

Casting the Net of Virtual Education: A Distance Education Plan Resource Analysis Report

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Introduction

Miller-Motte Technical College is conducting a technology change. The change requires standards to help guide all stakeholders. Because Miller-Motte is making a change in the delivery of instruction, overall guiding standards for the program and specific standards for each group of stakeholders are presented to the stakeholders to help ensure the quality of the change. The proposed overall guiding standards have been established by the State Educational Technology Directors Association's National Leadership Toolkit (SETDA, <http://www.setda.org/NLltoolkit/>). This online resource provides information for key areas such as course content and implementation, staffing, management, administration, infrastructure and evaluation must be met by following the established standards. Specific standards for each group of stakeholders are included to help guide and better manage expectations for the change to happen and have national standards for guidance and continued success for the change to be fully implemented and have a positive affect on the institution. Miller-Motte Technical College must show a commitment to the implementation of the technology change, including the continued adherence of following national standards to ensure consistent and successful implementation.

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Overall Guiding Standards (SETDA, <http://www.setda.org/NLltoolkit/>)

I. Course Content and Implementation

- The content of the course is aligned with local, state, and/or national standards.
- The content of the course is equivalent in rigor, depth, and breadth to traditionally delivered courses.
- The course makes the best use of available technologies, instructional strategies and resources to enrich the content.
- The course provides frequent and timely interactions between the students and the distance learning teacher, as well as interactions among the students.
- The course provides ways to assess student participation and achievement of learning goals.
- The learning environment and course materials are universally designed, making them accessible to diverse learners.
- The online course system is easy to use, allowing learners to focus on the course content.

II. Staffing

- The distance learning teacher is fully qualified in the content area being taught.
- The teacher has been trained and is skilled in distance learning pedagogy and is aware of differences from typical instruction.
- The school designates a distance education coordinator, who manages technical and administrative issues and serves as the primary contact person between the school, the students, and the course provider.

III. Management, Administration and Infrastructure

- The course provider has adequate services necessary to deliver the program of instruction.
- Student rights and responsibilities are recognized and upheld within the course structure.
- The course provider and distance learning teachers adhere to and communicate copyright, as well as other laws and guidelines, pertaining to the distribution and ethical use of all resources.
- School personnel and students are notified, in advance, of course requirements (including time and participation requirements), technical requirements and the skills needed to be successful in distance learning.

IV. Evaluation

- Courses are evaluated on a regular basis to determine whether they are achieving their objectives. Improvements to the courses are made based on these evaluations.
- Teacher performance evaluation is conducted no less frequently than once a year.
- Student assessments are aligned with Miller-Motte course standards and national standards.

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Standards Breakdown for Instructors (ITSE, http://cnets.iste.org/teachers/t_stands.html)

I. Technology Operations and Concepts

- Instructors demonstrate a sound understanding of technology operations and concepts.

Instructors: (information provided via survey)

- Demonstrate introductory knowledge, skills, and understanding of concepts related to technology
- Demonstrate continual growth in technology knowledge and skill to stay abreast of current and emerging technologies.

II. Planning and Designing Learning Environments and Experiences

- Instructors plan and design effective learning environments and experiences supported by technology.

Instructors: (information provided via survey)

- Design appropriate learning opportunities that apply technology-enhanced instructional strategies to support the diverse needs of learners.
- Apply current research on teaching and learning with technology when planning learning environments and experiences.
- Identify and locate technology resources and evaluate them for accuracy and suitability.
- Plan for the management of technology resources within the context of learning activities.
- Plan strategies to manage student learning in a technology-enhanced environment.

III. Teaching, Learning and the Curriculum

- Instructors implement curriculum plans that include methods and strategies for applying technology to maximize student learning.

Instructors: (information provided via survey)

- Facilitate technology-enhanced experiences that address content standards and student technology standards.
- Use technology to support learner-centered strategies that address the diverse need of students.
- Apply technology to develop students' higher order skills and creativity.
- Manage student learning activities in a technology-enhanced environment.

IV. Assessment and Evaluation

- Instructors apply technology to facilitate a variety of effective assessment and evaluation strategies.

Instructors: (information provided via survey)

- Apply technology in assessing student learning of subject matter using a variety of assessment techniques.
- Use technology resources to collect and analyze data, interpret results, communicate findings to improve instructional practice and maximize student learning.
- Apply multiple methods of evaluation to determine students' appropriate use of technology resources for learning, communication, and productivity.

V. Productivity and Professional Practice

- Instructors use technology to enhance their productivity and professional practice.

Instructors: (information provided via survey)

- Use technology resources to engage in ongoing professional development and lifelong learning.
- Continually evaluate and reflect on professional practice to make informed decisions regarding the use of technology in support of student learning.
- Apply technology to increase productivity.
- Use technology to communicate and collaborate with peers, parents, and the larger community in order to nurture student learning.

VI. Social, Ethical, Legal and Human Issues

- Instructors understand the social, ethical, legal, and human issues surrounding the use of technology.

Instructors: (information provided via survey)

- Model and teach legal and ethical practice related to technology use.
- Apply technology resources to enable and empower learners with diverse backgrounds, characteristics, and abilities.
- Identify and use technology resources that affirm diversity.
- Promote safe and healthy use of technology resources.
- Facilitate equitable access to technology resources for all students.

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Standards Breakdown for Administrators (ISTE, http://cnets.iste.org/administrators/a_stands.html)

I. Leadership and Vision

- Educational leaders inspire a shared vision for comprehensive integration of technology and foster an environment and culture conducive to the realization of that vision.

Educational leaders:

- Facilitate the shared development by all stakeholders of a vision for technology use and widely communicate that vision.
- Maintain an inclusive and cohesive process to develop, implement, and monitor a
- Dynamic, long-range, and systemic technology plan to achieve the vision.
- Foster and nurture a culture of responsible risk-taking and advocate policies promoting
- Continuous innovation with technology.
- Use data in making leadership decisions.
- Advocate for research-based effective practices in use of technology.
- Advocate, on the state and national levels, for policies, programs, and funding opportunities that support implementation of the district technology plan.

II. Learning and Teaching

- Educational leaders ensure that curricular design, instructional strategies, and learning environments integrate appropriate technologies to maximize learning and teaching.

Educational leaders:

- Identify, use, evaluate, and promote appropriate technologies to enhance and support
- Instruction and standards-based curriculum leading to high levels of student achievement.
- Facilitate and support collaborative technology-enriched learning environments conducive to innovation for improved learning.
- Provide for learner-centered environments that use technology to meet the individual and
- Diverse needs of learners.
- Facilitate the use of technologies to support and enhance instructional methods that
- Develop higher-level thinking, decision-making, and problem-solving skills.
- Provide for and ensure that faculty and staff take advantage of quality professional learning opportunities for improved learning and teaching with technology.

III. Productivity and Professional Practice

- Educational leaders apply technology to enhance their professional practice and to increase their own productivity and that of others.

Educational leaders:

- Model the routine, intentional, and effective use of technology.
- Employ technology for communication and collaboration among colleagues, staff, parents, students, and the larger community.
- Create and participate in learning communities that stimulate, nurture, and support faculty and staff in using technology for improved productivity.
- Engage in sustained, job-related professional learning using technology resources.
- Maintain awareness of emerging technologies and their potential uses in education.
- Use technology to advance organizational improvement.

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Technology Standards for Students* (ITSE,
http://cnets.iste.org/students/s_stands.html)

I. Basic operations and concepts

- Students demonstrate a sound understanding of the nature and operation of technology systems.
- Students are proficient in the use of technology.

II. Social, ethical, and human issues

- Students understand the ethical, cultural, and societal issues related to technology.

- Students practice responsible use of technology systems, information, and software.
- Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.

III. Technology productivity tools

- Students use technology tools to enhance learning, increase productivity, and promote creativity.
- Students use productivity tools to collaborate in constructing technology-enhanced models, prepare publications, and produce other creative works.

IV. Technology communications tools

- Students use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.
- Students use a variety of media and formats to communicate information and ideas effectively to multiple audiences.

V. Technology research tools

- Students use technology to locate, evaluate, and collect information from a variety of sources.
- Students use technology tools to process data and report results.
- Students evaluate and select new information resources and technological innovations based on the appropriateness for specific tasks.

VI. Technology problem-solving and decision-making tools

- Students use technology resources for solving problems and making informed decisions.
- Students employ technology in the development of strategies for solving problems in the real world.

***information provided via survey**

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Policies

Any technology usage must have policies to help regulate and maintain control. Within Miller-Motte's technology implementation, current policies must be reviewed and amended to better control the integration of online courses into their pedagogical delivery system. Currently Miller-Motte has established policies related to their technology infrastructure. These policies need to be updated to reflect distance education and the expectations that will be involved with all stakeholders. The policies should be a required component for review and agreement by all stakeholders.

Current Policies:

Acceptable Use Policy: Wherein it is stated the proper use of computers and their networks for education and research. Stated within the policy is warning against usage of copyrighted and obscene materials. Consequences are stated under a privilege addendum which describes the suspension of computers for inappropriate usage.

Network Etiquette Policy: Wherein it is stated appropriate behavior within the realm of telecommunications. A limit on inappropriate computer behavior is listed

including illegal acts and explicit explanation of what is correct behavior and incorrect behavior.

Warranty Policy: Wherein it is stated, Miller-Motte Technical College makes no warranties of any kind toward personal damages suffered due to the use of the internet.

Security Policy: Wherein it is stated the responsibility of users to follow procedures for correctly logging in and out of the computer network; also the warning of unauthorized use of user accounts and the resulting consequences.

Vandalism Policy: Wherein it is explained the definition of vandalism and the resulting consequences of the physical computer infrastructure.

Proposed Additions and Addendums to Current Policies:

The adoption of a technological change will result in the need for reevaluation of current policies and the addition of new policies which will be needed to facilitate the technological change. Many of the new policies relate to specific needs concerning distance education and its effects on the stakeholders. The policies will focus on the needed change and relate expect guidelines to the users.

ADA Compliance Policy: Miller-Motte must create a policy concerning accessibility standards related to the access and usage of distance education software. Miller-Motte will be using Page Out, a course management system by McGraw-Hill publishers. Within the Page Out system is an integrated ADA policy. Instructors may enable an “accessible” mode for special needs students using special tools to display web content.

Addition to Security Policy: Miller-Motte should adjust the security policy to include notice that the Page Out System does not collect cookie information; however, submitted information can be used for inquiry responses and product solicitation.

Intellectual Property Policy: Miller-Motte should add an Intellectual Property Policy which explains ownership of created material using the Page Out system from McGraw-Hill Publishers. Administration must explain who will be the explicit owners of course materials that are used at Miller-Motte.

Copyright Policy: While Miller-Motte includes mention of copyright law; a policy would help define what copyright is and also layout specific rules and regulations that many people will need to become aware of.

System Administration Policy: While Miller-Motte includes mention of a system administrator; no policy is included describing the role of the system administrator and his/her role concerning the upkeep and overall administration of the technology infrastructure. Also the policy will need to include administration of the distance education software, Page Out by McGraw-Hill.

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Hardware

All seven computer lab classrooms are equipped with approximately thirty computers of various designs. The library is equipped with eight computers. All faculty and staff have their own computer in their office and there is one server, which is not accessible to any unauthorized users. All workstations (approximately 250 total) are password-protected and private computer access is available to both students and employees Monday through Thursday 8:00 am until 10:00 pm, Friday 8:00 am until 5:00 pm and Saturday 9:00 am until 1:00pm. The following table includes all of the hardware components of those machines.

Computers:

# of Machines	Make/Model	OS	RAM	CPU Type	CPU Speed	Hard Drive	Antivirus
7	Dell G60	XP Pro	256 MB	Celeron	1.8 GHz	10 GB	Norton Antivirus
6	HP Vectra 400m	XP Pro	256 MB	P III	1.8 GHz	10 GB	Norton Antivirus
4	Compaq Desk Pro	XP Pro	128 MB	Celeron	733-800 MHz	10 GB	Norton Antivirus
24	Dell Optiplex 160 L	XP Pro	256 MB	Celeron	2.0 GHz	30 GB	Norton Antivirus
24	Dell Optiplex 160 L	XP Pro	256 MB	Celeron	2.0 GHz	30 GB	Norton Antivirus
13	HP Vectra 400m	XP Pro	128 MB	P III	733-800 MHz	10 GB	Norton Antivirus
11	Compaq Desk Pro	XP Pro	128 MB	Celeron	733-800 MHz	10 GB	Norton Antivirus
16	Dell Optiplex 160 L	Windows 2000	512 MB	Celeron	1.8 GHz	30 GB	Norton Antivirus
8	Dell Optiplex 160 L	XP Pro	256 MB	Celeron	2.0 GHz	30 GB	Norton Antivirus

Server:

- Used for file server, printer server, web applications and domain controller

Quantity	Make/ Model	OS	RAM	CPU	RAID Configuration	Hard Drive	Antivirus	NIC
1	HP Net Server IC 2000	MS Server 2000	1.2 GB	Dual 800 MHz P IIIs	3 Hard Disk, RAID-5	40 GB RAID	NAV	Linksys EG1032

Peripherals:

# of Machines	Type	Model
7	Printer	HP LaserJet 2100

Back-Up Configuration:

- All hardware is backed-up using the HP SureStore DAT 40 version 5.0.21. The last recovery test date was February 1, 2005.

Software

- Each computer has a limited number of software applications, all with volume licensing.

Function	Application
Office Productivity	Microsoft Office XP 2002
E-mail	MS Outlook
Database	MS Access
Accounting	Integrated Accounting
Program Management	MS Project 2000
Internet	Explorer 6.0
Web development	Microsoft FrontPage

Back-Up Configuration:

- All software is backed-up using Veritas version 8.1. The personnel responsible for that task is the Network Administrator, Steve Rossiter. The backed-up paths are C: & D:. Full normal data back-ups are regularly scheduled to occur every Monday through Thursday. A full system back-up is scheduled to occur every Friday and tapes are rotated daily.

Network

Hubs / Switches:

Make/Model	Speed	Location	Total Ports
Dell Power Connect	100MB	Server Room	24

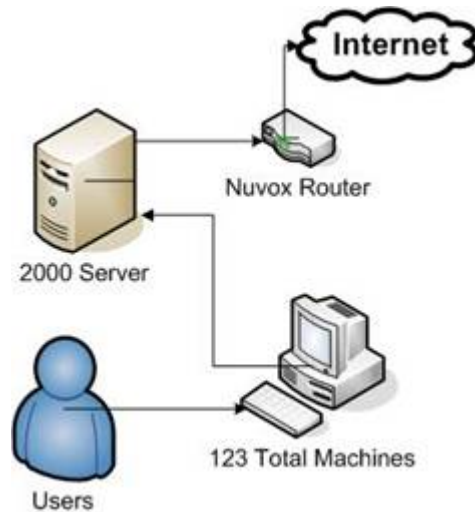
Router:

Make/Model	Internal IP	Purpose	Remote Access
Cisco 1700	Yes	Connection to corporate	Yes

Internet Connection Hardware:

Make/Model	Service Type	IP Type	Speed	Purpose
Nuvox	DSL	Managed	T1	Student Access

Network Diagram:



Human Resources

There are currently 35 full-time and 20 part-time faculty members, 30 full-time and 20 part-time staff members and approximately 750 students at MMTC. The following table identifies the individuals who will primarily be involved in the implementation of the distance education plan and their current responsibilities.

Responsibility	Individual(s)	Status
Setting priorities, recommending budget items and establishing policies and procedures	Computer Committee (Ashley Wallace & Steve Rossiter)	Full-time Faculty (Wallace) Floater: Both F/T faculty and staff (Rossiter)
Establishing the future direction of technology usage in the organization	Computer Committee	Full-time Faculty: Wallace Floater: Both faculty and staff (Rossiter)
Managing the network, server, user accounts and backups	Steve Rossiter	Floater
Ensuring individual workstations are properly configured and are running properly	Steve Rossiter	Floater
Ensuring that the database is accessible to users, remains secure and is running	Steve Rossiter, Rob Fogel and Jim White	Floater (Rossiter), Corporate staff (Fogel & White)
Ensuring that backups are executed and are verified, restoration tasks are performed and that proper files are being included in backups	Steve Rossiter & Jim White	Floater (Rossiter), Corporate staff (White)
Resolving day-today technology issues	Steve Rossiter	Floater
Establishing the direction and functionality of the Web site and administering basic content updates to the intranet	Mary Westbrook	Floater

Setting up and terminating e-mail accounts, resetting passwords, etc	JB Kennedy	Corporate Staff
Tracking software usage and keeping records to ensure software license compliance	Rob Fogel	Corporate Staff
Overseeing technology skills and training	Not Applicable	

Facilities

MMTC is presently operating in 16,000 square foot facility located at 5000 Market Street in Wilmington, NC. This facility houses seven computer lab classrooms, teaching labs, one library, faculty and staff offices, and a lounge area. Each classroom has an average maximum capacity of forty. The computer lab/classrooms are open to students when class is not in session. Classes are held in the morning between 10:00am-2:00pm and 6:00pm-10:00pm Monday through Thursday. The building is open on Friday from 8:00am-5:00pm and Saturday 9:00am-1:00pm. During the week students, faculty and staff have access to computers and printing services in open classrooms, offices and the library.

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Usage of Existing Technology Resources

Faculty & Staff

Currently the existing technology is being used by faculty and staff primarily for the purposes of browsing the internet, checking email and word processing. If the faculty member is teaching class using specific software (i.e. Microsoft Access) then they also use those applications for instructional purposes.

One faculty member, Mary Westbrook, is currently using the McGraw-Hill PageOut software to teach a web-enhanced Document Processing class. The program comes fully-equipped with instructional course content material, so for the purposes of her class she does not develop any additional material.

Students

Currently students use the computer lab/classrooms and library workstations to browse the internet for personal and research purposes. Students also complete their class assignments which could include word processing, database development, presentation development, etc.

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What is and What Should Be

Current Situation

Human Resources: A technology skills assessment was conducted that gave evidence to a lack of technology-based skills among faculty and staff beyond those required to teach the classes that are offered. According to the guiding standards, instructors should demonstrate continual growth in technology knowledge and skill to stay abreast of current and emerging technologies. The survey results indicate that familiarity with online course tools and web development is minimal. Faculty are currently using basic Microsoft Office products (Excel, Access, Word and PowerPoint) and accounting software. Interviews and observations of faculty and staff members also indicated that there was a lack of understanding with regards to distance education pedagogy. As a benefit of being an employee, the administration offers free classes, but few take advantage of this opportunity because of time constraints and lack of interest.

Technology Resources: The technology resources at MMTC are adequate for the purposes by which they are currently being utilized. The quantity of computer workstations, peripherals, connectivity and the type of machines that are available do meet the current needs of faculty, staff and students according to the survey results.

Facilities: Currently the facilities at MMTC are adequate for the number of students, faculty and staff that are currently involved with the school. The ratio of faculty to computer is 1:1 and student ratios are 1:5. Over the past two years the ratio of students to computers has changed from 1:2. However, the school is growing in the number of newly enrolled students exponentially, so it is conceivable that this facility will not be adequate after a relatively short time period.

Students: Miller-Motte Technical College uses its resources (computers, software, etc.) to teach basic computing skills to their students, beyond browsing the internet and checking e-mail. The classrooms are usually crowded and post-graduation survey data confirms this as a reason for frequent absenteeism. Many students also travel from 30 minutes to 1 hour to come to class three days every week. Students currently have only two options for scheduling classes: 10:00am-2:00pm or 6:00-10:00pm. This also creates problems for some students because of the lack of flexibility in class scheduling. A student resource/skills inventory provided evidence that the majority of students currently have the technology resources within their homes, which would be required of someone in a distance education class. The survey indicated that there is motivation and interest in participating in this change. Also students show on the survey that technology skills are very good, especially, in online navigation and word processing. However, web page creation, database, and spreadsheet knowledge shows a low mastery of skills.

Future Situation

Human Resources: In order to develop and maintain a distance education class, more experienced employees need to be hired and existing employees need additional training in the fundamentals of teaching distance education. Training should also include establishing proficiency with web development

software (i.e. FrontPage, Dreamweaver), as well as, graphic and image editing software (i.e. Photoshop, Flash).

Technology Resources: In order to implement a distance education plan, MMTC will need to purchase an additional server or server space to house the course management system software, which would also need to be purchased or licensed. A laptop program will be implemented to aid students who may not have the technical resources to take an online course. Other peripherals which would aid in the development of course materials include digital media equipment such as a camera or camcorder. Needed applications include web development and image/graphic editing software such as Macromedia MX suite that includes both web development software (Dreamweaver), image editing software (Fireworks) and graphic/animation developing software (Flash).

Facilities: The facilities at MMTC are adequate for the purposes of this change, which may actually slow the need for increasing space once students are given the option of taking distance education classes versus coming to the school.

Students: The students at MMTC would be assessed for their compatibility with online learning (technology skills/resources, self-motivated, etc) and must meet the standards that are set forth by the administration in order to take the course. Once students are enrolled in online courses, there will be less need for travel and more flexibility in course scheduling. These benefits should also aid in reducing attrition rates and absenteeism with regards to less crowded classrooms for those who are taking traditional courses at school.

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