolio—A systematic and organized collection of a student’s work, records of observations, and test results, used to assess student progress and often including some form of self-reflection by the student.

Primary sources—Documents containing firsthand knowledge that has not been interpreted by others, such as a diary, a journal, an interview, or an eyewitness account. See also Secondary sources.

Privacy Issues—Library checkout records are private and should not be shared with a third party without due process of law. However, most AUP’s state that all files and activities
conducted on school machines are not considered private and are subject to viewing by the system administrators.

**Process**—The series of problem-solving actions involved in creating a product

**Product**—The end result of an information inquiry process, such as a written report, speech, or electronic presentation. Also widely known as *Information product*.

**Productivity tools**—Any type of software associated with computers and related technologies that can be used as tools for personal, professional, or classroom productivity (e.g., Microsoft Office).

**Project**—The complete process involved in solving a problem.

**Projection devices**—Hardware designed to project an image from a source such as a computer or VCR to a screen for viewing.

**Query**—See Search queries.

**Reliability**—In judging a work, this has to do with a publisher consistently producing quality products over a long period of time and using support information that has been proven very accurate in the past. (e.g., Gale Research Company, The H.W. Wilson Company, etc.) See also *Authority*.

**Scanner**—A device that converts images, text, or a barcode on a paper page into a digitized format by scanning the printed document with light.

**Search engines**—Applications on the Web that search other Web sites using keyword(s) and then listing those documents where the keywords were found.

**Search queries**—Strings of terms such as keyword, subject, title, or author, linked together with the Boolean operators, AND, OR, NOT, to enable the researcher to conduct online searches for information.

**Secondary sources**—Documents containing information that has been reported, analyzed, or interpreted by individuals who have used primary sources, or other secondary sources for data.

**Server**—A computer that makes services available on a network. A file server enables others to access files, while a Web server is the computer system that makes its Web pages available to others.

**Software**—Computer program or electronic data.

**Spreadsheet**—Software that organizes data as a matrix of rows and columns through which
information can be manipulated through using formulas.

**Storyboard**—A visual representation of the sequential presentation of information to be included in a media product.

**Synchronous**—At the same time.

**Technology**—A man-made tool used to accomplish a task or solve a problem or the use of a body of information and the systematic application of resources to produce outcomes in response to human needs or wants.

**Templates**—Pre-designed layouts for documents that may include font selection, text and graphics boxes, formatting for labels or letterheads. The templates may come standard with a software program, or may be created by the user.

**Truncation** - Use of an asterisk, or other symbol, to take the place of one or more letters in a term in order to search all words that include a root word. (e.g., wom*n for woman or women, farm* for farmer, farming, farms).

**URL/ Uniform Resource Locator**—An address on the World Wide Web that, when typed in the locator bar on a search engine, will bring the user to the desired page on the Internet.

**Virtual Classroom**—A classroom that only exists on the Internet.

**WAN/Wide Area Network**—A network that extends over multiple buildings or sites.

**Web Cams**—Small video cameras, usually mounted on the computer, that allow video conferencing through the Internet.

**Web site**—A page, or group of pages, specified by a network address or URL (Uniform Resource Locator) on the World Wide Web.

**WebQuest**—An inquiry-oriented activity in which most or all of the information used by learners comes from resources on the Internet. The model was developed in early 1995 at SanDiego State University by Bernie Dodge and Tom March.
SECTION VII

REFERENCES
References


North Dakota Standards and Benchmarks: Content Standards Library/Technology Literacy (2003). ND: North Dakota Department of Public Instruction.


SECTION VIII

INSTRUCTIONAL TECHNOLOGY GROUP MEMBERS
### Bush Grant Instructional Technology

#### Group Members

<table>
<thead>
<tr>
<th>Name</th>
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