

**Year One Interim Report of the Project M³ -
Preparing Tomorrows Teachers to use Technology**

Prepared for

**College of Education
Wichita State University**

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Year One Interim Report of the Project M³ - Preparing Tomorrow's Teachers to Use Technology

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Wichita State University**

Purpose of the Year 1 Interim Report

The primary purpose of the Year 1 Project M³ - Preparing Tomorrow's Teachers to Use Technology Report is to present findings related to Project goals and objectives established for the first of three years of operation and to report levels of change that occurred among Project participants. Where possible, comparisons have been made between baseline measures established at the start of the grant period and results obtained at the end of Year 1.

The Year 1 evaluation report covers Project M³ Grant activities that occurred between June 2000 and May 2001. A detailed Project M³ Management and Evaluation Plan was developed for Year 1 of the grant and appears in Appendix A.

Background Information

In the Wichita State University (WSU) College of Education (COE), early technology efforts resulted in the availability of personal computers for each faculty member and a COE 20-station computer lab. The COE maintains and staffs the computer lab for student and faculty use in its main building, the Corbin Education Center. All faculty members have networked/Internet-connected computers in their offices. Each department in the college has recently purchased portable projectors and laptops with state funds.

Within the past two years the college has focused efforts on increasing the technology access as well as skills of faculty, staff, and students. As part of this effort, the college completed

major technology initiatives including: (a) the development of a technology mission, vision, and commitments document that incorporates recent International Society for Technology in Education Standards (ISTE, 2000) as well as current and draft standards of the National Council for Accreditation of Teacher Education (NCATE, 2001); (b) completion of three technology needs assessments conducted independently by the College of Education and the university that yielded consistent results; and (c) the development and implementation of a one-year U. S. Department of Education Capacity Building grant, Expanding Curriculum Integration through Technology Education (EXCITE). All of these efforts produced forward technology movement in the college.

The needs assessments conducted in 1999 in the COE indicated that the faculty and staff are primarily self-taught technology users who are quite comfortable with the basics of word processing and e-mail but who do not use technology to any great extent in their classroom teaching. It was also apparent that faculty did not expect students to use technology in meaningful ways to learn course content. However when asked, over 50% of the faculty identified 18 different technologies that they felt had either "somewhat high" or "high" potential for instructional impact.

The WSU Center for Teaching and Research Excellence, found similar results in an assessment of technology needs of WSU faculty. The Center assessment made it clear that faculty, university-wide, desire support to add technology resources to their courses.

Finally, a self-assessment of WSU and COE technology readiness was conducted using the School Technology and Readiness, or STaR Chart: A Self-Assessment Tool for Colleges of Education (CEO Forum, 2000). This instrument also indicated a need for future technology

training for COE faculty. The STaR Chart revealed a composite picture of a university and COE operating in the "Early" and "Developing" levels of readiness but anxious and excited about locating and implementing resources to move to the two higher levels of readiness, "Advanced" and "Target."

During this time, a statement outlining the vision, mission, and goals was developed to guide efforts along with the needs assessments. This document states, "The vision for the College of Education at Wichita State University is a technologically astute academic culture... in which students, faculty, staff, alumni, and the community work together to... enhance learning... through modeling and integration of appropriate technologies..." (College of Education, 2000).

The M³ Project

Project M³: Models, Mentors, and Mobility is a three-year project funded for over \$1.1 million by a Preparing Tomorrow's Teachers to Use Technology (PT3) grant from the United States Department of Education. Over the grant period, Project M³ will focus on preparing COE pre-service teacher education students to use technology in educational settings.

Project M³ is based on three basic beliefs. First, pre-service teachers must see **Models** of meaningful methods to integrate technology into their subjects to help students reach standards of achievement. Second, pre-service teachers need faculty or student **Mentors** who know and understand technology and who are already using technology effectively. Finally, we must bring technology to students rather than the students to technology and thus overcome technology **Mobility** problems. An important part of the M³ Grant includes the use of mobile computing as a method of engaging students and teachers in innovative applications of technology in instruction.

Five K-12 Partner Schools are included in the grant. The K-12 partners include a comprehensive high school, an alternative high school, a middle magnet school, a parochial elementary school, and an inner city elementary school. All public schools are a part of Unified School District 259, Wichita Public Schools, and the parochial school is a part of the Wichita Catholic Diocese. The State of Kansas average for economically disadvantaged students attending a school is 31%, and average percentage of minority enrollment is 20%. Most of the K-12 Partner Schools are in fairly close proximity to WSU, and traditionally have received a number of pre-service teacher placements for field experiences and student teaching experience. Each of the K-12 partner schools is described below.

North High School (<http://north.usd259.org/>)

North High School is a comprehensive high school serving grades 9-12 located in Wichita's inner city. Fifty-six percent of the students attending North qualify for free or reduced lunch, and 59% of the students are classified as minority.

Table 1. Official Enrollment North High School 2000-2001

Total Enrollment: 1,691			
Males	49 %	American Indian	2 %
Females	51 %	Asian Pacific Islander	6 %
		Black	17 %
Economically disadvantaged students	56 %	Hispanic	34 %
		White	41 %

Mission, Goals, and Programs:

The mission of the North High School Community is to prepare all students with the knowledge and skills to grow into productive and responsible members of society.

The Target Goals from Campus Improvement Plan are:

- Reading
- Writing
- Problem Solving

In addition to the core curriculum, North High School provides students further support through the following programs:

- Cisco Networking Academy Program. The Networking Academy Program features hands-on, project-driven training in high-demand job skills. It consists of a four-semester program on the principles and practice of designing, building, and maintaining networks capable of supporting national and global organizations.
- Biomedical Program. Features a comprehensive high school curriculum focusing on medical career exploration and preparation
- Communities in Schools. This program is funded by the United Way of the Plains, private donations, and government funding. The mission of Communities in Schools is to champion the connection of needed community resources with schools to help young people successfully learn, stay in school, and prepare for life.
- English for Speakers of Other Languages (ESOL). A program consisting of courses in English, Science and Math, which are designed for students whose native language is not English.
- Professional Development Site (PDS). The PDS program is a collaboration between North High School and WSU faculty and staff, integrating intern and teacher learning with instructional programs.
- TV Production Program. Produces feature news programs, interview programs and documentaries for cable TV.

Northeast Magnet High School (<http://www.usd259.com/high/northeast.html>)

Northeast Magnet is an alternative high school program offering specialized curriculums in science-technology, art, and law to students in grades 9-12. The main campus is located in a predominately African American neighborhood but draws students from the entire district. Although only 277 of the students attending Northeast Magnet qualify for free or reduced lunch, 47% are minority.

Table 2. Official Enrollment Northeast Magnet High School 2000-2001

Total Enrollment: 570			
Males	50 %	American Indian	2 %
Females	50 %	Asian Pacific Islander	11 %
		Black	25 %
Economically disadvantaged students	27 %	Hispanic	9 %
		White	53 %

Mission, Goals, and Programs:

The mission of Northeast Magnet High School is to provide a four-year program of studies for students who want to focus their education in Science & Technology; Visual Arts; or Law, Public & Social Services. The instructional programs of the school utilize an interdisciplinary, team-taught approach. Classes allow for and encourage application, field experience, and technology skills. Reading, writing, and research assignments are coordinated so that knowledge and skills students gain in one course are applied in others.

The magnet areas, in conjunction with a humanities core, present an interdisciplinary, integrated curriculum, utilizing state-of-the-art technology and annual projects to produce a focused, well-rounded education. Our goal is to empower students to engage the world creatively, critically, and responsibly.

The Target Goals from Campus Improvement Plan are:

1. All students will demonstrate reasoning, communication, and problem-solving competency in math and across the curriculum.
2. All students will develop effective writing skills.
3. All students will develop effective reading comprehension skills.

During the 2000-2001 school year Northeast Magnet implemented a school-wide, 90-station, individual-sign-in network and acquired Internet access through Roadrunner.

Brooks Magnet Middle School (<http://brooks.usd259.org/>)

Brooks is a middle school magnet with a technology and art theme. It is also located in a predominately African American neighborhood but draws student from throughout the district.

Forty-three percent of the 6-8 grade students attending Brooks receive free or reduced lunch, and 51% are classified as minority.

Table 3. Official Enrollment Brooks Magnet Middle School 2000-2001

Total Enrollment: 688			
Males	50 %	American Indian	2 %
Females	50 %	Asian Pacific Islander	5 %
		Black	39 %
Economically disadvantaged students	43 %	Hispanic	6 %
		White	49 %

Mission, Goals, and Programs:

Our vision is to enhance student learning, with technology as one tool for teaching and learning. We believe all students can learn, exceed expectations, be excited and motivated to learn through technology. Brooks Technology and Arts Magnet envisions using technology in all classrooms to enhance the outcomes of our Campus Improvement Plan and prepare our students and community for a world we cannot yet envision. The Campus Improvement Plan consists of three focus areas: Communication--Vocabulary & Reading Comprehension, Communication--Oral & Written Language and Mathematics.

One of our technology goals is to improve student achievement and expand learning opportunities by integrating technology throughout the curriculum. To reach this goal every student will:

- research on and have opportunities to publish their work on the Internet.
- author multimedia projects based on learner-directed research that includes non-print and primary sources
- maintain an electronic multimedia portfolio throughout their three years that will showcase all of their multiple intelligences through authentic performance assessments.
- use the intranet to remediate, enrich, and improve the use of basic skills with software, which can be individualized to need student's needs
- be able to access student projects from any location (including from home) to enrich and reinforce learning in all classes
- create projects, which utilize research, writing, use of technology, presentation and curriculum skill areas and store them with the use of compact disk technology
- be challenged to used current technology as it is developed to encourage lifelong learning
- have use of innovative materials which will allow the best use of class time while preparing students for the work places of tomorrow including multiple computers in classrooms, video capabilities on intranet, video studio to produce and edit projects, and live television broadcast abilities, both internal and external.
- be able to teach what they have learned to others.

Mueller Elementary School (<http://mueller.usd259.org>)

Mueller Elementary is located in a predominately African American neighborhood in Northeast Wichita but receives busing students from about a third of the elementary schools located within the Wichita School district as a part of a cross busing desegregation program.

Thirty-four percent of the K-5 students attending Mueller qualify for free or reduced lunch, and 29% are classified as minority.

Table 4. Official Enrollment Mueller Elementary School 2000-2001

Total Enrollment: 529			
Males	45 %	American Indian	2 %
Females	55 %	Asian Pacific Islander	1 %
		Black	25 %
Economically disadvantaged students	34 %	Hispanic	2 %
		White	71 %

Mission, Goals, and Programs:

The Campus Improvement Plan guides student learning school wide. Grade 1-5 students are pretested the first week of school and placed into Instructional Skill Groups according to their best learning levels for language arts. Grade 2-5 students are placed into math instructional skill groups to meet their learning needs.

- Teachers teach grade level objectives that tie in with school, district, and state assessment expectations so students grow and develop academically all year long. Teaching strategies are developed by teachers, staff, and parents that help support students reaching their academic expectations.
- Campus Improvement Plan objectives include:
 1. Communication: All students will demonstrate the ability to effectively communicate through oral and written language.
 2. Problem Solving and Critical Thinking: All students will demonstrate improved problem solving abilities in all curricular areas.
- Specifically, K-5 students are pretested the first weeks of school on five reading, writing, and math areas: Basic Reading Level, Graphic Organizers (informational and expository reading). Writing (analytical rating guide), Basic Math Facts, and Math Performance (problem solving, communication, and reasoning). Teachers provide classroom instruction time for students to master these concepts at their appropriate grade levels. At the end of the year, students are post tested in these areas and results are tabulated for individual, classroom, and grade scores.

To meet our students' needs, we have developed our T.E.C. STAR program. T.E.C. STAR stands for *T*eaching *E*very *C*hild *S*cience/*S*panish, *T*echnology, *A*rts/*A*cademics, and *R*eading/*W*riting/*A*rithmetic. Each of these support teachers works closely with our students on a regular basis to provide a concentrated learning time when students are in their classrooms. Students have the advantage of working with teachers who can devote their full attention and planning time to just these areas to make sure students are learning what they need to be successful.

Mueller is pleased to offer a variety of technology pieces to support the learning process.

- The Writing to Read Lab is an IBM computer based phonics program for K-1 students. Students work on reading and writing skills through computer programs,

typing exercises, writing centers, listening tables, and direct one-on-one interaction with the teacher and para.

- The Integrated Learning Systems Lab (ILS) is a computerized program for reading and math based on each individual student's placement.
- The Computer Lab provides time for teachers to take their classrooms to work on the computers for reading, math, social science, and skill reinforcement. It is currently being networked to include Internet connections, software programs for classroom teachers, and research access.
- Computers, cable television, and VCRs have been added to every classroom. We are currently working on our technology plan that allows students to access the Internet in EVERY classroom, make their own video productions through the library media center, and play instructional videos back to every classroom through TVs. Teachers are learning how to use their computers for software, the Internet, and in developing student projects.
- Student TV Broadcasting is our latest project to use our new televisions, VCR's, and cablevision. Students in grades 4/5 have started learning how to make their own TV broadcasts.
- Mueller is working with our partner Streaming Voices.com to provide streaming media on our web page. Our students are producing high quality video, audio, and graphic files from our Student TV Broadcasting, Musical programs, and Kid Pix Slide Shows.
- Our library computer research stations are up and running. Students can now come to the library to look up teacher directed Internet sites for researching.
- To complement students' understanding and appreciation of music, Mueller installed a Music Keyboard Lab complete with adult sized Clavinova keyboards.
- Tonya's Technology Tips is a new feature of our school web site that helps us share what we are learning with students, parents, and teachers.
- Mueller Mindstorms LEGO® Robotics Invention Teams is a unique approach to teaching math and problem solving using technology and the hands-on constructionist approach.

St. Patrick's Elementary (<http://stpatswichita.org/school/>)

St. Patrick's Elementary is a K-8 parochial school that is part of the Wichita Catholic Diocese. Twenty percent of the students attending received free or reduced lunch, and 50% are classified as minority. St. Patrick's school was chosen for the grant due to its limited access to technology.

Table 5. Official Enrollment St. Patrick's Elementary School 2000-2001

Total Enrollment: 215			
Males	45 %	American Indian	0 %
Females	55 %	Asian Pacific Islander	9 %
		Black	1 %
Economically disadvantaged students	20 %	Hispanic	40 %
		White	50 %

Mission, Goals, and Programs

St. Patrick's mission statement: All students will achieve academic success, behave responsibly, and grow in their love of Christ and the Catholic faith.

Overview of the M³ Grant Goals and Objectives

M³ Project goals are displayed graphically in the Logic Map contained in Appendix A. The M³ Project staff and evaluation team utilized the Project Logic Map along with project goals and objectives to evaluate Project activities during Year 1 of the grant. Project M³ directors and evaluators reviewed and updated the Project Management and Evaluation Plan prior to grant implementation. In the Year 1 plan, activities were identified to meet established objectives. In turn, a detailed action plan was written that included a timeline, a person responsible for overseeing the activity, and means by which each objective would be evaluated. The three Project M³ goals are outlined below.

Goal 1 Models. Members of the WSU Teacher Education (TE) faculty, PreK-12 Partner faculty, and Liberal Arts and Sciences (LAS) and Fine Arts (FA) faculty will effectively model the integration of technology into pre-service teacher education and content area coursework, by designing, implementing, and disseminating models of practice.

Goal 2 Mentors. The COE will coordinate the development of a broad-based network of mentors that will provide training and support for TE faculty, LAS and FA faculty, K-12 partners, and pre-service teachers.

Goal 3 Mobility. Project M³ participants will expand student access to technology in classrooms and authentic learning environments by using laptops, wireless networks, and on-line instruction.

Project M³ Evaluation Methodology

The primary purpose of the Project M³ evaluation is to:

- provide information for use in Project improvement.
- provide compelling evidence for stakeholders, including funding agencies, about Project outcomes and impact.
- document the achievement of milestones set for accomplishment of major components of the Project M³ grant.
- provide a model for evaluating a TICG in similar settings.

A long-range evaluation plan was developed to address each of the goals established for the Project M³ grant. Broad evaluation questions were written in order to focus the evaluation on the central themes of the grant and to provide a basis on which findings could be reported. Several models were considered in designing the Project M³ evaluation. The Logic Map developed for the Project includes inputs, intermediate goals, long-range goals, and terminal outcomes. Therefore, elements of the Stufflebeam Context-Inputs-Process-Product (CIPP) model (Madaus, Scriven, & Stufflebeam, 1983) were incorporated into the evaluation design. This model requires that the first dimension of Context be established describing the conditions that exist at the outset of the Project and how those conditions may change over time. Once the context is established, the second dimension, or program Input, is identified to provide the resources necessary to implement the project. Several milestones and target objectives were established as a part of the Project M³ evaluation plan in order to assess whether inputs such as hardware and software, training materials, professional development activities, and field support were provided in a timely and effective manner during Year 1 of the grant.

The third dimension of the CIPP model, Process, looks at the method utilized to achieve the goals of the project. Table 6 presents the Project M³ process. The process element of the project evaluation attempted to document the number and scope of activities implemented during the first year in terms of milestones achieved, workshops conducted, or products produced.

Table 6. WSU Project M³ Methodology/Evaluation Matrix

Project goals	Summative evaluation study questions	Data collection techniques (see codes below)							
		A	B	C	D	E	F	G	H
Goal 1 Models. Members of the WSU TE faculty, PreK-12 Partner faculty, and LAS and FA faculty will effectively model the integration of technology into pre-service teacher education and content area coursework, by designing, implementing, and disseminating models of practice.	Q1a. Did the faculty who experienced the training provided through the grant express higher levels of concurrence with the new standards, materials, and practices involving the infusion of technology in instruction?	X	X	X		X	X	X	
	Q1b. Did the faculty who experienced the training provided through the grant increase their levels of use of technology in their instructional practice?	X	X	X		X	X		
	Q1c. Did the faculty who experienced the training provided through the grant require students to use technology as outlined in the new technology standards, materials, and practices?		X		X			X	X
	Q1d. What new or innovative practices involving technology were developed and communicated as a result of the grant?		X			X	X		
Goal 2 Mentors. The COE will coordinate the development of a broad-based network of mentors that will provide training and support for TE faculty, LA and FA faculty, K-12 partners and pre-service teachers.	Q2a. Did COE M ³ Project personnel identify a broad-based group of Mentors capable of providing quality technology training?					X	X		
	Q2b. Did the Mentors provide training to the COE, LA/FA and K-12 Partners and Pre-service teachers?		X	X	X	X	X		
	Q2c. How effective was the training provided by Mentors?			X		X	X	X	
	Q2d. What was the level of satisfaction among participants regarding their experiences in the Mentoring projects?			X		X	X		
Goal 3 Mobility. Project M ³ participants will expand student access to technology in classrooms and authentic learning environments by using laptops, wireless networks and on-line instruction.	Q3a. Did the use of laptops, wireless networks and on-line instruction create more authentic learning environments that promoted increased student access and use of technology in the instructional program.					X	X		
	Q3b. Did Pre-service teachers that participated in the grant increase their knowledge and ability to integrate technology into classroom instruction?	X			X	X	X	X	X
	Q3c. Were Pre-service teachers capable of increased use of technology in their classrooms after graduation?	X	X			X	X		
A = On-line Levels of Use Questionnaire B = On-line WSU and K-12 Partner Faculty Questionnaire C = On-line Workshop Feedback Forms D = On-line Student Teacher Questionnaire		E = Face to face interviews/observations F = Document / Log Review / P and P Surveys G = HPR*TEC Basic Skills Profiler H = Student Teacher Evaluation Form							

The Product dimension of the CIPP model looks at final activity outcomes in a way that attempts to provide summative information about the success of the project in relation to its predefined goals and objectives. By back-mapping through the CIPP model, it is possible to draw inferences about the amount of change that occurred during the Project. The changes that occur also can serve as a measure of the quality of the inputs and the effectiveness of Project implementation. Product measures included in the evaluation attempted to measure levels of satisfaction among the participants regarding their participation in the Project as well as assess changes in levels of knowledge and skills resulting from professional development activities provided. The evaluation matrix shown in Table 6 was used as a guide for gathering data from multiple sources and analyzing the data in an attempt to answer the summative evaluation study questions established for each goal area.

In the Product phase of the Project M³ evaluation, elements of the Concerns-Based Adoption Model (CBAM; Hall, George, & Rutherford, 1998) provide a framework for assessing the Integration of Technology into the Teaching and Learning Process. Sets of questions were developed to guide the evaluation in assessing the impact of the grant on each of the participants. CBAM was used to establish baseline data and to measure current levels of use as well as stages of adoption of the use of technology in the instructional process.

Results of the Year 1 Project M³ Implementation

Specific Year 1 objectives were written into the management plan for each of the Project M³ goals. The M³ Project Director and staff used the objectives to develop action plans, which guided Project activities during Year 1 implementation. These activities, as well as their impact, will be the focus of evaluation.

The Year 1 Evaluation Report is designed to:

1. provide documentation as to whether the established objectives, milestones and Project completion dates were met.
2. report on the effectiveness of professional development activities that were designed and provided through the grant.
3. examine the level of change that occurred in innovative teaching and learning practices as a result of teacher and student involvement in the Project M³ Project.

The format used to communicate findings for Year 1 of the Project M³ grant was designed to align with each goal area established for the grant. Each goal section lists objectives, strategies, activities and outcomes. Following each goal area, results are summarized and where appropriate, conclusions are drawn; recommendations are made regarding future implementation procedures.

Goal 1: Models

Members of the WSU TE faculty, PreK-12 Partner faculty, and LAS and FA faculty will effectively model the integration of technology into pre-service teacher education and content area coursework, by designing, implementing, and disseminating models of practice.

Year 1 Objective 1.1 Models in Teacher Education

TE faculty in the COE will increase the use of technology in teacher education coursework.

Year 1 Objective 1.1 Indicators of Achievement

1.1.A: Infusion of ISTE standards

1.1.B. Description of ways technology was identified, designed, and integrated into classes

1.1.C: Description of ways technology was integrated into classes as well as identification of technologies used for research, analysis, and communication

1.1.D: Faculty models posted at the website

Table 7. Year 1 Objective 1.1 Activities and Results

Objective 1.1 Activities	Objective 1.1 Results
<p>Dr. Jeri Carroll, M³ staff member, worked with Marsha Gladhart, M³ Grant Director and Dr. Larry Gwaltney, M³ Lead Evaluator, to design a technology integration grid Based on Teacher Education block courses and ISTE standards. Jeri used the grid as a basis for assessing the baseline level of technology infusion occurring at the start of the grant period. Three criteria were used to assess technology integration. The first was documentation appearing in the syllabi of Core courses in Teacher Education followed by 2) information about the use of technology in course descriptions and 3) technology activities reported by the instructors teaching the Block I Core Curriculum classes. In conjunction with this effort, Marsha Gladhart met with Block I faculty to discuss results form the most recent Pre Service Teacher HPR*TEC Basic Skill Profiler used to assess pre-service student's level of skills in the use of technology. Data from the Profiler indicated Pre-service students needed to learn more about how to use technology to make classroom presentations and how to use email attachments for enhancing communication among teachers and students. These were set as top priorities for redesigning Block I Curriculum and Instruction Course 311.</p> <p>Jeri and Marsha also met with Block II faculty to discuss plans for technology integration and share information from the Profiler and the ISTE Standards Grid. In addition to CI 311, changes were made in course requirements for CI 328.</p>	<p>CI 311 Course was redesigned to include teaching students how to use presentation software and e-mail attachments to better communicate about coursework. Forty-five Block I students in CI 311 explored on-line resources, created concept maps with Inspiration software and developed a newsletter from their field experiences. Students were also instructed in how to utilize e-mail attachments to collaborate with professors and fellow students. Block I students completed the PT3 profiler at the end of 2nd semester to determine growth in levels of use/proficiency in these areas. Results of the ISTE Standards Grid can be viewed at: http://education.twsu.edu/m3/evaluation/default.htm under the Results tab.</p> <p>Teacher Education faculty approved new ISTE standards for Professional Preparation and will use the standards to guide future efforts to redesign Curriculum and Instruction courses.</p>

Objective 1.1 Activities	Objective 1.1 Results
<p>Faculty planned and implemented learning stations for CI 328 to introduce instructional technologies to Block II students.</p> <p>Several grant activities centered on the Grant Staff planning and providing training for COE teachers and staff. This was accomplished mainly in two ways. A series of workshops were designed around COE and needs as assessed by the HPR*TEC PT3 Profiler. In addition, seven M³ Student Mentors provided individual support to faculty and staff on specific software and hardware applications.</p> <p>The M³ Staff decided on the use of FileMaker Pro as a database to manage information about the M³ grant. It was felt that the database would have wider use by the faculty and staff if it could be demonstrated as a means of managing student data across time and across several courses. Pilot programs were initiated with members of the faculty to determine different uses of the database.</p> <p>M³ Staff worked with Innes Villalpando, COE faculty member, to plan and implement a FileMaker Pro Database of undergraduate students for faculty use.</p> <p>In order to introduce and promote the use of technology in instruction, several presentations were made in various COE classes during the year by members of the M³ staff.</p> <p>Redesigned CI 786: Beginning problem solving and algorithms to include robotics, Logo, and Visual Basic.</p>	<p>Students were given instruction on WebQuests, creating Web sites, creating PowerPoint presentations, and background information on how computers process and store data. Students and instructor were pleased with their experience. Spring section asked staff to repeat this session because it was so popular.</p> <p>Workshops were developed and presented in the following areas for COE faculty and staff: Workshops included: <u>Communicating with Blackboard</u> Number participating: 10 <u>FileMaker Pro Database</u> Number participating: 16 <u>Imaging Workshop</u> Number participating: 5 <u>Wireless Workshop</u> Number participating: 13 <u>WSU Faculty Blackboard Training</u> Number participating: 13</p> <p>Results: Overall, participants indicated a high level of satisfaction with the training as well as attaining higher levels of knowledge skills and abilities in the use of each of the software applications presented. Seven Student Mentors provided 836 training sessions during the year as direct support for COE faculty and staff in the use of technology.</p> <p>COE faculty will complete a new HPR*TEC PT3 Profiler inventory at the end of the year to document growth in their use of technology. In addition, they will complete an on line questionnaire based on GPRA indicators to establish baseline for the grant evaluation.</p> <p>FileMaker Pro Database was set up and faculty began using on January 10, 2001.</p> <p>M³ staff made numerous presentations in COE teacher education classrooms to introduce the use of Internet resources, WebQuest, graphic organizers, SmartBoard, digital camera, videodisc, as well as a variety of educational software and curriculum related materials.</p> <p>13 people enrolled in fall semester. The largest enrollment in the past had been 3 students. Students were excited about this class and recommended it to others. Many of the students enrolled in Robotics.</p>

Objective 1.1 Activities	Objective 1.1 Results
<p>Six COE faculty members formed an Integration Team to discuss, plan, and develop activities that involve technology in meeting the course goals of four teacher education courses.</p> <p>M³ Dissemination activities included:</p> <p>M³ Staff Planned and held an M³ Kick-off celebration at Corbin Education Center.</p> <p>Jeri and Marsha presented a session (Integrating Technology into Teacher Education Coursework: A constructivist Approach) at the conference, Association of Teacher Educators (ATE).</p> <p>Hosted a visit from Sue Gamble and Janet Waugh of the Kansas State Board of Education. Schedule included tour of the lab to see what kind of technology is available to TE students, meeting with the Dean to discuss direction of Teacher ed, meeting with COE Technology Committee, meeting with M³ staff and COE Faculty to hear how faculty and partner schools are using technology. Also met with EAS doctoral students to see new problem-based model for doctoral program.</p> <p>Marsha and Larry participated in a discussion and taped interview with Matt Gregg from HPR*TEC Profiler to discuss use of Profiler instrument--how we used it and what we would like to see in the form of an on-line assessment tool.</p> <p>Marsha and Jeri attended and participated in the Pew Grant Conference on State of the Art Classrooms. Presentations on Astronomy, Political Science, Economics, Math classes from four different universities and colleges.</p> <p>Marsha and Jeri attended and presented a session SITE 2001 on Models, Mentors, and Mobility in the Teacher Education Program.</p> <p>Developed and made available an on line technology resource library for COE Teacher Education Faculty</p>	<p>Activities were written into course syllabi and documented in the database of integrated activities. This team planned a Brown Bag Luncheon for teacher education faculty to discuss new NCATE emphasis on technology. Thirteen faculty attended.</p> <p>56 individuals participated from COE, LA/FA, M³ Staff and Partner Schools.</p> <p>Ten ATE members attended.</p> <p>Sue and Janet were very impressed with the technology we shared. They were especially impressed with the EAS model and the PDA implementation. We were able to share our needs and successes. Hopefully, they will better understand the role technology can play in teacher education and will become better-informed policy makers for the state board.</p> <p>Conveyed feedback to Profiler team about our use or nonuse of Profiler. Hopefully, this will lead to the development of improved tools for assessing the infusion of technology into teacher education courses and the impact it has on the overall teacher education program.</p> <p>Collaborated with English, sociology, and education professors on the way and back from the conference as well as during the conference! Twyla Hill (sociology), Derek Soles (English), Rebecca Langrall, Jeri Carroll, and Marsha Gladhart (C&I) and Peter Zoller (English) attended. Discussed ways to integrate M³ across disciplines.</p> <p>Nine teacher educators attended</p> <p>Several TE faculty members requested copies of ISTE standards as well as numerous additional technology related resources.</p>

Year 1 Objective 1.2 Models in PreK-12 Schools

PreK-12 teachers identified as technology mentors for pre-service teachers will increase the use of and level of use of technology in their classrooms by designing, implementing, and disseminating models of practice.

Year 1 Objective 1.2 Indicators of Achievement

1.2.A: Number of field trips/people attending

1.2.B: Number of models developed

1.2.C: Description of how technology has been integrated into classes

1.2.D: Items purchased

1.2.E: Number of models developed/ How technology has been integrated into your classes

1.2.F: Models posted at the website

Table 8. Year 1 Objective 1.2 Activities and Results

Objective 1.2 Activities	Objective 1.2 Results
<p>Several major initiatives have been undertaken through the M³ Project that involve Pre-K-12 teachers in partner schools as well as through partnerships with various departments within the Wichita Public Schools. During the first year of the grant, M³ Staff concentrated on providing training and support of teachers in the partner schools, while at the same time observing those teachers that could eventually serve as cooperating teachers and mentors for pre-service teachers.</p> <p>One of the primary activities undertaken during the first year of M³ has been the development of the Technology Projects for Students Website. (TIPS) This project consisted of a group of teachers and staff from USD 259 and faculty, staff, students, and mentors from WSU meeting weekly to design Technology Integration Projects for Students in the area of Health.</p> <p>M³ Staff members and Student Mentors presented a number of workshops at Partner Schools as well as provided individual teacher and classroom support. Listed below are some of the activities that occurred in Partner Schools during the 2000-2001 school year:</p>	<p>Each of the Partner School teachers and staff participated in the HPR*TEC Basic Skills Profiler to establish baseline levels of skills and technology use. Each school's data was analyzed and shared with the school. This information was used in prioritizing the type of professional development activities that were offered by the M³ Staff during the first year of program implementation.</p> <p>The teachers are not only excited about TIPS, but have shown equal excitement about all they are learning through their involvement. One of the most excited is the district science and health coordinator who comes each week and is learning technology skills and has enrolled in a course at the university to learn more. One of the teachers sent an all-school e-mail to tell everyone how wonderful the summer activities were and that they should check them out.</p> <p>Hits on the site went from 361 to 787 in one week. One teacher did an in-service for her faculty on WebQuests (the strategy that we adopted for this set of TIPS). One teacher reported that she was so excited about one of the search engines that she went around and put it on every teacher's computer at her school. Several have asked if they can become more involved in similar grant activities. TIPS activities can be viewed at http://education.twsu.edu/m3/tips/index.htm</p>

Objective 1.2 Activities	Objective 1.2 Results
<p>Tonya Witherspoon, M³ Staff member, worked with Ken Jantz, Mueller Partner School Principal, and Bev Lane, Mueller teacher to help them design and implement a WebQuests lesson plan format for use with the curriculum in their technology computer lab.</p> <p>Rick Weaver and Alan Aagaard presented a series of workshops on WebQuests, Blackboard, Advanced Word, and Beginning Excel for faculty and staff at North High school. They were assisted by Jeri Carroll, Marsha Gladhart, and M³ student mentors. A North faculty member also presented a workshop on Grade Machine. Training sessions were conducted from February 1st - February 9th on content area web resources, WebQuests, Blackboard, Advanced Word, Beginning Excel, and Grade Machine were all included in the training. Each staff member picked two training sessions to attend.</p> <p>Tonya Witherspoon worked with St. Pat's teachers to create and update classroom web pages.</p> <p>Tonya helped Beth Adamson (4/5 Mueller Teacher) design and implement a multimedia project including the integration of ISTE standards into project.</p> <p>Rick Weaver, M³ Staff, led a series of training sessions at St. Patrick's for their staff in e-mail, digital camera, and WebQuests.</p>	<p>The design provided for better alignment of instruction in the lab with district and State curriculum learning standards.</p> <p>Feedback from the North High staff regarding the training was positive. The numbers for each session were: SS/LA content area - 39, Math/Science content areas - 22, Blackboard - 14, Advanced Word - 23, Beg. Excel - 25. In all 123 workshop slots were filled during the 10 days of training.</p> <p>Tonya led the staff in creating a web policy for their site. She also helped St. Pat teachers develop and launch individual classroom web pages.</p> <p>Project was submitted to Multimedia Mania sponsored by ISTE. http://www.ncsu.edu/midlink/mmania.how.html</p> <p>The staff at St. Patrick's was able to begin incorporating the different applications into sharing information, building web pages and in using WebQuest with their students.</p>

Year 1 Objective 1.3 Models in LAS and FA

Faculty in LAS and FA who teach pre-service teacher education students during their General Education and major coursework will increase the use of and level of use of technology in their classrooms by designing and implementing models of practice.

Year 1 Objective 1.3 Indicators of Achievement

1.3.A: number of models developed and integrated into instruction.

1.3.B: models posted at the website

Table 9. Year 1 Objective 1.3 Activities and Results

Objective 1.3 Activities	Objective 1.3 Results
<p>Jeri Carroll took the wireless computers to the Faculty Senate Executive Committee meeting to connect to the Senate website as we made the charges to the various Senate committees. At another time she took her Handspring and keyboard to demonstrate its use to the Faculty Senate.</p>	<p>Faculty in other colleges became more aware of the capacity of wireless computing. Questions came from faculty in Engineering, Fine Arts, Business, LAS, and university administration regarding the use and capacity of the M³ units.</p>

Objective 1.3 Activities	Objective 1.3 Results
<p>The M³ Staff demonstrated the wireless equipment and the SmartBoard to members of the WSU College of Engineering. Meetings were held with 3 faculty members from the Biology Department regarding how they might utilize the wireless computing system in their instructional program.</p> <p>M³ Staff held wireless laptop “poster sessions” at the university-wide workshop, Excited About Teaching Online.</p> <p>Tonya met with Dr. Alexander to take a tour of the Fairmount Center for Science and Mathematics Education. They discussed how the Science/Math learning labs available for checkout could be infused with technology as a component of the Raytheon Teaching Fellowship.</p> <p>M³ co-sponsored Digital Imaging Workshop with the Center for Teaching and Research Excellence. Peggy Steffen, NASA trainer, led this two-day workshop. The workshop explored how to capture and manipulate digital images from a variety of sources.</p> <p>Mary Sue Foster, an art education professor, brought her students to the COE technology center to digitize videos for art projects.</p> <p>Rick Weaver met with Russ Widener’s Technology in the Arts class to show them the wireless laptops and PDAs.</p> <p>Patrick Hutchison and Rick Weaver met with Elaine Bernstorf, a professor of music education, to give her Sibelius and show her how to integrate technology into music education.</p>	<p>Demonstrations of our wireless equipment increased communication between the COE and other units on campus. One Engineering faculty member commented on how unusual it was that Education and Engineering faculty were leading the way on campus in wireless computing.</p> <p>Fifty-five LA/FA and 15 COE faculty attended and saw wireless computing demonstrated for the first time on campus.</p> <p>Biology and Engineering faculty planned on purchasing wireless laptops.</p> <p>Dr. Alexander, Professor of Astronomy, is now a member of the COE Technology Advisory Council.</p> <p>A pre-post assessment was conducted among the 16 participants in attendance. For the most part, the responses to this training were positive. Most felt that they learned how to better use digital cameras, microscopes, flex cams and scanners.</p> <p>The students created an instructional video on paper sculpture. In the past this had been done by the Media Resource Center for the students and now they can do it by themselves.</p> <p>The Fine Arts students participated in art WebQuest activities, did some file sharing with PDAs and learned some ideas about how these both are used. Professor Bernstorf uses technology for personal use and has worked to integrate it into her courses.</p> <p>When the M³ group took their field trip to Oklahoma State University, Elaine and Rick visited their music technology center.</p>

Year 1 Objective 1.4 Model Practitioners in PreK-12 Schools

WSU will increase the number of model practitioners infusing information technology into their PreK-12 classrooms to serve as role models and mentors for pre-service teachers.

Year 1 Objective 1.4 Indicators of Achievement

- 1.4.A.1: Increased number of coordinating teachers capable of integrating technology in classes in partner schools
- 1.4.A.2: Participant feedback on training survey form
- 1.4.B: Number of field experience placements with technology proficient teachers in partner schools
- 1.4.C: Number of videotapes made of exemplary technology teachers

Table 10. Year 1 Objective 1.4 Activities and Results

Objective 1.4 Activities	Objective 1.4 Results
<p>Much of the information listed in Objective 1.2 also applies to Objective 1.4. Almost all Pre-K-12 Partner School teachers took the HPR*TEC Basic Skills Profiler in the fall of 2000. This information was used initially to determine teachers self reported skill levels on the 30 items on the scale. In turn, teachers who reported higher levels of skills were contacted and became involved in more advanced projects at each of the partner schools. Concurrently, while providing training in Partner Schools during 2000-2001, M³ Staff observed teachers that demonstrated higher levels of skills in technology integration and began to identify potential PreK-12 practitioners that could serve as models, mentors and cooperating teachers during the second and third years of the grant.</p> <p>Teachers that participated in the TIPS project were also asked to be model teachers that would serve in this capacity as well.</p> <p>Several informal discussions were held with Principals and campus support staff at Partner Schools and with USD 259 District personnel to begin the process of identifying teachers that could be trained or that have the technology skills to act as cooperating teachers for upcoming pre-service teachers in student teaching blocks.</p>	<p>Profiles were developed and shared with individual schools based on the HPR*TEC Basic Skills Profiler. M³ staff members have visited schools, worked with the teachers, and have had discussions with the teacher placement office for future placements.</p> <p>Several "Model Teachers" were involved in projects during the schools year that included the development of Models of Practice in the TIPS Project.</p> <p>Partner Schools and USD 259 teachers involved in the TIPS Project have been involved in presenting the materials at District in-services as well as through the TIPS website.</p> <p>A list of teachers who have worked with M³ activities has been given to the Director of Student Teaching placement with a request to place pre-service students with the teachers when possible.</p>

Results Related to Goal 1 Evaluation Questions

Question 1a. *Did the faculty who experienced the training provided through the grant express higher levels of concurrence with the new standards, materials, and practices involving the infusion of technology in instruction?*

Six software and hardware related workshops were developed and delivered for COE teachers and staff during the first grant year: (a) Initial Blackboard, (b) Follow-up Blackboard, (c) FileMaker Pro, (d) Imaging/Digital Skills, (e) Mobility - Wireless, and (f) Handheld Devices. Results from the workshops are presented below.

Blackboard Workshop Results

This Blackboard Workshop focused on enhancing communications through the use of technology. Table 6 includes the pre and post data for each of the eight workshop objectives.

Table 11. Pre and Post Feedback for Developing On-line Communities with Blackboard Workshop

Workshop Objectives		No knowledge regarding these skills / processes	Limited knowledge or abilities in using these skills / processes	Ability to apply basic use of these skills / processes	Ability to apply basic use and some advanced use of these skills / processes	Ability to apply skills / processes with a high level of proficiency. Can facilitate / teach the use of these skills	Total
Objective 1. Participants will be able to identify and locate communication tools available in Blackboard to include discussion forum, virtual classroom, email, and groups.	Pre #	4	2	1	2	1	10
	Pre %	40%	20%	10%	20%	10%	100%
	Post #	0	1	4	3	2	10
	Post %	0%	10%	40%	30%	20%	100%
Objective 2. Participants will learn how to set up and moderate a discussion forum.	Pre #	6	0	3	0	1	10
	Pre %	60%	0%	30%	0%	10%	100%
	Post #	0	2	3	3	2	10
	Post %	0%	20%	30%	30%	20%	100%
Objective 3. Participants will learn how to set up and moderate a virtual chat.	Pre #	7	2	1	0	0	10
	Pre %	70%	20%	10%	0%	0%	100%
	Post #	0	3	4	0	3	10
	Post %	0%	30%	40%	0%	30%	100%
Objective 4. Participants will identify advantages and disadvantages for asynchronous and synchronous communication.	Pre #	5	0	3	1	1	10
	Pre %	50%	0%	30%	10%	10%	100%
	Post #	0	3	4	1	2	10
	Post %	0%	30%	40%	10%	20%	100%
Objective 5. Participants will identify strategies for encouraging interaction in a discussion forum.	Pre #	5	2	0	3	0	10
	Pre %	50%	20%	0%	30%	0%	100%
	Post #	0	2	4	1	3	10
	Post %	0%	20%	40%	10%	30%	100%
Objective 6. Participants will identify strategies for encouraging interaction in a virtual chat.	Pre #	6	1	1	2	0	10
	Pre %	60%	10%	10%	20%	0%	100%
	Post #	0	2	5	0	3	10
	Post %	0%	20%	50%	0%	30%	100%
Objective 7. Participants will identify ways to improve the quality of communication in a Blackboard course.	Pre #	5	1	2	2	0	10
	Pre %	50%	10%	20%	20%	0%	100%
	Post #	0	3	3	2	2	10
	Post %	0%	30%	30%	20%	20%	100%
Objective 8. Participants will identify possible measures for assessing communication and participation in a Blackboard course.	Pre #	6	1	0	3	0	10
	Pre %	60%	10%	0%	30%	0%	100%
	Post #	1	4	1	2	2	10
	Post %	10%	40%	10%	20%	20%	100%

Shown below are typical comments made by participants regarding the Initial Blackboard workshop.

- I learned a lot.
- Helpful, will have to think of ways to incorporate and find the time to do so with one class next semester
- Marsha, despite the irreverence that appears in these sessions, I think they think. are enjoyable and effective - we all need time to play!
- This helped me a great deal. Thank you.
- Verified my previous understanding and experiences. I have the knowledge now to go beyond the level of use I had to use discussion boards. Also I feel quite a bit more confident that I could facilitate a synchronous communication.

Follow-up Blackboard Workshop Results

A follow-up workshop was provided in Blackboard for the purpose of introducing additional uses of the software for student assessment and Gradebook. Feedback from the nine individuals participating in this workshop was positive. Pre- and post- test results showed an overall increase in participants' abilities to apply the skills.

Table 12. Pre and Post Feedback for Follow-up Blackboard Workshop

Workshop Objectives		No knowledge regarding these skills / processes	Limited knowledge or abilities in using these skills / processes	Ability to apply basic use of these skills / processes	Ability to apply basic use and some advanced use of these skills / processes	Ability to apply skills / processes with a high level of proficiency. Can facilitate / teach the use of these skills	Total
Objective 1. Participants will learn how to access Blackboard's on-line help area.	Pre #	4	3	1	1	0	9
	Pre %	44%	33%	11%	11%	0%	100%
	Post #	1	0	3	4	1	9
	Post %	11%	0%	33%	44%	11%	100%
Objective 2. Participants will discuss different ways to effectively use Blackboard's Assessment Manager and On-line Gradebook in their instruction.	Pre #	3	3	2	1	0	9
	Pre %	33%	33%	22%	11%	0%	100%
	Post #	0	0	4	3	2	9
	Post %	0%	0%	44%	33%	22%	100%
Objective 3. Participants will learn how to create an assessment	Pre #	6	2	0	1	0	9
	Pre %	67%	22%	0%	11%	0%	100%

Workshop Objectives		No knowledge regarding these skills / processes	Limited knowledge or abilities in using these skills / processes	Ability to apply basic use of these skills / processes	Ability to apply basic use and some advanced use of these skills / processes	Ability to apply skills / processes with a high level of proficiency. Can facilitate / teach the use of these skills	Total
using Blackboard's Assessment Manager tool.	Post #	0	0	6	3	0	9
	Post %	0%	0%	67%	33%	0%	100%
Objective 4. Participants will learn how to use Blackboard's On-line Gradebook to record grades from both on-line and classroom assessments.	Pre #	6	1	1	1	0	9
	Pre %	67%	11%	11%	11%	0%	100%
	Post #	0	2	3	2	2	9
	Post %	0%	22%	33%	22%	22%	100%
Objective 5. Participants will discuss the benefits for students and instructors of using Blackboard as a tool to enhance instruction	Pre #	3	2	2	1	1	9
	Pre %	33%	22%	22%	11%	11%	100%
	Post #	0	1	4	2	2	9
	Post %	0%	11%	44%	22%	22%	100%

Comments related to the Follow-up Blackboard Workshop:

- Thanks for a good use of time! The interactions were also great!
- Excellent way to learn...hands on!!!
- What a great presentation. I learned a lot. And I learned which faculty I could go to for some answers.
- It was all very practical and I can go ahead for my spring and my summer class.
- I rated myself too high on the pre-test! I may not be an expert but I've learned a lot and there should be some place to show that I've learned even though I'm not really rating myself any higher. I guess this is the place.
- Great job!

Responses for all objectives outlined in both the Initial and the Follow-up Blackboard workshops indicated that a majority of participants started the workshop with no knowledge or limited knowledge about the use of Blackboard as a communication tool. By the end of each workshop, a majority stated that they could either apply basic use, advanced use, or facilitate/teach the use of Blackboard to others. In face-to-face interviews with COE faculty and partner teachers, Blackboard was the technology tool most mentioned by respondents.

FileMaker Pro Workshop Results

The FileMaker Pro Workshop addressed use of a database to manage advising.

Objectives included finding, sorting, printing, and manipulating student data. Participant self-ratings of knowledge and abilities were explored before and after the workshop.

Table 13. Pre and Post Feedback for FileMaker Pro Workshop

Workshop Objectives		No knowledge regarding these skills / processes	Limited knowledge or abilities in using these skills / processes	Ability to apply basic use of these skills / processes	Ability to apply basic use and some advanced use of these skills / processes	Ability to apply skills / processes with a high level of proficiency. Can facilitate / teach the use of these skills	Total
1. Participants will learn how to access the undergraduate student database.	Pre #	7	7	2	0	0	16
	Pre %	44%	44%	13%	0%	0%	100%
	Post #	0	0	9	3	4	16
	Post %	0%	0%	56%	19%	25%	100%
2. Participants will learn how to use FileMaker Pro to find data contained within a FileMaker database.	Pre #	9	4	1	2	0	16
	Pre %	56%	25%	6%	13%	0%	100%
	Post #	0	0	8	4	4	16
	Post %	0%	0%	50%	25%	25%	100%
3. Participants will learn how to sort data contained within a FileMaker database.	Pre #	11	4	1	0	0	16
	Pre %	69%	25%	6%	0%	0%	100%
	Post #	0	1	10	2	3	16
	Post %	0%	6%	63%	13%	19%	100%
4. Participants will learn how to print records from a FileMaker database.	Pre #	10	5	1	0	0	16
	Pre %	63%	31%	6%	0%	0%	100%
	Post #	3	4	4	2	3	16
	Post %	19%	25%	25%	13%	19%	100%
5. Participants will learn how to use form, list, and table views to manipulate data in a FileMaker database.	Pre #	10	5	1	0	0	16
	Pre %	63%	31%	6%	0%	0%	100%
	Post #	1	0	8	4	3	16
	Post %	6%	0%	50%	25%	19%	100%

Participants provided the following comments regarding the FileMaker Workshop:

- Rick --- NICE JOB!!! (it was also very good to have provided such a nice handout. Many of the faculty are concrete-sequential, and just as many are random abstracts) Keep up the good work!
- I learned a lot today and I hope that I will use it. I know I will, but when I do I will need help then, too. But, I know I have 24/7. Well, anyway approximately 5/11.

- Thank you for offering this mini workshop. I can see great time saving and organizational uses for this program.
- Well done. The workshop used real data that we are interested in learning to access and manipulate. Thanks.
- Good job! Questions were answered in a professional manner.
- Good workshop! Thanks, Rick and other M³ folks!
- I appreciated the chance to have an empty outline on which to take notes. This was a clear, helpful presentation. I will still need help, I'm sure, but this will be fun to experiment with. Thank you!
- We didn't learn how to print from FileMaker Pro. However, everything else that was presented was extremely useful and presented in such a way that it was easy to follow and understand. Thanks.
- Very well organized and presented. Step by step, I was able to follow the presentation.
- I thought the workshop was well done. However, it would have been nice if we'd spent a bit more time on making sure we knew how to get things to print correctly. I suppose one usually assumes that if you can negotiate the other, you should be OK, but with
- Very helpful. This is much more user-friendly than I had expected. Thank you.

Imaging/Digital Skills Workshop Results

A total of 16 participants took part in an imaging/digital skills workshop hosted by the WSU COE. However, only 5 completed the pre- and post-assessments. Some of the items were specific only to the pre-assessment and others were included only on the post assessment instrument. However, eight of the items were common to both the pre and post questionnaires. Results of the feedback obtained from the workshop are shared below.

Table 14. Pre Imaging Workshop Assessment - Stand-alone item 3 results

Item		Self rating of expertise				
		None	Little	Some	Much	Expert
3. Describe your computer expertise at the start of in-services this year.	n	0	0	1	4	0
	%	0%	0%	20%	80%	0%

Among the five participants who provided feedback on this workshop, one respondent rated personal expertise with computers as "some." The remaining four respondents used the word "much" to describe their computer expertise at the start of the in-service.

Table 15. Post Imaging Workshop Assessment - Stand-alone items 1-2 results

Item		Self rating of agreement				
		Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
1. As a result of this workshop my confidence in the use of technology has increased.	n	0	0	0	4	1
	%	0%	0%	0%	80%	20%
2. I plan to use digital technology with students in the present school year.	n	0	0	2	0	3
	%	0%	0%	40%	0%	60%

Table 15 indicates that four of the five workshop respondents "Agreed" and one "Strongly Agreed" that their confidence in the use of technology increased as a result of participating in the workshop. Three respondents "Strongly Agreed" that they planned to use digital technology with students during this year while two participants expressed "No Opinion" in regard to the item.

Table 16. Post Imaging Workshop Assessment - Stand-alone item 4 results

Item		Self rating of knowledge level				
		None	Little	Some	Much	Expert
4. Describe your level of knowledge in the use of digital technology to enhance student research projects.	n	0	0	1	4	0
	%	0%	0%	20%	80%	0%

Table 16 presents findings of knowledge ratings completed after the workshop. One of the participants said that personal knowledge in the use of digital technology to enhance student research projects had increased "some," while four respondents felt it had increased "much."

Assessments administered before and after the Imaging Workshop differed in content. Two common items probed comfort and knowledge levels in managing and using digital technology. A third item dealt with converting and /or importing files. The findings of these assessments follow.

Table 17. Pre-Post Workshop Assessment Results - Imaging Workshop Common Items

Item		Self rating of level									
		None		Little		Some		Much		Expert	
		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Pre 4./Post 3. Describe your level of comfort with understanding computer and memory requirements for digital input management.	n	0	0	2	0	1	2	2	3	0	0
	%	0%	0%	40%	0%	20%	40%	40%	60%	0%	0%
Pre/Post 5. Describe your level of knowledge in the use of digital technology to enhance student classroom experiences.	n	1	0	2	1	2	1	0	3	0	0
	%	20%	0%	40%	20%	40%	20%	0%	60%	0%	0%
Pre/Post 6. Describe your level of knowledge in.	n	0	0	1	1	3	1	1	3	0	0
	%	0%	0%	20%	20%	60%	20%	20%	60%	0%	0%

Post assessment ratings on items included in Table 17 indicated that most of the participants believed that they had achieved higher levels of knowledge and understanding as a result of participating in the workshop. Forty percent of the participants expressed that they had "None" or "Little" knowledge in regard to understanding memory requirements on the pre assessment compared to 0% on the post survey. However, 20% of those participating still expressed that they had "little" knowledge or understanding of how to use technology to enhance classroom experiences, or to convert or import files.

The workshop also introduced how to capture images with specific digital devices. Self-ratings of knowledge level with five devices were explored in assessments administered before and after the workshop. Results of the pre- and post-training surveys follow.

Table 18. Description of Knowledge of Image Capture with Digital Devices

Device		Self rating of knowledge level									
		None		Little		Some		Much		Expert	
		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Digital cameras	n	1	1	0	0	1	2	3	2	0	0
	%	20%	20%	0%	0%	20%	40%	60%	40%	0%	0%
Digital microscopy	n	3	0	0	1	1	2	1	2	0	0
	%	60%	0%	0%	20%	20%	40%	20%	40%	0%	0%
Flex cam	n	4	1	1	1	0	1	0	1	0	1
	%	80%	20%	20%	20%	0%	20%	0%	20%	0%	20%
Videotape input	n	2	1	1	1	2	2	0	1	0	0
	%	40%	20%	20%	20%	40%	40%	0%	20%	0%	0%
Scanner	n	0	0	1	2	3	1	1	1	0	1
	%	0%	0%	20%	40%	60%	20%	20%	20%	0%	20%

Changes in levels of knowledge regarding the digital devices listed in the table above were generally higher on the post questionnaire except for digital cameras. Sixty percent of the participants rated themselves at the "Much" level in regard to their knowledge of digital cameras on the pre assessment compared to only 40% choosing "Much" on the post assessment. Greater increases between pre and post ratings were noted in the areas of Flex Cam and Videotape input. However, ratings on knowledge about Scanners saw a shift of 20% (one person) moving into the "Expert" category while the "Little" category changed from 20% on the pre assessment to 40% after the workshop was completed. The shifts downward on the digital camera and scanner items may have resulted from participants over rating their knowledge on the initial questionnaire.

Mobile - Wireless Workshop Results

Table 19 contains the results of the Mobile workshop using the wireless mobile labs. A total of 13 individuals took part in the workshop. Eight learning objectives were written for the pre and post assessment of the workshop. Pre- and post-training assessment results indicate that participants gained in their knowledge and ability to apply skills presented during the workshop.

Table 19. Pre and Post Feedback for Mobility -Wireless Workshop

Objective		No knowledge regarding these skills / processes	Limited knowledge or abilities in using these skills / processes	Ability to apply basic use of these skills / processes	Ability to apply basic use and some advanced use of these skills / processes	Ability to apply skills / processes with a high level of proficiency. Can facilitate / teach the use of these skills	Total
Participants will learn how to effectively create collaborative projects in the classroom setting using mobile computing.	Pre #	3	5	2	1	2	13
	Pre %	23%	38%	15%	8%	15%	100%
	Post #	0	2	3	3	5	13
	Post %	0%	15%	23%	23%	38%	100%
Participants will learn how to correlate various types of software with educational standards	Pre #	2	4	0	5	2	13
	Pre %	15%	31%	0%	38%	15%	100%
	Post #	0	2	3	5	3	13
	Post %	0%	15%	23%	38%	23%	100%
Participants will learn basic technical troubleshooting in relation to the AirPort and iBooks (and IBM compatible laptops).	Pre #	6	3	2	1	1	13
	Pre %	46%	23%	15%	8%	8%	100%
	Post #	2	3	1	3	4	13
	Post %	15%	23%	8%	23%	31%	100%
Participants will learn about research (ACOT, as well as other current research findings) that explores the effects of mobile computing in the classroom and the educational benefits for the students.	Pre #	4	4	1	3	1	13
	Pre %	31%	31%	8%	23%	8%	100%
	Post #	2	0	0	7	4	13
	Post %	15%	0%	0%	54%	31%	100%
Participants will learn how instructional environments will change when using mobile computing	Pre #	4	2	4	3	0	13
	Pre %	31%	15%	31%	23%	0%	100%
	Post #	0	2	1	6	4	13
	Post %	0%	15%	8%	46%	31%	100%
Participants will explore classroom management solutions with laptops.	Pre #	5	2	3	3	0	13
	Pre %	38%	15%	23%	23%	0%	100%
	Post #	0	2	1	6	4	13
	Post %	0%	15%	8%	46%	31%	100%
Participants will learn what types of hardware are needed for wireless computing and how it all works	Pre #	3	3	2	4	1	13
	Pre %	23%	23%	15%	31%	8%	100%
	Post #	0	2	3	4	4	13
	Post %	0%	15%	23%	31%	31%	100%
Participants will explore the Unit of Practice design model.	Pre #	5	3	0	3	2	13
	Pre %	38%	23%	0%	23%	15%	100%
	Post #	0	4	1	3	5	13
	Post %	0%	31%	8%	23%	38%	100%

Comments on the Mobility-Wireless Workshop included:

- Once again, I felt that Cyndy did an exceptional job!!! I was most embarrassed by one of my colleagues, but..
- This was very well done.
- Great information. I especially appreciate the time for hands on and time to explore!
- I learned peer-to peer networking with iBooks. I have new ideas and I've made new contacts.
- Great workshop. Cyndy was very knowledgeable and I appreciated being able to have hands on opportunities.
- This was a great workshop. Cyndy was responsive to each individual and made everyone feel like they had something to learn.

Question 1b. *Did the faculty who experienced the training provided through the grant increase their levels of use of technology in their instructional practice?*

Faculty that participated in the Follow-up Blackboard, FileMaker Pro, and Mobility

Workshops completed a questionnaire about their workshop experience. The findings follow.

Table 20. Feedback from Participants Regarding Follow-up Blackboard Workshop

Item		Self rating of agreement					
		Not Applicable	Strongly Agree	Agree	Disagree	Strongly Disagree	Total
I will use ideas from this workshop to impact student learning.	n	1	8	0	0	0	9
	%	11%	89%	0%	0%	0%	100%
I will share topics, concepts, and materials discussed in this class with colleagues.	n	0	7	2	0	0	9
	%	0%	78%	22%	0%	0%	100%
I would recommend this workshop to colleagues.	n	0	9	0	0	0	9
	%	0%	100%	0%	0%	0%	100%
This training will help me to design units and lessons in my content area that will help students meet technology standards.	n	0	6	3	0	0	9
	%	0%	67%	33%	0%	0%	100%
The workshop provided materials and information that will allow me to improve my teaching.	n	1	7	1	0	0	9
	%	11%	78%	11%	0%	0%	100%
This workshop was appropriate for my level of pre-workshop knowledge.	n	0	7	1	1	0	9
	%	0%	78%	11%	11%	0%	100%
I will be able to teach the skills learned in this workshop to others.	n	0	5	4	0	0	9
	%	0%	56%	44%	0%	0%	100%

Responses on items included in Table 20 indicate that most participants planned to infuse the use of Blackboard into their instruction. There was also high agreement among participants that they would share the content of the workshop with others as well as use the information to design units and lessons to help students meet technology standards. They also indicated that they would use the skills learned in the workshops to teach others.

Table 21 depicts a high level of satisfaction with the FileMaker Pro Workshop as well. All assessment respondents agreed or strongly agreed with statements about the effectiveness, value, and usefulness of workshop content. Only two participants among the 16 respondents felt they would not be able to teach the skills learned in the workshop.

Table 21. Feedback from Participants Regarding FileMaker Pro Workshop

Item		Self rating of agreement					Total
		Not Applicable	Strongly Agree	Agree	Disagree	Strongly Disagree	
The presenter(s) demonstrated thorough knowledge and understanding of the material.	n	1	10	5	0	0	16
	%	6%	63%	31%	0%	0%	100%
The presenter(s) utilized effective presentation strategies and instructional techniques (handouts, materials, modeling, practice, feedback, etc.).	n	1	12	3	0	0	16
	%	6%	75%	19%	0%	0%	100%
I will share topics, concepts, and materials discussed in this class with colleagues.	n	1	7	8	0	0	16
	%	6%	44%	50%	0%	0%	100%
I would recommend this workshop to colleagues.	n	1	10	4	1	0	16
	%	6%	63%	25%	6%	0%	100%
The workshop provided materials and information that will allow me to improve my teaching.	n	4	9	3	0	0	16
	%	25%	56%	19%	0%	0%	100%
This workshop was appropriate for my level of pre-workshop knowledge.	n	1	9	5	1	0	16
	%	6%	56%	31%	6%	0%	100%
I will be able to teach the skills learned in this workshop to others.	n	2	4	8	2	0	16
	%	13%	25%	50%	13%	0%	100%

Participants in the Mobility Workshop also rated their agreement with statements concerning the training and content. Findings of this assessment follow.

Table 22. Feedback from Participants Regarding Mobility Workshop

Item		Self rating of agreement					Total
		Not Applicable	Strongly Agree	Agree	Disagree	Strongly Disagree	
Presenters related the content of this workshop / course to current technology and/or content area standards.	n	0	8	4	1	0	13
	%	0%	62%	31%	8%	0%	100%
The presenter(s) demonstrated thorough knowledge and understanding of the material.	n	0	10	3	0	0	13
	%	0%	77%	23%	0%	0%	100%
The presenter(s) utilized effective presentation strategies and instructional techniques (handouts, materials, modeling, practice, feedback, etc.).	n	0	10	3	0	0	13
	%	0%	77%	23%	0%	0%	100%
I will use ideas from this workshop to impact student learning.	n	0	12	1	0	0	13
	%	0%	92%	8%	0%	0%	100%
I will share topics, concepts, and materials discussed in this class with colleagues.	n	0	10	3	0	0	13
	%	0%	77%	23%	0%	0%	100%
I would recommend this workshop to colleagues.	n	0	11	2	0	0	13
	%	0%	85%	15%	0%	0%	100%
This training will help me to design units and lessons in my content area that will help students meet technology standards.	n	0	9	4	0	0	13
	%	0%	69%	31%	0%	0%	100%
The workshop provided materials and information that will allow me to improve my teaching.	#	1	9	3	0	0	13
	%	8%	69%	23%	0%	0%	100%
This workshop was appropriate for my level of pre-workshop knowledge.	n	1	9	3	0	0	13
	%	8%	69%	23%	0%	0%	100%
I will be able to teach the skills learned in this workshop to others.	n	0	9	4	0	0	13
	%	0%	69%	31%	0%	0%	100%

Among the 13 participants who responded to the post-training survey for the Mobility Workshop, level of agreement on its effectiveness, value, and usefulness was very high (See Table 22.). All participants indicated they would be able to teach the skills learned.

M³ Staff also supported training in the use of Hand Held devices. Handheld Workshop Feedback from participants indicated that the workshop was well planned and presented. Many participants felt that the information was very beneficial and would be useful to them in their instructional programs. Comments included:

- This class has been wonderful! I have learned so much! You have done an excellent job of working with us! WSU is losing an outstanding educator AND TECH GEEK! (smile) You have made this class easy and FUN! Thanks a million!
- This was great. I learned a lot. I got some good ideas that I can incorporate with my Cassiopeia. Although I don't have the palm, there are a number of applications that I can adapt for my PDA and use in my classroom. The data collection for example can be used in conjunction with my lab activities. I still want to research a grade package possibility.
- I will recommend this workshop to others if it is offered again.
- Great class Rick. Thanks. Very beneficial information.
- This workshop was great! I really liked working with the computer & hot syncing & downloading. The only suggestion I have is if we're going to spend a lot of time on the computer, make sure everyone has access to one. I spent a fair amount of time sitting around while the person I shared a computer with searched for stuff I was not interested in.
- I can also see using the recorder to make student voice recordings.
- This was an interesting class but also somewhat frustrating due to my lack of computer skills. I have troubles mainly with downloading and filing. I'm not sure I am ready to own a PDA. This class was very good and I know a lot more than when I started.
- As you said, it's a good start.
- I enjoyed this class. Things did go very fast and I felt that most people in the class had a great knowledge of PDA whereas I had none. I will be buying one and thanks to you, I know which one to buy.
- I have to say that I have enjoyed this class very much. I have learned much and I will be able to use most in my classroom as well as my personal use. That is, if I can remember it, of course I will give you an e-mail if I get into trouble. It helps to know I can get in touch with you. Thank you so much for giving out your e-mail. You did a great job teaching us and making learning fun. This would be great for a staff development in-service. Have you considered doing one? Again Thank You
- I really learned a lot. I hope you will consider teaching a follow-up class. It will be helpful to get hard copies of some of the processes you took us through, simply because there was so much information so quickly. Thanks :)
- I really enjoyed this class. I learned so much information. I am excited about purchasing a palm--I can't wait. I will use self-control and not purchase a device as soon as I leave today. I now know what a palm can do and what I need on my new palm. Thank you. I really appreciated all the tech support from Julie, Marsha, & Ben.
- Wonderful-very helpful I needed more individualized attention-Seems to be a great tool if I can remember all that was taught in class-Thanks for a great class.
- This has been a very informative class. I have really appreciated your patience and understanding. Thank you!!!
- I really enjoyed the class. The handbase is a very cool program. You did a great job of covering all the different aspects of using the PDA. An advanced users class would be interesting. Creating Avantgo forms, Wesync.com, Documents to Go & other cool stuff.

- I have enjoyed this class very much. I have learned much and I will be able to use this in my classroom and in other academic uses such as WSU classes as well as my personal use. It helps to know I can get in touch with you. Thank you so much for giving out your e-mail. You did a great job teaching us. Have you considered doing a staff development in-service? If so, please e-mail me and perhaps we can schedule you in before your schedule becomes too full. Again thanks.

Question 1c. *Did the faculty who experienced the training provided through the grant require students to use technology as outlined in the new technology standards, materials, and practices?*

Results of the Student Teacher Block Technology Survey - Fall 2000

A total of 52 student teachers completed the on-line questionnaire regarding their use of technology in their pre-service teaching experience. The information provided serves two purposes. The first is to indicate a level of technology that was available and possibly used by pre-service teachers during the first year of the grant. A document review of course syllabi, course descriptions and reported course activities indicated that some use of technology was being taught through a required COE technology course but, prior to the M³ grant, few other courses had utilized technology to present instruction or involve students in learning course materials. The second purpose of the on-line inventory was to establish a baseline of information about technology use by pre-service teachers. This baseline will be used over the life of the grant to determine if students participating in the student teaching block will have more opportunities to learn how to use technology as an instructional tool as well as involve their own students in the use of technology as a part of the instructional process.

Tables 24 through 28 provide responses from the student teachers regarding their use of technology during their student teaching block.

Students also participated in a pre- and post HPR*TEC on-line Basic Skills Survey. Table 23 contains a summary of all the items included on the survey listing the percent of

students that rated themselves as either familiar or fluent in the technology related item in the fall of 2000 and again in the spring of 2001.

Table 23. Student Teacher Pre- and Post HPR*TEC Basic Skills Profiler Results

Student Teacher - HPR*TEC Technology Basic Skill Items	Percent Familiar or Fluent		Increase/Decrease between Semesters
	Fall 2000	Spring 2001	
1. Install/reinstall system software and printer drivers	34%	55%	21%
2. Create a report (query/find request) in a database and sort the results	44%	52%	8%
3. Create a Web page	12%	58%	46%
4. Create a graph from spreadsheet data	43%	57%	14%
5. Record an audio file or digitize a video clip	18%	35%	17%
6. Send email messages and send/receive attachments	86%	97%	11%
7. Solve common printing problems	53%	67%	14%
8. Use advanced features of a word processor (tables, headers and footer, macros, table of contents, columns, etc.)	65%	90%	25%
9. Setup computer system and connect peripheral devices	31%	43%	12%
10. Access a specific Web page (URL) and search the Web using a variety of tools	79%	92%	13%
11. Cut, copy, and paste text both within an application and between multiple open applications	73%	90%	17%
12. Configure computer to connect with network	19%	30%	11%
13. Format/initialize a disk	47%	91%	44%
14. Create and maintain backups	32%	53%	22%
15. Create and use bookmarks/favorites	60%	77%	16%
16. Allocate memory to an application (Mac only)	6%	18%	12%
17. Scan a document	39%	63%	25%
18. Install application software	42%	67%	25%
19. Create an electronic presentation	27%	60%	33%
20. Manage names and groups in an address book	58%	73%	15%
21. Correct a locked up computer	36%	60%	24%
22. Download and decompress files	31%	57%	26%
23. Create, copy, move, rename, and delete folders	69%	85%	16%
24. Use formulas and/or functions in a spreadsheet	40%	48%	9%
25. Start up and shut down the computer; open and close an application/program; insert and eject a removable disk (floppy disk, CD-ROM)	97%	93%	-4%
26. Copy a graphic from a website	32%	83%	52%
27. Reduce, enlarge, or crop a graphic and convert graphics from one file format to another	29%	62%	33%
28. Subscribe and unsubscribe from a mailing list (listserv)	36%	53%	17%
29. Open a file from a floppy disk or a local or network hard drive; save a file to a floppy disk or to a specific location on a local or network hard drive	74%	88%	14%
30. Merge information from a database into a word processing document (mail merge)	26%	45%	19%

Data in Table 23 indicate that the percentage of students rating themselves as either “familiar” or “fluent” increased in 29 of the 30 items included on the survey between the pre- and post administrations. These data indicate that overall, students' ability to apply basic computer (technology) skills improved over the course of the first year of the grant.

An on-line survey was also developed by the WSU M³ evaluation team to assess the use of technology related to the items included on the PT3 annual report. Results are in Table 24.

Table 24. Technology Availability during Student Training Block

Item: During the time that you were in your Student Teaching Block, which of the following types of technologies were available to you at your assigned school(s)?		Yes	No	Don't Know
Internet or web-based materials	n	45	4	3
	%	87%	8%	6%
Multimedia (scanners, digital cameras, CD-ROM)	n	36	9	7
	%	69%	17%	13%
Software packages for word processing, spreadsheets, databases	n	42	5	5
	%	81%	10%	10%
Teaching tools (Gradebook, Blackboard)	n	43	4	5
	%	83%	8%	10%
E-mail	n	42	9	1
	%	81%	17%	2%
Additional software packages (presentation software, reference tools)	n	29	7	16
	%	56%	13%	31%
Content specific software	n	33	6	13
	%	63%	12%	25%
Portfolio tools (e.g., HyperStudio)	n	11	15	26
	%	21%	29%	50%
Mobile Wireless computing	n	8	17	26
	%	16%	33%	51%

As shown in Table 24, a majority of students indicated that they had access in their assigned schools to most items on the list except portfolio and Mobile Wireless tools. Other types of technology that student teachers listed as being available:

- I am currently using a Palm Pilot to evaluate my class, grade, and take attendance.
- SmartBoard
- Television, VCR, Overhead
- film strip
- Very old and outdated Apple Iie's for the students to use
- Graphing calculators, CBL's, Sensors

Student Teachers were asked if they used specific types of technologies during the teaching block, and if so, how the technologies were used. Table 25 presents the results of this item.

Table 25. Use of Technology during Student Teaching Block

Item: Please answer Yes (Y) or No (N) to indicate if and how you used one or more of the following types of technologies during your teaching block.		Administrative/ Classroom Management		Used to prepare instruction		Used to present instruction		Taught students to use		Required students to demonstrate proficiency	
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Internet or web-based materials	n	17	33	40	11	14	36	12	39	4	44
	%	34%	66%	78%	22%	28%	72%	24%	76%	8%	92%
Multimedia (scanners, digital cameras, CD-ROM)	n	9	41	16	33	10	39	9	40	4	45
	%	18%	82%	33%	67%	20%	80%	18%	82%	8%	92%
Software packages for word processing, spreadsheets, database	n	30	20	37	12	16	33	9	41	3	46
	%	60%	40%	76%	24%	33%	67%	18%	82%	6%	94%
Teaching tools (e.g., Gradebook, Blackboard)	n	39	11	25	26	30	20	12	37	11	37
	%	78%	22%	49%	51%	60%	40%	24%	76%	23%	77%
E-mail	n	24	25	15	34	8	41	3	46	3	46
	%	49%	51%	31%	69%	16%	84%	6%	94%	6%	94%
Additional software packages (presentation software, reference tools)	n	12	38	15	35	16	34	9	40	3	46
	%	24%	76%	30%	70%	32%	68%	18%	82%	6%	94%
Content specific software	n	14	36	17	32	51	0	15	34	13	36
	%	28%	72%	35%	65%	100%	0%	31%	69%	27%	73%
Portfolio tools (e.g., HyperStudio)	n	1	49	3	46	1	47	0	49	1	48
	%	2%	98%	6%	94%	2%	98%	0%	100%	2%	98%
Mobile Wireless computing	n	1	47	2	46	2	46	1	46	1	47
	%	2%	98%	4%	96%	4%	96%	2%	98%	2%	98%

Feedback from the items included in Table 25 indicates that a majority of students participating in their student teaching block report that they used Internet and web-based materials and software packages to prepare instructional materials. A majority of student teachers also reported that they used teaching tools and content specific software to present instruction to students. However, few if any student teachers reported teaching their students how to use technology or requiring them to demonstrate proficiency in the use of technology as a part of course requirements.

Fifty pre-service teachers responded to a series of questions related to specific activities related to their student teaching block experience. Results are reported in Table 26.

Table 26. Activities during Student Teaching Block

Item: Prior to and during your teaching block, please indicate if you participated in any of the following activities by marking Yes (Y) or No (N).		Yes	No
Observed cooperating teachers in the schools modeling use of technology in instruction	n	38	12
	%	76%	24%
Worked individually with my students on technology-related projects	n	28	22
	%	56%	44%
Taught students modeling use of technology in instruction	n	26	24
	%	52%	48%
Observed College of Education faculty teaching classes in collaboration with my cooperating teacher	n	15	35
	%	30%	70%

A majority of student teachers (76%) indicated that they observed their cooperating teacher model use of technology in instruction. Student teachers reported working individually with students in technology related projects (56%). They also taught students modeling use of technology in instruction (52%). However, only 30% of the student teachers reported observing COE faculty teaching classes collaboratively with their cooperating teacher.

Student teachers were asked in what ways WSU teaching staff modeled the use of technology. Findings are presented in Table 27.

Table 27. Modeling of Technology Use by Teaching Staff

Item: During preparation for my teaching block, WSU teaching staff modeled the use of technology in one or more of my courses in the following way?		Yes	No
Used the Web as an on-line resource for syllabi, lesson plans, and course materials	n	48	4
	%	92%	8%
Required students to use the Web to conduct research, including accessing documents and on-line bibliographic services	n	44	7
	%	86%	14%
Used presentation software and multimedia (including digital cameras and scanners) to make presentations and demonstrate learning activities	n	42	10
	%	81%	19%
Required students to use presentation software and multimedia (including use of digital cameras and creation of electronic presentations)	n	35	17
	%	67%	33%
Used videos of Model Technology Teachers to provide Best Practice Examples of how to integrate technology in classroom instruction	n	19	33
	%	37%	63%
Used interactive electronic tutorials to teach specific lessons or material	n	25	27
	%	48%	52%

A majority of student teachers reported that WSU teaching staff modeled the use of technology in a variety of ways during preparation for student teaching, as shown in Table 27. Exceptions were noted in model teaching videos and interactive electronic tutorial.

In order to establish a baseline during the first semester, pre-service teachers were asked to rate their current level of ability to integrate technology into classroom instruction. Table 28 presents these self-ratings.

Table 28. Pre-Service Teacher Self-Rated Level of Ability to Integrate Technology

Item: Overall, which of the following stages best describes your current level of ability to integrate technology into classroom instruction?	Frequency	Percent
<i>Awareness</i> I am aware that technology exists but have not used it perhaps I'm even avoiding it. I am anxious about the prospect of using computers or other forms of technology in my classroom.	3	5.88%
<i>Learning the process</i> I am currently trying to learn the basics. I am sometimes frustrated using computers/technology. I lack confidence when using computers or other forms of technology.	4	7.84%
<i>Understanding and application of the process</i> I am beginning to understand the process of using technology and can think of specific tasks in which it might be useful.	15	29.41%
<i>Familiarity and confidence</i> I am gaining a sense of confidence in using the computer or other forms of technology for specific tasks. I am starting to feel comfortable using technology.	13	25.49%
<i>Adaptation to other contexts</i> I think about technology as a tool to help me and am no longer concerned about its use. I can use it in many applications to prepare for and involve students in instruction.	10	19.61%
<i>Creative application to new contexts</i> I can apply what I know about technology in the classroom. I am able to use it as a tool to involve students in innovative ways. I frequently integrate technology into the way that I involve students in instruction.	6	11.76%
Total	51	100%

First semester responses to the scale outlined in Table 28 indicated that 43% of the students describe their level of use of technology as either the awareness (6%), learning the process (8%), or understanding and application of the process (29%). Twenty-five percent of the students reported that they were at the fourth level on the scale indicating that they were beginning to feel comfortable with using the computer and other forms of technology for doing

specific tasks. Another 20% of the students reported being able to use technology to prepare for and involve students in instruction, while the remaining 12% felt that they could use technology as a tool to involve students in innovative ways.

Discussion of ISTE Standards and Pre-Service Teacher Feedback

Feedback from students involved in their student teaching block indicates that WSU COE faculty has begun the process of infusing some technology into instruction. However, according to the ISTE Standards Matrix (Appendix C) used to assess use of technology in courses included in the teaching block, technology was being infused into only a few of the courses offered at the outset of the grant.

Content of the table included in Appendix C, indicates that CI 328, a technology course, was cited most often as providing learning experiences aimed at meeting the ISTE standards. It should be kept in mind that the data in the matrix are reflective of course offerings prior to the M³ grant being initiated. The matrix will be updated in the fall of 2001.

Shown below are comments made by Block 2 Pre-Service Teachers after participating in an M³ sponsored technology demonstration. It can be concluded from these comments that the students that are preparing for their student teaching experience are excited about the prospects of incorporating technology into their instructional practices.

- Today's activities were fun. Hopefully I will get to use some of them in my classroom.
- I loved yesterdays activities
- I thought today's activities were fun. I learned about stuff that will be very useful to me in the future like the digital camera and the portable podium.
- LOVED WHAT I LEARNED!!! The range of choices for educators today is astonishing. I especially loved the SmartBoard for the ways it could expedite teaching kids about Internet searches. The next piece I would emphasize (and maybe you will on Friday or during their presentations) is connecting with specific tasks these tools can help with in the course of standard topics/skills in a given curriculum and what the strengths and weaknesses of particular technology are for helping with these tasks.

For example, I found the palm pilots/springs REALLY intriguing because I know NOTHING about them. I could see the myriad ways they could help teachers stay organized (big blessing), but then wanted to think more about how students could use them. The more sophisticated this technology the greater the possibilities and pitfalls. A possibility: increasing the font size of text so that kids who need it can read the same book everyone else is more easily. A liability: zapping each other's palm pilots with infrared as a new form of passing notes! (Makes it REALLY hard to detect off-task behavior!) So much more here, Alan. Would be glad to talk/learn more face-to-face.

- Today was a lot of fun. I have never had the chance to work with some of the activities that were available to us today. The SmartBoard was cool!!!!
- Fun activity, neat technology. See you Friday.
- I had a lot of fun today in the technology lab. I didn't know there was so much new stuff out that I had never used!
- I really enjoyed the activity...I have not worked with most of the technology, so I am glad I had the chance to experiment with it.
- I enjoyed today's activity, but some of the items seemed very expensive, in all of the schools I have been in so far they cannot afford things like the digital camera and the writing board (I know that's not what it was called, but I can't remember the name.) you know, the thing that was in the classroom. I think students would enjoy the Africa bike trip, and the musical instruments stations, and I'm sure these things are a little more affordable.
- The activities were very interesting. I just wish all schools could have access to technology like that. Maybe they will in the future.

WSU Faculty HPR*TEC Basic Skills Profiler

WSU Faculty and staff also completed a PT3 Basic Skills Profiler at the beginning of the 2000-2001 to establish baseline for Year 1 of the grant. Table 29 contains results of how COE Teacher Education Faculty and COE Non-Teacher Education (e.g., administration, counseling) Faculty rated their abilities using the Profiler scale. The M³ Staff utilized the Profiler feedback to set overall training objectives for WSU faculty in-services to be presented during the first year of the grant.

Information from the baseline also will be used for comparison purposes over the life of the grant to determine the increase in the skill levels of WSU teachers and staff.

Table 29. Baseline Results for WSU Faculty HPR*TEC Basic Skills Profiler

Responses choices: U=Unable, A=adequate, Fam=familiar and Flu=fluent	COE Non Teacher Education Faculty (N= 18)				COE Teacher Education Faculty(N= 14)			
	U	A	Fam	Flu	U	A	Fam	Flu
Skill								
1. Install/reinstall system software and printer drivers	22%	6%	22%	50%	21%	14%	36%	29%
2. Create a report (query/find request) in a database and sort the results	11%	39%	17%	33%	14%	29%	36%	21%
3. Create a Web page	61%	6%	6%	28%	57%	29%	7%	7%
4. Create a graph from spreadsheet data	11%	28%	33%	28%	29%	14%	29%	29%
5. Record an audio file or digitize a video clip	56%	0%	33%	11%	57%	36%	7%	0%
6. Send email messages and send/receive attachments	0%	0%	0%	100%	7%	0%	0%	93%
7. Solve common printing problems	6%	22%	11%	61%	7%	29%	36%	29%
8. Use advanced features of a word processor (tables, headers and footer, macros, table of contents, columns, etc.)	0%	6%	28%	67%	7%	7%	50%	36%
9. Setup computer system and connect peripheral devices	22%	11%	11%	56%	36%	0%	36%	29%
10. Access a specific Web page (URL) and search the Web using a variety of tools	0%	6%	17%	78%	0%	14%	14%	71%
11. Cut, copy, and paste text both within an application and between multiple open applications	0%	0%	6%	94%	0%	14%	0%	86%
12. Configure computer to connect with network	50%	0%	39%	11%	36%	36%	21%	7%
13. Format/initialize a disk	6%	17%	11%	67%	7%	7%	21%	64%
14. Create and maintain backups	0%	22%	33%	44%	0%	7%	29%	64%
15. Create and use bookmarks/favorites	0%	11%	11%	78%	7%	0%	43%	50%
16. Allocate memory to an application (Mac only)	61%	6%	0%	33%	57%	21%	14%	7%
17. Scan a document	28%	17%	6%	50%	36%	7%	21%	36%
18. Install application software	17%	6%	11%	67%	21%	21%	21%	36%
19. Create an electronic presentation	6%	17%	33%	44%	21%	36%	21%	21%
20. Manage names and groups in an address book	6%	11%	6%	78%	7%	21%	36%	36%
21. Correct a locked up computer	28%	11%	22%	39%	14%	29%	36%	21%
22. Download and decompress files	17%	22%	22%	39%	21%	21%	50%	7%
23. Create, copy, move, rename, and delete folders	0%	17%	6%	78%	7%	0%	14%	79%
24. Use formulas and/or functions in a spreadsheet	22%	22%	33%	22%	43%	14%	14%	29%
25. Start up and shut down the computer; open and close an application/program; insert and eject a removable disk (floppy disk, CD-ROM)	0%	0%	0%	100%	0%	0%	14%	86%
26. Copy a graphic from a website	17%	22%	17%	44%	21%	14%	43%	21%
27. Reduce, enlarge, or crop a graphic and convert graphics from one file format to another	28%	22%	17%	33%	43%	14%	29%	14%
28. Subscribe and unsubscribe from a mailing list (listserv)	0%	17%	22%	61%	21%	29%	0%	50%
29. Open a file from a floppy disk or a local or network hard drive; save a file to a floppy disk or to a specific location on a local or network hard drive	0%	17%	22%	61%	0%	14%	29%	57%
30. Merge information from a database into a word processing document (mail merge)	17%	22%	28%	33%	29%	21%	36%	14%

*Percentages may not add to 100% due to rounding.

Sixty-one WSU faculty and Partner Teachers involved in the M³ Grant also completed an on-line questionnaire describing their stage of adoption of technology at the beginning of the M³

Grant. Data in Table 30 indicate that there was a wide range of stages expressed among respondents.

Table 30. Self-Rated Stage of Adoption of Technology

Item: Overall, which of the following stages best describes your current level of technology adoption (at the beginning of the fall semester 2000-2001)?		COE Faculty	Partner Teacher	LA/FA Faculty	All Participants
<i>Awareness</i> I am aware that technology exists but have not used it perhaps I'm even avoiding it. I am anxious about the prospect of using computers or other forms of technology in my classroom.	n	0	4	0	4
	%	0%	7%	0%	7%
<i>Learning the process</i> I am currently trying to learn the basics. I am sometimes frustrated using computers/technology. I lack confidence when using computers or other forms of technology.	n	2	4	0	6
	%	33%	7%	0%	10%
<i>Understanding and application of the process</i> I am beginning to understand the process of using technology and can think of specific tasks in which it might be useful.	n	2	14	0	16
	%	33%	25%	0%	26%
<i>Familiarity and confidence</i> I am gaining a sense of confidence in using the computer or other forms of technology for specific tasks. I am starting to feel comfortable using technology.	n	1	19	0	20
	%	17%	35%	0%	33%
<i>Adaptation to other contexts</i> I think about technology as a tool to help me and am no longer concerned about its use. I can use it in many applications to prepare for and involve students in instruction.	n	1	9	1	11
	%	17%	16%	100%	18%
<i>Creative application to new contexts</i> I can apply what I know about technology in the classroom. I am able to use it as a tool to involve students in innovative ways. I frequently integrate technology into the way that I involve students in instruction.	n	0	5	0	5
	%	0%	9%	0%	8%
Total	n	5	55	1	61
	%	100%	100%	100%	100%

As shown in Table 30, the number of WSU Faculty responding to the questionnaire was small and therefore did not lend itself to meaningful analysis. However, feedback from Partner School Teachers indicated that over half of those responding felt that they were beginning to use technology for specific tasks (Stage 4), adapting its use to other contexts (Stage 5), or, in a small number of cases, integrating it in a way that frequently involved students (Stage 6).

In accord with the Concerns-Based Adoption Model (CBAM) assessment of concerns were made from open-ended statements made by M³ Grant participants about their role in preparing pre-service teachers to become technologically proficient graduates. Analysis of these concerns provide a baseline for understanding issues perceived by participants as well as ways to better accomplish project goals.

Responses were invited to the open-ended question, “Based on your knowledge to this point of the Project M³ Grant, what concerns do you have about your role in preparing pre-service teachers to become technologically proficient graduates?” The concerns expressed were categorized according to the CBAM Stages of Concern concept. Frequencies of responses in each category are reported with descriptions of the stages (Newlove & Hall, 1998) in Table 31.

Table 31. Participant Stages of Concern

Stage of Concern	Frequency	Percent
Awareness – Little concern about or involvement with the innovation is indicated.	10	33.3%
Informational – A general awareness of the innovation and interest in learning more detail about it is indicated.	2	6.7%
Personal – Individual is uncertain about he demands of the innovation, his/her inadequacy to meet those demands, and his/her role with the innovation.	4	13.3%
Management – Attention is focused on the processes and tasks of using the innovation and the best use of information and resources.	12	40.0%
Consequence – Attention focuses on impact of the innovation on students in his/her immediate sphere of influence.	2	6.7%
Collaboration – The focus is on coordination and cooperation with others regarding use of the innovation.	0	0.0%
Refocusing – The focus is on exploration of more universal benefits from the innovation, including the possibility of major changes or replacement with a more powerful alternative.	0	0.0%
Total	30	100.0%

The specific comments to the open-ended concern question follow.

- Technology is not just about using computers to teach with. It is about making it easier for the teachers to educate their students. This includes systems to provide information directly to the teacher (e-mail, principals bulletins, lesson plans, etc.) It is about locating resources, combining resources and implementing policies that assist the teacher, not implementing requirements that add to the overload of our already overburdened teachers.

- With only one computer in the classroom, it is sometimes difficult to use on-line sources. I would like to have a larger video monitor connected to my computer to present Power Point presentations, etc. Of course, the library is always available for individual instruction on computers.
- Practice is the key, if they are required to use the technology as part of a class then they will not be reluctant to use it in their classrooms.
- I didn't even know that there was a M³ Grant.
- Availability and access to equipment - only 1 computer in room doesn't allow for much time for classes of 30 students to access technology. Also, schools with low SES population means that many students don't have access to technology in their low income homes.
- What is Project M³? I am very comfortable with the use of computers and several different types of computer based technology. For me, computers and computer-based technologies are tools (much like a hammer and saw); they are to be used as tools to further learning, not as a course of instruction unto themselves. Much like learning to drive, our students tend to learn to use the computer and its many technologies in spite of our efforts rather than because of our efforts.
- My primary concern is the lack of opportunity for teachers to become adequately trained in technology during the course of a school year.
- In Special Education the use of integrated technologies is a great asset. The major problem that I have is that we do not have the equipment needed to implement programs in our classrooms and we do not have a computer lab where special software could be used to assist this special population.
- Concern: That I have enough information myself to effectively prepare pre-service teachers in my classroom.
- My concerns include having the capabilities to incorporate technology in the classroom for all my students.
- Preparing pre-service teachers to use technology is not part of my contractual teaching duties.
- We need to have training in how to use the few wireless computers with a full high school-sized class of students, not how the college does it with their small classes. How do we keep all of the students on task, when we have thirty students and five computers, especially when, in our training, only one of the five computers worked with the "trained" person trying to work them. It was very depressing to see failure in action. I currently use the Internet at home to help students with their homework problems. We have formed our own "groups", and can communicate instantly with each other.
- A concern I have about my role in preparing pre-service teachers to become technologically proficient graduates is receiving professional pay for my preparation. Also, at Wichita North High, there is not a computer in every classroom. You may be told that every teacher has a computer but that is not true. Please walk the halls and peek in to the different classrooms and ask the teacher to point to a computer. Many teachers have them but even some that do have a computer, some computers do not work. Some old rooms in this building built in 1929, do not have appropriate outlets.
- No concerns
- Access to current materials. Curriculum specific. Availability of current material, content specific.

- I don't know that much about the grant, except that it involves use of wireless technology.
- Time is my biggest concern
- I'm not sure that I have a role in this.
- I do not have scanners, digital cameras or other multimedia equipment.
- None
- Being able to effectively implement the technology myself before training others to use it.
- No comments
- The only concern I have is the lack of availability to the tools, scanners, cameras, computers with sufficient memory etc to use the software.
- I personally do not have the expertise in technology to know what my role is
- My knowledge is slim to none in this field, and I have to admit that I'm not sure I want to know a whole lot more myself. Given all that, I will never feel qualified to teach technology of any sort.
- We have many computers in the classroom, but being able to have access to computers all of the time.
- I believe more technology should be used. I am a para and don't have a class of my own but will be receiving some formal tech training next year.
- I do not work with pre-service teachers, but with graduate students who are current and future school administrators. Our students are/will be the instructional leaders in their schools and districts in the appropriate use of technology. I'm not sure where my or other graduate students (e.g. in counseling, school psychology) fit into this grant; perhaps that was never the intent.

It should be noted that use of the data presented regarding participant stages of concern is limited due to the number of respondents. There were only a few (6) of the WSU faculty represented in the fall survey. Even though a greater number (55) of partner teachers than faculty responded to the on-line feedback form, those responding may or may not have been representative of all the partner teachers that may potentially become involved in the M³ Grant. In addition, out of the 61 individuals responding to the questionnaire, only 30 expressed any concerns regarding the M³ Grant or their role in relation to it.

Among the 30 participants who expressed concerns about their personal roles in preparing pre-service teachers to become technologically proficient graduates, the largest proportion (40%) reported concerns at the Management stage of concern (Table 31). Only 7%

expressed concerns reflecting attention to Consequence of the innovation. The remaining respondents described concerns at the stages of Awareness (33%), Informational (7%), and Personal (13%).

Question 1d. *What new or innovative practices involving technology were developed and communicated as a result of the grant?*

During interviews, participants provided information that suggested that COE faculty and partner teachers were beginning to utilize technology in innovative ways to enhance instructional practices. Two COE faculty members described how they had used web-based methods to change the content and delivery of instruction in two of their courses. One professor changed the delivery of one course that normally met weekly to a combination of periodic meetings coupled with a web-based interface where students could obtain assignments, course materials and references. The teacher was available for collaboration through e-mail. He shared student ratings for the course, all of which were very high. Another instructor re-designed her course to include the use of Blackboard, WebQuests, and PowerPoint. She revealed how making changes in the course meant that she had to learn how to meet objectives in low tech, medium tech, and high tech environments. Students had to learn how to use technology, e-mail, and Portable Document Files. She reported that there was resistance at first. However, student demand for this section of the course increased by 100% between 1st and 2nd semester.

One elementary school partner teacher reported involving her 5th grade students in using computers to program Lego Robotics. The software and equipment for the project was provided through a \$10,000 grant to the M³ Project from the Boeing Company. In this project, teams of

students developed robots using Lego's and wrote simple software programs to manipulate the robots.

A high school teacher reported that after receiving training from the M³ Staff, she used the Mobile Lab Laptop computers provided through the grant to build a WebQuest on genetics (permeate squares). She reported that her students became very interested in their findings. She reported that it was an excellent way to introduce and teach probability in a much different way than she had used in the past. She also reported building a Web page that was used by honor students to do statistics. She had students use the laptops to do Internet searches for research. Students were required to research eight case studies. They used a system checker to access information on the Internet. She reported that she made the use of technology a course requirement and factored it in as a part of each student's grade.

A middle school teacher reported using the Mobile Lab at her school to involve students in a special education classroom as an accommodation for students in completing writing assignments. Special education accommodations allowed for the use of software for spelling and grammar checks. She stated that she had used Blackboard on the mobile lab in her classroom to help students develop skills included on the State Writing Assessment and District Benchmark Writing Assessment. She reported that students that used the computer to complete the Benchmark test made passing scores.

Feedback from this sample of COE faculty and partner teachers indicates that first year M³ Grant activities have started to make an impact on how technology is changing instructional practices at both the university and K-12 level. However, several of the K-12 teachers that were interviewed suggested that information about the grant was limited, especially in the partner

Schools where the Mobile Labs had not been placed. Typical comments and suggestions made by some of the interviewees were:

- They (M³ staff) need to be more available. Our staff doesn't really understand M³ grant. They don't tell you how to get hold of them. People don't know what they want.
- I wasn't aware of everything that was available. They should tie in student mentors to presentations. How to make us more aware. Communication newsletters.
- I would like to have more information of what is available. Everyone's awareness should be raised.
- Right now, it is too open-ended to be effective at our school.

Key Findings for Goal 1

Multiple quantitative and qualitative indicators were used to assess progress made through the M³ Grant to assist members of the WSU teacher education (TE) faculty, PreK-12 partner faculty, and LAS and FA faculty in effectively modeling the integration of technology into pre-service teacher education and content area coursework. Listed below are key findings related to M³ Goal 1 Objectives.

Year 1 Objective 1.1 Models in Teacher Education

TE faculty in the COE will increase the use of technology in teacher education coursework.

- Baseline documentation was developed to assess infusion of ISTE standards into core teacher education courses. Preliminary results indicated the need to expand the use of technology in most of the core courses offered during the student teaching block.
- Baseline questionnaire results indicated that 43% of the COE Faculty and K-12 Partner Teachers responding rated their stage of adoption of technology at the awareness, basic use, or beginning use levels. Thirty-three percent (33%) reported that they were gaining a sense of confidence about using the computer and other forms of technology for specific tasks. Eighteen percent (18%) reported that they were using technology to prepare for and involve students in instruction. However, at the beginning of the year, only 8% of those completing the questionnaire reported frequently integrating technology in a way that involved students in instruction.
- Thirty-three percent (33%) of COE Faculty and K-12 Partner Teachers responding to the baseline survey expressed little concern or involvement with the use of technology. Other respondents expressed concerns related to learning more about technology (7%), their role in its use (13%), or how they would manage the use of technology in instruction (40%). Only 7% expressed concerns about how the use of technology might impact instruction. None of the respondents made initial statements about how they might collaborate with others about using technology or exploring more universal benefits of integrating technology into instruction.
- A high percentage of COE Faculty and K-12 Partner Teachers participated in a number of technology related Project M³ workshops during the first year of the grant. Feedback from participants regarding the workshops was positive.
- First year M³ evaluation results obtained from interviews and surveys indicate that COE faculty and K-12 partner teachers are beginning to use a greater variety of hardware and software applications to redesign courses and present instruction. Several faculty and staff indicated that they have begun to use the Wireless Mobile labs, Blackboard, and other web-based software to involve students in instruction.

- Pre- and post HPR*TEC PT3 Basic Skills Profiler survey results indicated that pre-service teachers participating in student teaching block courses increased their technology skill levels in 97% of the items included on the survey between fall and spring semesters.

Year 1 Objective 1.2 Models in PreK-12 Schools

PreK-12 teachers identified as technology mentors for pre-service teachers will increase the use of and level of use of technology in their classrooms by designing, implementing, and disseminating models of practice.

- The TIPS website for posting models of practice was developed. There is evidence that teachers are not only accessing the website but also sharing formally and informally the models presented.
- Several teachers participating in interviews about the M³ Project reported developing their own applications of technology, for example, through design of multimedia projects and web pages.
- Overall feedback from K-12 Partner School teachers indicated during interviews that information about the M³ Grant was not well publicized in their schools. They felt that there was a lack of understanding about the M³ Project and how teachers could access support or services available through the grant.

Year 1 Objective 1.3 Models in LAS and FA

Faculty in LAS and FA who teach pre-service teacher education students during their General Education and major coursework will increase the use of and level of use of technology in their classrooms by designing and implementing models of practice.

- Demonstrations of wireless technology increased communication about its use within the COE, as well as with other colleges and units on campus.
- Exposure to and use of technology in LAS and FA were expanded to include video, Internet, and PDA projects.
- Development has begun in the use of technology in some music education course offered in LAS/FA.

Year 1 Objective 1.4 Model Practitioners in Partner Schools

WSU will increase the number of model practitioners infusing information technology into their PreK-12 classrooms to serve as role models and mentors for pre-service teachers.

- During Year 1 of the project, M³ staff began an informal process of identifying K-12 teachers that demonstrated higher levels of skills and integration of technology. M³ Staff is designing a process for involving these practitioners as models, cooperating teachers, mentors, and/or in-service instructors during the second and third years of the M³ grant.

Conclusions/Recommendations

- Analysis of data gathered from multiple sources indicates that M³ Project personnel effectively planned and implemented a number of activities designed to achieve objectives related to Goal 1 during the first year of the M³ Project.
- It is recommended that the M³ Staff continue to involve a broad base of M³ Grant participants in developing and implementing a year 2 plan that outlines grant activities, levels of participation, and project evaluation activities.
- Project personnel should continue to plan for and provide opportunities for participants to expand their knowledge and technology related skills during the second year of the grant with emphasis on:
 1. infusing technology into core courses included in the student teaching block,
 2. expansion in the use of technology in K-12 Partner Schools, and
 3. increasing faculty involvement in teacher education related courses in LAS/FA.
- A greater effort should be made to develop a comprehensive set of materials outlining information about the grant and how individuals can access grant services. These materials should be made available for dissemination by all Project participants.

Goal 2: Mentors

The COE will coordinate the development of a broad-based network of mentors that will provide training and support for Teacher Education faculty, Liberal Arts and Fine Arts faculty, K-12 partners and pre-service teachers.

Year 1 Objective 2.1 Mentors from Business/Industry

Identify and utilize mentors from business/industry to provide training for grant partners

Year 1 Objective 2.1 Indicators of Achievement

2.1.A: Participant feedback on training survey form

2.1.B: Participant feedback on training survey form

2.1.C: What ways have you used Apple's ALI (units of practice) or on-line chats?

2.1.D.1: Number of student mentors and faculty enrolled.

2.1.D.2: Number of student mentors and faculty using it

Table 32. Year 1 Objective 2.1 Activities and Results

Objective 2.1 Activities	Objective 2.1 Results
<p>Apple Computer is a partner in the M³ Grant and provided an on-line training course for several of the COE faculty and staff over a series of weeks.</p> <p>M³ Staff worked with the System Engineer from Apple to set up AirPort. Corey Carson showed the M³ Staff how to configure the AirPort on North High School's network. Corey covered the details about wireless and range extending antennas. Two representatives from the WSU college of engineering attended as well.</p> <p>Tonya Witherspoon, M³ Staff, approached Jonathon Bradshaw of Boeing Wichita about becoming a partner in a project that would teach and promote learning about the use of technology through robotics.</p>	<p>Five faculty and the M³ Project Evaluator participated in the on-line course titled, "Teaching, Learning and Technology, A Planning Guide". This course occurred over several weeks.</p> <p>The AirPorts were installed at North High School and the process was used to install the Apple AirPorts being used at WSU as well. The M³ Staff held additional meetings with the WSU Engineering department to assist them in the installation and operation of their own wireless network.</p> <p>The Boeing Company provided a \$10,000.00 grant to help acquire the equipment and software for the project. Boeing grant monies are being used to purchase Lego MindStorms Robotics kits for classroom teachers who participate in training workshops and submit a proposal for classroom projects. Eighteen teachers were trained during Spring 2001 semester. Three of those teachers entered their students in the Robotics Competition jointly sponsored by the College of Engineering and the College of Education in April. Grant staff members participated in planning the event, provided technical support, and served as judges for the event. M³ laptops, carts, video and digital cameras were used during the competition. 86 K-12 students participated in the competition. Fifteen Lego kits have been purchased and distributed.</p>

Objective 2.1 Activities	Objective 2.1 Results
<p>Haddock Computer provided the services of Kalab Henley to assist in setting up the EOE FileMaker Pro databases.</p> <p>M³ Staff attended a workshop at ESSDACK on FileMaker to support web-based databases to be used for faculty and student support.</p> <p>M³ Staff established a COE Technology Advisory Committee (TAC) with 20 representatives from area businesses and schools.</p> <p>Marsha Gladhart, M³ Director, held a series of meetings with Rod Sprague, USD 259 Wichita Public Schools Technology Coordinator about how M³ and USD 259 could collaborate in the development and implementation of the Connected University, a distance learning provider under contract with USD 259. M³ participation is a result of our partnership with USD 259.</p> <p>Rick Weaver met with Bob Ward of SoftTec and Randy Ellsworth to explore solutions for St. Patrick's poor networking equipment and hardware.</p>	<p>FileMaker server was implemented and used to support student advising.</p> <p>FileMaker database was configured for Web access so that faculty could have easy access to records and technology integration tools.</p> <p>TAC met twice during Year One and recommended stronger emphasis on handheld computing and robotics and suggested marketing strategies for workshops and courses.</p> <p>M³ staff members reported that the Connected University courses are of high quality and that they are satisfactory learning experiences. Twenty-five PK-12, 3 staff and 8 Student mentors took part in Connected University courses during the year.</p> <p>Bob Ward, a business partner with the M³ Grant provided access to a server for the school.</p>

Year 1 Objective 2.2 Mentors from Professional Resources

Identify and utilize mentors from professional resources to provide training and support for grant partners

Year 1 Objective 2.2 Indicators of Achievement

- 2.2.A: SCR*TEC profiler Basic Skills checklist and integration survey
- 2.2.B: Number of joint training sessions provided
- 2.2.C: Number of teacher education faculty receiving training through the CTRE
- 2.2.D.1: HP*TEC Profiler Basic Skills checklist and integration survey
- 2.2.D.2: List of faculty mentors will be published on M³ website.
- 2.2.E: Articles published in Tech Talk and Community Newsletters
- 2.2.F: Plans developed to support on-line training

Table 33. Year 1 Objective 2.2 Activities and Results

Objective 2.2 Activities	Objective 2.2 Results
<p>The M³ Project co-sponsored EXCITED about On-line Teaching. M³ staff provided technical support for laptop poster sessions.</p> <p>Met with Chuck Romig, Chair of the COE Professional Development Committee to coordination Professional. Development Committee and M³ activities training.</p> <p>Shared Profiler results that indicate need for training in database, spreadsheet, and graphics.</p>	<p>This served as a great opportunity for the staff to talk to WSU faculty about laptops and on-line learning.</p> <p>Chuck indicated that the Professional Development Committee would be happy to let the M³ Staff facilitated the professional development activities necessary to meet the needs of the COE</p>

Year 1 Objective 2.3 Mentors from Model Practitioners

Identify and utilize mentors from model practitioners in the schools to provide training for partners

Year 1 Objective 2.3 Indicators of Achievement

- 2.3.A.1 Workshops will be presented by experts identified.
- 2.3.A.2 Participants will express satisfaction with the training.
- 2.3.B.1 Workshops will be presented by model teachers identified.
- 2.3.B.2 Participants will express satisfaction with the training.
- 2.3.C TAB is made up of partner school tech support to discuss technology integration problems and solutions.

Table 34. Year 1 Objective 2.3 Activities and Results

Objective 2.3 Activities	Objective 2.3 Results
<p>Faculty and partner school field trip to Maize School District to see model practitioners and how they are utilizing technology in the instructional program. Eleven COE faculty and staff participated in a field trip to Oklahoma State University Technology Center.</p>	<p>13 COE and partner school teachers visited the Maize School District. This trip continued to be a topic of conversation during the spring semester. It also strengthened The WSU M³ relationship with the Maize schools, which will become a Master's in Education site in fall, 2001. Mentors and Model Practitioners will be identified through those Maize teachers that are enrolled in the Masters Program.</p> <p>The 13 participants completed a pre-post questionnaire about what they learned as a result of the visit. A majority of those participating in the Field Trip indicated that they left the school district with a much better idea of how technology could be utilized to enhance the learning opportunities available to students.</p> <p>Eleven faculty and staff attended a field trip to OSU (3 staff members, 1 FA faculty, 7 COE faculty and staff)</p>

Objective 2.3 Activities	Objective 2.3 Results
Teachers that participated in the M ³ -TIPS project were also asked to be model teachers that would serve in this capacity as well.	Some of the USD 259 Wichita Public Schools Teachers participating in the TIPS project were from other schools within the District. These teachers were recruited to help in mentoring and training M ³ Partner School teachers and staff.
Rick videotaped Laura Gossage from one of the partner schools doing a WebQuest activity using laptops in her classroom with the AirPort.	Video clips are being made for use in teacher education classes and to present at conferences, showing participants ideal ways to integrate technology into classrooms.

Year 1 Objective 2.4 Student Mentors

Continue to use student mentors to provide training and support for grant partners.

Year 1 Objective 2.4 Indicators of Achievement

2.4.A.1 Number of training sessions held

2.4.A.2 Participants will express satisfaction with the training.

2.4.B.1: Number of businesses participating

2.4.B.2: Participants attending

Table 35. Year 1 Objective 2.4 Activities and Results

Objective 2.4 Activities	Objective 2.4 Results
<p>The WSU Student Mentoring component, initially established as a part of the Excite Catalyst Grant, was expanded as a part of the Wichita State University M³- PT3 grant. During the first semester of 2000-2001, seven M³ student mentors logged a total of 546 contact hours in direct support of WSU COE faculty and grant partners. Major projects included the development of Help sheets that were created at faculty request and posted on a Website maintained by the College of Education Technology Center. Help sheet topics ranged from Desktop Wellness for the Macintosh to building Adobe Portable Document files. Other mentoring activities included extensive one-on-one assistance in the software and hardware applications ranging from the use of MS Office Word, Excel and PowerPoint, Blackboard, and digital video imaging, to setting up and supporting mobile computing labs.</p> <p>During the second semester, four of the original Student Mentors entered their student teaching block and were replaced by new mentors. The new mentors underwent training and joined the remaining student mentors in providing support for grant participants in the following areas: Blackboard on-line course development, Webpage Development, USD 259 Technology Projects for</p>	<p>An on-line help web site was established at the WSU COE Technology Center and included guides and "how to" information that was requested by faculty and staff involved in the PT3 grant project. The help center can be viewed at: http://education.wichita.edu/techcenter/help2.htm</p> <p>During the first year of the grant seven M³ Student Mentors provided support for 99 individuals involved in the grant. Student Mentors worked with COE faculty and grant partners in 22 different technology areas. In addition, some student mentor hours were devoted to supporting the COE Technology Center where they were on call to provide assistance to students and WSU faculty in the use of hardware and software applications.</p> <p>Another major area being supported by the student mentors is the USD 259 Technology Projects for Students Website. (TIPS) Student mentors logged 200 hours in this project during the year. Student mentors assisted a group of COE faculty and partner teachers in developing and posting web-based elementary curriculum related materials, lesson plans, and activities in Science, Health and</p>

Objective 2.4 Activities	Objective 2.4 Results
Students Website (TIPS), FileMaker Pro Databases, Implementation of Wireless Mobile Labs, Computer Wellness Clinics, PowerPoint Presentations, Digital Video Editing, PDA's for organizational and classroom use, WebQuests for Internet Instruction, Use of scanners, digital cameras, projectors, SmartBoard, and other peripherals, and Basic computer skills such as; E-mail, Word, Excel, and use of the Internet. In total, the student mentors logged 1187 hours during second semester in support of the M ³ participants.	Math for teachers and parents. TIPS materials are aligned with Curriculum Standards established by the Wichita Public Schools and the NETS technology standards. TIPS materials can be viewed at: http://education.twsu.edu/m3/tips/index.htm A total of 99 project participants were served through the Student Mentoring program during the 2000-2001 school year. In all, 102 different projects were initiated, which resulted in 1194 separate mentoring sessions. Student mentors logged a total of 2429.5 mentoring hours during the first year of the M ³ grant.

Year 1 Objective 2.5 Parent Mentors

Develop parent mentors from the partner schools to provide support and training for grant partners.

Year 1 Objective 2.5 Indicators of Achievement

2.5.A.1: Parent Activities Advisory Group is made up of parents from partner schools.

2.5.A.2: The Parent Activities Advisory Groups advise Project M³ staff and school administrators on technology-related issues.

2.5.B Number of packets developed

2.5.C Number of student mentors attending parent workshops

2.5.D.1 Agenda of activities planned

2.5.D.2 Number of families participating at Parent Days at partner schools

Table 36. Year 1 Objective 2.5 Activities and Results

Objective 2.5 Activities	Objective 2.5 Results
<p>Marsha Gladhart attended a North High School Site Council Meeting to explain Project M³ and invite parent participation</p> <p>Developed parent pages on Web site for KMUW (Public Radio) Parents as Partners in Reading Workshop. (Rick, Julie, and Marsha)</p> <p>Marsha, Rick and Jeri met with principals over the course of two days - 3/15 and 3/16.at the partner schools (Jim McNiece, Howard Pitler, Sister Eloise Hertel, Ken Jantz) and planned the Parent Advisory Board and Student Mentor Day activity to be held in April.</p>	<p>10 parents and teachers attended and expressed interest in becoming more involved in M³ Project. 9 parents and teachers attended the workshop and received information on safety on the Internet and learned how to access the M³ parent web site. Principals from the Partner Schools identified 2 parents from each school to participate in the Parent Advisory Board. The first meeting was held in May. A Student Mentor Day was held on April 25th. Activities included in the Mentor day consisted of Wireless Web Quest, File Sharing, Signal Strength, Instant Messaging, Streaming files, PDA, Wireless Activities, Web Forms, and Music MixMan. 70 students and their teachers participated in the April 25th event. Feedback from students and teachers were extremely positive.</p> <p>Parent mentors have been identified for each partner school. A parent Web page is now available at the M³ Web site.</p>

Results Related to Goal 2 Evaluation Questions

Following are results related to the evaluation questions developed to monitor mentoring activities carried out during Year 1 of the M³ grant.

Question 2a. *Did COE M³ Project personnel identify a broad-based group of Mentors capable of providing quality technology training?*

A number of mentors were identified to help with specific grant activities over the course of the first year. Members of the Grant Consortium such as Haddock Computer and Apple Computer functioned in mentoring roles in helping WSU M³ Grant Staff become familiar with various aspects of setting up and operating the wireless mobile laptop computer labs. Additional forms of mentoring occurred through field trips conducted in neighboring school districts and at Oklahoma State University.

Primarily, a major portion of mentoring activities aimed at supporting WSU faculty and K-12 partner school teachers were provided through Student Mentors employed through the M³ Grant. In all, nine different Student Mentors were employed over the course of the year to fill seven part-time mentoring positions. During the first year, Student Mentors maintained logs of their projects and activities in a FileMaker Pro database. Summary information regarding M³ mentoring activities is discussed in relation to each of the evaluation questions outlined below.

Question 2b. *Did the Mentors provide training to the COE, LA/FA and K-12 Partners and Pre-service teachers?*

WSU Student Mentors provided training and/or support to COE, Language Arts/Fine Arts Faculty as well as K-12 Partner Teachers in the 23 different areas. Each of the Mentors worked with one or more Mentees in specific areas where the Mentor had developed a particular expertise. Most of the Mentor-Mentee mentoring sessions were developed around a "project"

approach. Once a Mentee identified an area of interest, the Mentor would assist the Mentee in developing the skills necessary to use the technology in presenting instruction. Primarily, mentoring sessions were focused on assisting WSU COE faculty members or K-12 teachers in building capacity to become independent technology users. However, in some cases, the Mentors were involved in specific grant support activities such as technical support in the Technology Lab and posting TIPS materials to the M³ Web Site. A summary of Year 1 M³ Mentoring activities is outlined in Table 37.

Table 37. Summary of Support and Services Provided by Student Mentors 2000-2001

Project / Support Type	Number of Contacts	Total Contact Hours:Minutes
Microsoft Word	2	1:15
Microsoft Excel	1	3:00
Blackboard Training and Course Development	141	155:45
FrontPage	17	24:15
Digital Video	21	44:00
Digital Imaging	39	47:30
SmartBoard	17	34:15
Mobile Laptop Labs	3	4:30
PowerPoint	35	31:15
Instructional Support	59	124:30
Digital Projectors	2	1:00
Handheld Computers	10	14:45
Other	116	209:00
FileMaker	57	83:15
Mentor Meetings	81	128:45
Mentor Instruction	49	147:30
COE Tech Support	78	196:30
Helpsheet Creation	4	6:45
COE Technology Center	10	41:45
Mentor Portfolio Development	86	163:30
TIPS	93	200:15
Unspecified Tasks from original Mentor Logs	204	546:30
Integration Team	69	219:45
Totals	1194	2,429:30

In all, Student Mentors logged a total 2,429.5 hours of mentoring activities while making 1194 contacts with 99 M³ COE and Partner Teacher Mentees. Some tasks appearing on the Mentor log included attending planning meetings, providing COE Technology Lab technical support, and working on the TIPS project. In these cases, Mentors were more involved in providing general technical support for the lab or posting curriculum units to the M³ Web Site than engaging in one-on-one mentoring activities.

Question 2c. *How effective was the training provided by Mentors?*

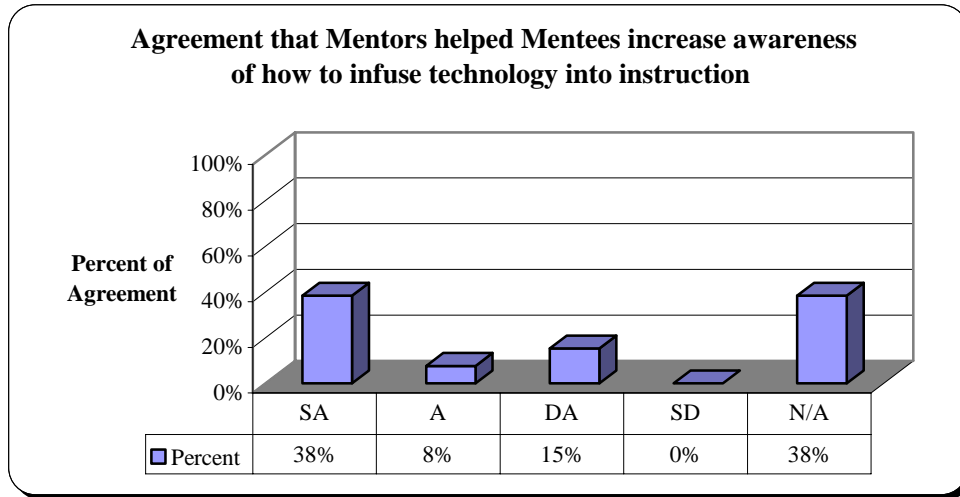
A number of items were included on the on-line feedback form used to gather data regarding the Mentoring Activities that occurred during the first year of the M³ Grant. Tables 38 through 40 and Figures 1 through 3 contain a breakdown of responses from Mentees regarding their agreement on the effectiveness of Mentors in providing support for the activities in which they were involved. Since some of the Student Mentors were involved in supporting more general M³ Grant activities such as developing and posting TIPS materials or providing technical support in the technology lab, COE or M³ Staff members responsible for those activities marked items 6, 7 and 8 on the survey as Not Applicable (N/A). This accounts for the large number of N/A responses on items that involved infusion or use of technology in instruction.

Table 38. Mentor Helpfulness in Increasing Awareness of Technology in Instruction

Item 6. [My Mentor] helped me increase my awareness of how technology can be infused into instruction.	Strongly Agree	Agree	Disagree	Strongly Disagree	Not Applicable*	Total
Frequency	15	3	6	0	15	39
Percent of Total Responses	38%	8%	15%	0%	38%	100%

* Includes responses for general support of M³ Grant activities such as Lab Technical Support and TIPS

Figure 1. Agreement about Mentor Help in Increasing Mentee Awareness of How to Infuse Technology into Instruction



As shown in Table 38 and Figure 1, a majority (75%) of faculty and teachers involved in the mentoring sessions centered on the use of technology in instruction agreed that the mentoring experiences increased their awareness of how to infuse technology into instruction. However when disregarding N/A responses, 25% of those remaining disagreed with the statement.

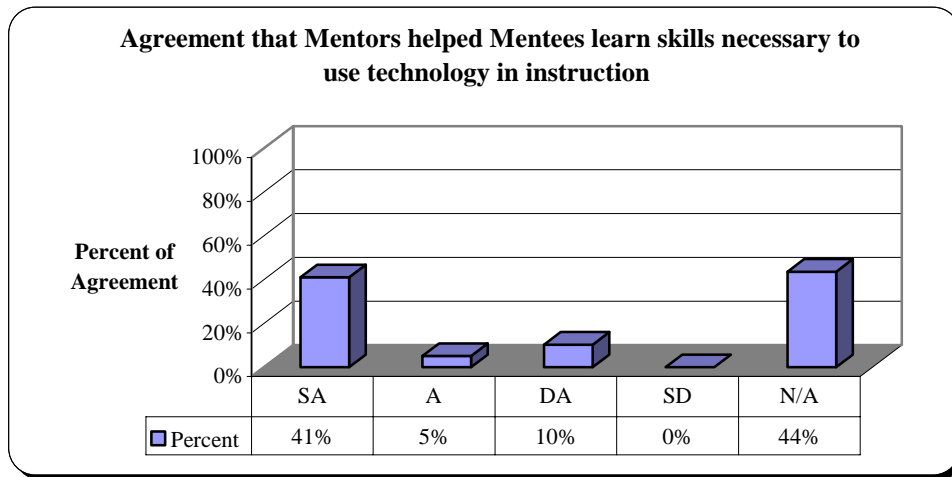
Mentees were asked about agreement with the statement, "[My Mentor] helped me learn the skills necessary to use technology in instruction." Their responses follow in Table 39 and Figure 2.

Table 39. Mentor Helpfulness with Learning Skills for Using Technology in Instruction

Item 7. [My Mentor] helped me learn the skills necessary to use technology in instruction.	Strongly Agree	Agree	Disagree	Strongly Disagree	Not Applicable*	Total
Frequency	16	2	4	0	17	39
Percent of Total	41%	5%	10%	0%	44%	100%

* Includes responses for general support of M³Grant activities such as Lab Technical Support and TIPS

Figure 2. Agreement Regarding Mentors Helping Mentees Learn Skills Necessary to Use Technology in Instruction



A majority (81%) of Mentees who expressed an opinion also agreed that their Mentor had helped them learn the skills necessary to use technology in instruction. However, overall responses from Mentees suggest that 44% of the mentoring projects reported did not involve activities that directly supported faculty or teachers learning new skills necessary for using technology in instruction (Table 39 and Figure 2).

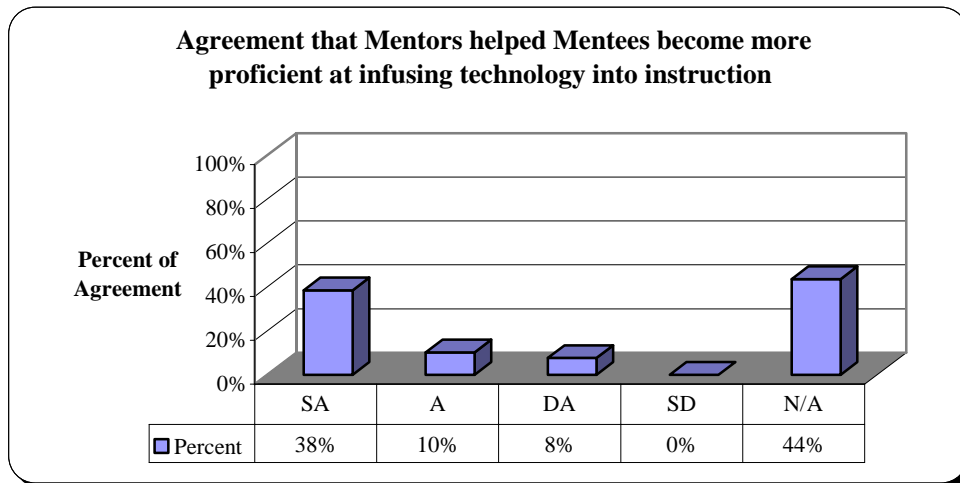
Participants were asked to rate their agreement with the statement, “[My Mentor] helped me become more proficient at infusing technology into instruction.” The results of this item are reported in Table 40 and Figure 3 below.

Table 40. Mentor Helpfulness with Proficiency in Infusing Technology in Instruction

Item 8. [My Mentor] helped me become more proficient at infusing technology into instruction	Strongly Agree	Agree	Disagree	Strongly Disagree	Not Applicable*	Total
Frequency	15	4	3	0	17	39
Percent of Total	38%	10%	8%	0%	44%	100%

* Includes responses for general support of M³ Grant activities such as Lab Technical Support and TIPS

Figure 3. Agreement about Mentees Becoming More Proficient at Infusing Technology into Instruction



After discounting N/A responses, data in Table 40 and Figure 3 indicate that 86% of the Mentees agreed that their Mentor had helped them become more proficient at infusing technology into instruction where only 14% disagreed with the statement. However, a high percentage (44%) of the respondents also marked this statement as N/A.

Question 2d. *What was the level of satisfaction among participants regarding their experiences in the Mentoring projects?*

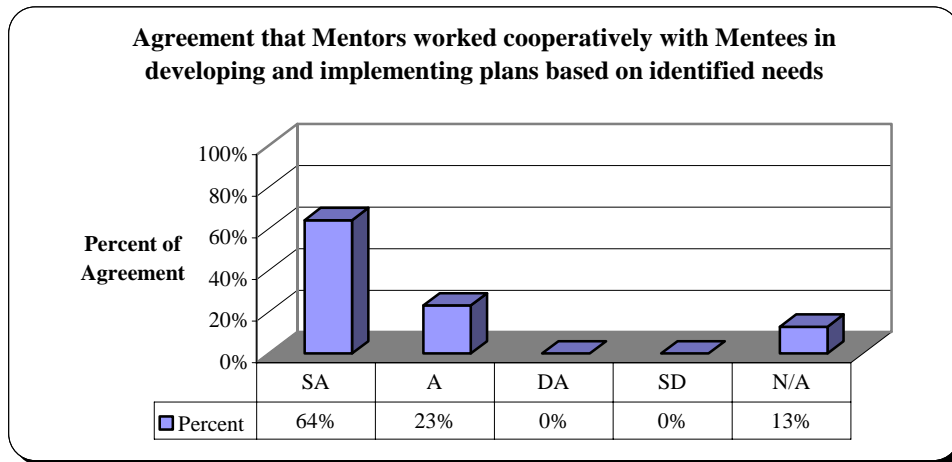
Mentee Feedback

Two items were used from the Mentee on-line feedback form to measure levels of satisfaction regarding the M³ Mentoring activities. The first was whether the Mentee felt that their Mentor had worked with them cooperatively to develop and implement a plan based on their identified needs (Table 41 and Figure 4).

Table 41. Mentor Cooperation on Individualized Plan

Item 1. [My Mentor] worked with me cooperatively to develop and implement a plan based on my identified needs.	Strongly Agree	Agree	Disagree	Strongly Disagree	Not Applicable*	Total
Frequency	25	9	0	0	5	39
Percent of Total	64%	23%	0%	0%	13%	100%

Figure 4. Agreement about Mentor Cooperation in Developing and Implementing Plans Based on Mentee's Identified Needs



Eighty-seven percent of the Mentees indicated that their Mentors had worked cooperatively with them to develop and implement a plan based on their identified needs. There was no disagreement regarding this issue, however 13% of those responding marked the item as Not Applicable (Table 41 and Figure 4).

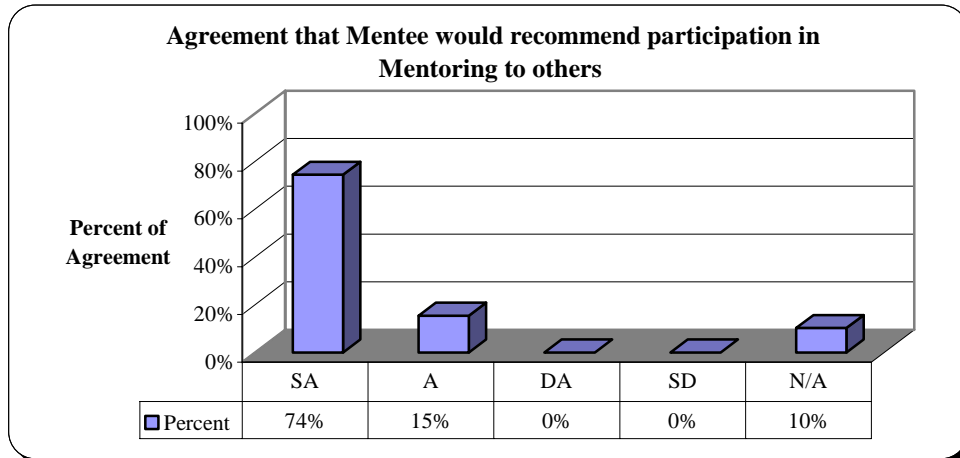
The second item used to measure levels of satisfaction among Mentees asked if the Mentees would recommend the mentoring experience for others. Table 42 and Figure 5 indicate that 89% of those that participated in the M³ Mentoring Project agreed that they would recommend the experience for others. Once again, there was no disagreement on the item, but 10% marked the item as Not Applicable.

Table 42. Mentee Recommendation of Experience

Item 9. I would recommend this experience for others.	Strongly Agree	Agree	Disagree	Strongly Disagree	Not Applicable*	Total
Frequency	29	6	0	0	4	39
Percent of Total	74%	15%	0%	0%	10%	100%*

*Does not add to 100% due to rounding.

Figure 5. Agreement about Mentees' Recommending the Experience to Others



Typical comments made by Mentees that were supportive of their Mentoring experiences are shown below.

- Stephen was very helpful and always available. He knew more about Blackboard and its problems than anyone else could have, and I appreciated his assistance. I'm sorry that he has left us, and I wish him well in his new location.
- Stephen was always ready to come to my aide, when requested. I appreciated his help throughout the year.
- Cory was a lifesaver and most willing to assist when he was around. Sometimes he needed to slowdown as he has such expertise and I wasn't there yet. I need more hands on and walk through and he can do it. He has always been most accommodating. I highly recommend him. He sometimes tends to overlook the necessity for the tedious detail in explanations as he is more abstract. His people skills are outstanding. Truly enjoyed working with him.
- Cory Martin was a good mentor match for me. He was always available when he was needed, which, at times, were odd hours and "right now" types of requests. He did not always have the answer or know how to solve the problem, but he always went to someone who could get the answer for me. I did not use Cory to learn how to integrate technology into my courses, as I had already integrated much of what I had previously learned. Cory was there for me, as I needed him. I would highly recommend him as a mentor to any other faculty member!
- Cory's technical skills are outstanding and he continues to grow in his assignment as tech mentor. Since entering the teacher education program he has been able to apply his technical skills to content areas and has become a valuable asset when working with faculty, staff, and students.
- Very important part of this project!
- Brandi skill level is higher than the work she produced. I think that if she could focus on what she is doing then the sky would be the limit.

- Heather was wonderful to work with. In response to question #3 I would like to add that there were times Heather may not have known the answer to my question immediately, but she always took the time to find and answer and relay it to me in a timely fashion. I appreciate vastly her expertise and help throughout the past semester! I wish I was still there to be involved with her as I know she has much to offer! Thanks for making it possible for me to advance my knowledge of infusing technology into instruction, not only for my classes, but as tools for the teachers with whom I worked!
- I couldn't do all that I do without Cris. She not only helps me with the things I need help with, she finds other things to help me with as well. She is insightful about what is needed, especially in Blackboard. She has served as a tech mentor to many students in my on-line class. They love her. Her attitude is always so cheerful and she is always so willing to help. What a great mentor!!!! Sorry I am so late. I put strongly agree on question 2 and it won't let me submit. I am going to move it down a notch to see if that works.
- Sandy is a joy to work with -- patient, calm, very knowledgeable, with an excellent sense of humor -- in short a natural teacher. Technology can be so daunting for a variety of reasons. Sandy's particular array of gifts made and make her an ideal mentor. My only regret is that I didn't take more advantage of her expertise. We set several meetings that I had to cancel because of other pressing matters. I am looking forward to have more breathing room next semester and continuing my relationship with the M³ staff.
- Sandy did a wonderful job assisting me with the development of a website for our human performance lab. The only problem I had was her not showing up for the scheduled appointments. Once was due to weather. Other than that everything else was great.
- My mentor was extremely helpful and patient. I learned something from her each time we met. I myself need to work harder on infusing technology into my instruction, but I know my mentor is always willing to help me. I know that I wouldn't have made much or any progress with technology in the classroom if it hadn't been for my mentor. In fact, I can't imagine a time when I wouldn't want a mentor. I owe her many thanks!
- Sandy is a very capable student. She worked with the students well and had great rapport with them as well. We both learned a lot about the SmartBoard and its functions. There is still a lot to be learned about its usage in an elementary classroom.
- I worked with Cory on an ad hoc basis. He was very knowledgeable, personable and flexible. I especially enjoyed his choice of B.B. King for music to accompany late afternoon work sessions in the lab! :-)
- I was able to entrust Cory with the class as a "co-presenter". He was major help both in preparation for the course as well as during the actual instructional times. Thank You Cory. ...alan
- I have requested the opportunity to continue to work with Cris. On all counts, she is professional!
- Cris was not my designated mentor, but helped to devise a Blackboard enrollment form for my classes and was very helpful in an informal way with various technology issues I was dealing with. It has been a pleasure having Cris as a resource.
- Cris was very helpful for our partner schools. She worked independently with the staff and received high praise from those whom she worked with.

- This program is essential as well as beneficial to all faculty and students. A great thanks to the person(s) who make it possible.
- Sandy did a great job in the projects that we worked on together.
- I was able to develop a video that included splicing together footage created with the digital videotape and footage from a TV program. Additional sound effects and music were added. I was very pleased with the final product.
- Brandi exercised patience and flexibility when troubleshooting for faculty and students during comps.
- Chris was productive and responsive in meeting my needs. She asks questions to confirm she is doing what I expected and has found some valuable resources for my project. She is easy to work with and always positive! Thanks!
- Mentor was available and willing to assist, however my workload did not afford the opportunity to take advantage of mentor's expertise. Mentor was at all times willing to answer questions and be available to help.

Some Mentee feedback suggested that their mentoring experience was not as positive as it could have been. The following comments indicate there may be a need to continue to work with Mentors in areas such as time management and following up on requests.

- [My mentor] is a very friendly outgoing person, and it has been a pleasure to get to know her. My evaluation is probably not a fair assessment of her abilities as a mentor. After our initial meeting we only met once. Somehow, she double-booked herself, so did not come to the first session after the initial one. I contacted her and we set up another time that she made sure she put in her calendar. After I waited in my office for 30 minutes, I went down to the computer lab and found her in there. I guess she wasn't keeping track of the time nor had she looked at her calendar. I realize that it was a busy time, and my plan may not have been specific enough.
- I really didn't have much contact time with my mentor this semester. We didn't ever have a mentoring session therefore I had to mark quite a few not applicable. I guess I should make a point of e-mailing my requests because (he) didn't respond to face-to-face questions other than to say he'd look into it. But then I think he was very busy and didn't always remember to get back to me. He is always very pleasant to work with and I feel quite knowledgeable.
- Although [My mentor] did not seem familiar with the tools and programs I needed to learn about, I READILY received the help I needed from others. The mentors worked together, each contributing the skills they had to help me put my projects together. I would have NO hesitation to recommend that others take advantage of their collective expertise. Not knowing how to do some things was frustrating for me at times, but the learning experiences with the mentors and other tech support staff was fun. Thank you!

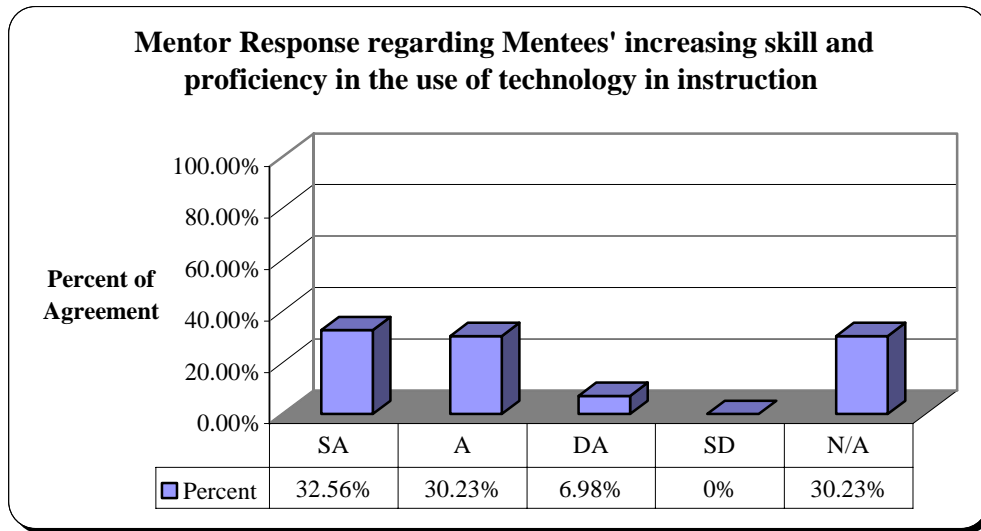
Mentor Feedback

Mentors also agreed that their Mentees made excellent progress in acquiring skills and applying them in classroom instruction. Table 43 and Figure 6 contain feedback from Mentors regarding whether the Mentees increased their skill and proficiency in the use of technology in instruction.

Table 43. Mentor Report on Mentee Increase in Proficiency

Item 3. [The Mentee] increased his/her skills and proficiency in the use of technology in instruction.	Strongly Agree	Agree	Disagree	Strongly Disagree	Not Applicable*	Total
Frequency	14	13	3	0	13	43
Percent of Total	33%	30%	7%	0%	30%	100%

Figure 6. Agreement about Mentees Increasing Their Skill and Proficiency in the Use of Technology



Discounting N/A responses, 90% of the Mentors either agreed or strongly agreed that their Mentee increased his or her skill or proficiency in the use of technology in instruction. Once again, about one-third of the Mentors marked this item as N/A indicating that not all mentoring activities were directed toward helping Mentees learn the skills necessary for using technology in instruction (Table 43 and Figure 6).

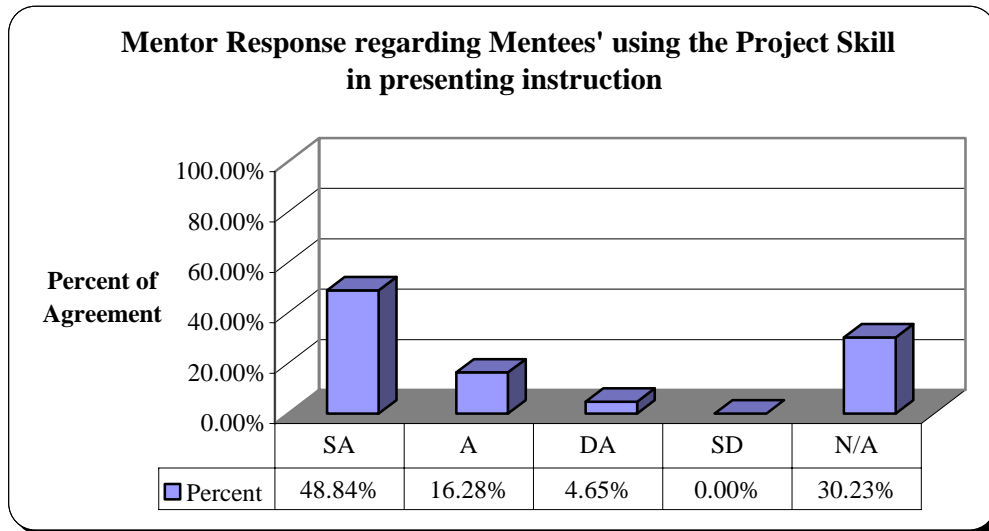
There were also high levels of agreement among Student Mentors that Mentees used the skills developed during mentoring session in presenting instruction (See Table 44 and Figure 7.). Excluding the 13 N/A responses, 93% of the Mentors either strongly agreed or agreed while only 7% disagreed that Mentees had provided evidence that they were using their project skills to present instruction.

Table 44. Mentor Report on Mentee Use of Skills

Item 5. Mentor responses that Mentees provided evidence that he/she used the Mentoring Project Skills in presenting instruction.	Strongly Agree	Agree	Disagree	Strongly Disagree	Not Applicable*	Total
Frequency	21	7	2	0	13	43
Percent of Total	49%	16%	5%	0%	30%	100%

*Not all mentoring skills were used in direct instruction. Some were devoted to learning web page design or in developing and posting TIPS materials on the M³ Web Site.

Figure 7. Agreement about Mentees' Using the Mentoring Project Skills in Presenting Instruction



Typical comments made by the Student Mentors that were supportive of the process are shown below:

- I enjoy working with [My Mentee] because she wants me to learn as much as I can about Technology. She is so confident in her self that I can be more confident in the work that I produce.
- [My Mentee] was a very positive "student" for me. She was willing and able to work hard to learn the skills she needed to be productive.
- [My Mentee] had an extremely positive attitude about learning new technology. She was eager and willing to learn new things. She was joy to work with!
- Very fun to work with I learned as much if not more than she did.
- [My Mentee] is fun to work with because he has a positive outlook on teachers and learning technology. He has a lot of good pointers to use.
- [My Mentee] has ongoing work she wants to complete and I hope to work with her in the future on this project.
- I assisted [My Mentee] in setting up the digital projector for a PowerPoint presentation to be given in class.
- We met only briefly to go over some questions regarding her Blackboard class.
- While [My Mentee] was very nice, and was very eager to learn; she was very difficult to meet with. I often had appointments scheduled with her that she did not meet. Most things we worked on together did not meet the original project goal but, I assume were helpful to her in future instruction. I would like to continue working with her, but hope in the future that we are able to meet more often and are more successful at accomplishing our goal.
- While [My Mentee] showed that she was capable of using the Mentoring Project skills they didn't directly relate to instruction.
- For this project I helped to create a help sheet she used for classroom instruction in a class that was using Blackboard. Therefore some of the questions didn't apply to the current project
- We worked together on several projects which were not directly related to classroom instruction. Some of the projects we worked on together were more me giving instructional support than teaching/mentoring Rick on information that he desired.
- We worked on using Inspiration as an integration tool in preparing an oral presentation with the students. She was a pleasure to work with and was a quick learner.
- [My Mentee] already had a high level of knowledge. We experienced some difficulty in finalizing her project but I think she was satisfied in the end.
- [My Mentee] was very receptive and excited about using WebQuests as part of her curriculum. I think she will continue to implement technology in her classes.
- Time spent supervising COE technology center.
- [My Mentee] and I worked together on the TIPS project. She was very clear on her directions and fun to work with. I learned a great deal about web pages just from working on this project.
- While we have just begun the current project I feel that we are making progress and hope that we continue to do so.

The following comments provide feedback from a few Mentors' suggesting that their mentoring experience may not have resulted in WSU faculty/K-12 Partner Teachers utilizing the mentoring sessions to increase the use of technology in instruction.

- [My Mentee] chose me as a mentor, but he didn't need me much this semester. We have talked and we are going to get together this summer to work some on Blackboard.
- I met a few times with [My Mentee] at the beginning of the semester to work on Blackboard. She worked a little bit with me, but wasn't interested much after that. We stopped working together after about 2 months.
- [My Mentee] has a positive attitude about Blackboard. She only used it a little bit with her class. She wasn't interested in doing anything else with it.
- [My Mentee] and I worked on updating her FrontPage skills so that she could work on her faculty web pages. [She] was frustrated with the project because she felt she had too many other things to do in addition to the web pages.
- [My Mentee] had a family crisis occur during the time of our contact and most of the help I provided was via email.

An unsolicited e-mail made its way to the Dean of the College of Education regarding one faculty member's experience with the M³ Grant Mentoring program. Her comments included below provide positive support for how she used the M³ Mentoring Project to assist her in developing new technology skills and how she translated those skills into practices involving students in her classes.

I'm writing to tell you what a great help the technology mentors have been to me while I'm learning Blackboard. I would never have tried to learn Blackboard without a mentor, but now I'm pleased to say that I can do a great deal on Blackboard without help. But, am grateful to know that I have help any time I need it. Two of my classes (CESP 334 and CESP 433) are also benefiting from my new skills and great mentors. The students have already told me how much they think they are going to like using Blackboard--and how much they think they will learn from more interactions through Blackboard. I just want you to know how much I have benefited from the mentoring program and how much I appreciate the help I have had. Thanks Marsh, Tonya, Brandi Biggs, Zerrin, Chris Beam, Corey, and Scott!
Yours, Doris Burgert

Key Findings for Goal 2

A number of methods were used to measure the outcomes of activities designed to meet the objectives established for Mentoring. Included were surveys, interviews, and document review. Listed below are key findings related to M³ Goal 2 objectives.

Year 1 Objective 2.1 Mentors from Business/Industry

Identify and utilize mentors from business/industry to provide training for grant partners.

- Five COE faculty and the M³ Project Evaluator participated in the on-line course provided by Apple Computer entitled, "Teaching, Learning and Technology, A Planning Guide." This course occurred over several weeks.
- A systems engineer from Apple Computer worked with the M³ staff and provided assistance in setting up the AirPort for the North High Network.
- The Boeing Company provided a \$10,000 grant for M³ to purchase and train K-12 teachers in Lego MindStorm Robotic Kits.
- Bob Ward, a business partner with the M³ Grant provided access to a server for St. Patrick's School to build a web site.
- Suzie Ahlstrand from Wichita Chamber of Commerce Business Education Support Team provided support and input for several grant proposals.
- A trainer from Haddock Computer provided training and tech support for setting up the FileMaker server.

Year 1 Objective 2.2 Mentors from Professional Resources

Identify and utilize mentors from professional resources to provide training and support for grant partners

- The M³ Project co-sponsored EXCITED about On-line Teaching. M³ staff provided technical support for laptop poster sessions.

Year 1 Objective 2.3 Mentors from Model Practitioners

Identify and utilize mentors from model practitioners in the schools to provide training for partners

- Several teachers from non-partner Wichita Public Schools participated in the TIPS project. Teachers involved in TIPS were recruited to help in mentoring and training M³ Partner School teachers and staff.

Year 1 Objective 2.4 Student Mentors

Continue to use student mentors to provide training and support for grant partners

- A total of 99 project participants were served through the Student Mentoring program during the 2000-2001 school year. In all, 102 different projects were initiated, which resulted in 1194 separate mentoring sessions. Student mentors logged a total of 2,429.5 mentoring hours during the first year of the M³ grant.
- Feedback from Mentors on their post-project feedback forms indicated a high level of satisfaction with their participation in the M³ Mentoring Project. After disregarding N/A responses, 100% of those responding were in agreement that they would recommend the experience to others.

Year 1 Objective 2.5 Parent Mentors

Develop parent mentors from the partner schools to provide support and training for grant partners.

- Principals from the Partner Schools identified 2 parents from each school to participate in the Parent Advisory Board. The first meeting was held in May 2001.
- A parent section has been developed on the M³ Web Site providing parents with links to 15 different Web Sites containing parent resources. An interface containing "search engines for kids" was also built to assist parents in helping students in K-12 schools access and use the Internet.

Conclusions/Recommendations

- There is considerable evidence that M³ Grant Personnel facilitated a number of activities throughout 2000-2001 that supported the accomplishment of Goal 2 objectives.
- It is recommended that the M³ Project staff explore ways that additional mentors from business and professional sources can be identified and trained in an effort to provide more support for WSU Faculty and Partner School Teachers.
- The Student Mentoring Project should be continued with a greater emphasis on providing direct services and support for teachers toward the infusion of technology into classroom instruction.
- M³ Project staff should explore ways that additional Parent mentors can be identified and trained in an effort to provide additional parental resources for families and students involved in K-12 Partner Schools.

Goal 3: Mobility

Project M³ participants will expand student access to technology in classrooms and authentic learning environments by using laptops, wireless networks and on-line instruction.

Year 1 Objective 3.1 Mobile labs

Provide mobile computer labs with wireless technology for anytime, anywhere instruction in the College of Education and in Partner Schools.

Year 1 Objective 3.1 Indicators of Achievement

3.1.A Items purchased

3.1.B: Ways wireless technology was integrated into your classes

3.1.C: Installation occurred.

3.1.D.1: Identify person in each school who is responsible for the equipment and software.

3.1.D.2: What software was identified

Table 45. Year 1 Objective 3.1 Activities and Results

Objective 3.1 Activities	Objective 3.1 Results
The M ³ Project Purchased 5 iBooks, a cart, and airport for Brooks and purchased 5 Gateway laptops, cart and Airport for North high. Five iBooks, an airport and a cart were purchased for the COE.	The wireless mobile labs were purchased and placed operation in the fall of 2000. The wireless labs were used to train staff throughout the year. More importantly, the computers were used by teachers and students at the schools to enhance instruction through On-line research, WebQuests, and Blackboard classes. Faculty, staff, mentors, and pre-service teachers have used the iBooks extensively in classrooms and workshops.

Year 1 Objective 3.2 Mobile Instruction

Utilize on-line instruction to increase training for students and faculty at WSU and grant partners

Year 1 Objective 3.2 Indicators of Achievement

3.2.A: Publish a handbook of guidelines for on-line instruction.

3.2.B: Dates and how connection was made

3.2.C.1: Number of faculty and Partner School teachers who use the on-line academy

3.2.C.2: Participant feedback on on-line training survey form

3.2.D: The course was developed and offered.

3.2.E: Parent website was developed.

3.2.F: Number of incentives provided

Table 46. Year 1 Objective 3.2 Activities and Results

Objective 3.2 Activities	Objective 3.2 Results
<p>Tonya Witherspoon met with Rob Gibson and Pete Lundrigan from Media Resource Center to organize the M³ - COE Web site.</p> <p>Marsha met with Rob Gibson to review the in-kind support for project M³ and to outline how his on-line support model can be used for project activities.</p> <p>Marsha recommended Linda Mitchell be appointed as the COE faculty mentor for on-line activities.</p>	<p>An initial M³ Website was developed and launched at the beginning of the M³ Project. The site was designed to allow for information to be linked and updated as the project matures. The M³ website can be viewed at:</p> <p>http://education.twsu.edu/m3/</p> <p>The site consists of an Index that provides information about the M³ Project in regard to Models, Mentors and Mobility. It also includes an evaluation section that allows participants to provide feedback regarding their participation in the M³ grant activities. Directions for accessing support from the M³ staff or M³ Student Mentors is outlined on the M³ Website. The site also provides access to the TIPS teacher and parent activities developed as a part of the M³ grant. Geton-line was launched in April, 2001. See http://geton-line.wichita.edu. This support web site offers resources and information for faculty pursuing on-line instruction.</p>

Results Related to Goal 3 Evaluation Questions

Question 3a. *Did the use of laptops, wireless networks and on-line instruction create more authentic learning environments that promoted increased student access and use of technology in the instructional program?*

Two M³ Grant Wireless Mobile laptop labs were assembled and placed into service at Wichita State University. Grant funding also allowed for labs to be placed at two of the five K-12 Partner Schools, North High School and Brooks Middle Magnet, during the first year. Based on information learned in interviews with a sample of grant participants, there is substantial evidence to suggest that the Mobile laptop labs were used extensively by WSU Faculty and K-12 Partner Schools. Teachers from North High School reported using the equipment in a variety of ways to promote student involvement and learning, as did teachers at Brooks Middle Magnet.

North High and Brooks Middle Magnet Schools were asked to provide information about how the Wireless Mobile Labs were utilized in their schools during the first year of the grant.

The following information was provided by the schools and has been posted on the M³ website (<http://education.twsu.edu/m3/>).

North High School

During the first year of the grant, North High School reported 131 instances of teachers checking out the mobile laptop cart for classroom use. The departments used the laptops for:

- administration (yes, even the administrators used them)
- counseling (they were taken down to the auditorium and out to all of the middle schools for enrollment purposes)
- English, foreign language, math, science, social studies, special education,
- staff development and many, many night meetings including parents' meetings
- WSU Curriculum and Instruction masters classes
- flexibility around the library and in teachers' rooms to show grades and progress as well as displaying student work right at the conference table
- taking notes at meetings
- staff development with Woodland Elementary was done using the laptops where the Gen Y students were teaching the teachers
- sharing Web sites with students
- many web quests such as one on genetics
- Darwin on-line
- physics lab using excel, making formulas, and calculating answers and checking labs
- A teamed English/social studies class wrote a business letter of which the subject matter was medieval times
- Honors American History II researched the New Deal legislation to assess the effectiveness of social programs.
- another English class researched various customs in the Middle Ages in comparison to modern times.
- career research was done in classes where the counselors were conducting classes.

Brooks Magnet Middle School

- The iBooks, Airport and cart traveled to classrooms for small group activities several days.
- Students worked in small groups using the five iBooks. Projects varied.
- Students researched various topics using the iBooks within the classroom when the library was already scheduled with another class.

- Language Arts Class: Students used iBooks for word processing. Poems, short stories.
- Generation Y Class used iBooks in working with their partner teachers to show their projects, e-mail, etc.
- Students checked out the iBooks to use in the library for research.
- They could sit anywhere there was a place. The floor worked a couple of days when the library was packed.
- One teacher checked out all five iBooks for students to take make-up tests on Blackboard.
- The iBooks traveled to a couple of workshops with students.
- In-service for staff on Blackboard - iBooks were used so everyone would have access to the Internet for the training.
- iBooks were used in several classes to meet the needs of our students.
- Great for note taking at technology conference.

University staff also indicated that they utilized the wireless laptop labs to provide instructional experiences in their classrooms. The information below is a reflection from a WSU teacher who became involved in the use of technology during a middle school teacher workshop that she was asked to co-teach on the History of math.

This is the second week of the History of Math for Middle School Teachers workshop. I had scheduled it in the media classroom, #335 of Jabara. Then Professor Bill Richardson had emergency heart surgery and Professor Buddy Johns took over at the last minute.

We quickly decided that our outcomes had become three-fold: mathematics history, math content, and use of technology in math. We booked the Social Sciences lab in Lindquist as well as one afternoon in the Corbin lab.

Neither Buddy nor I had ever worked in an environment in which we had computer presentation equipment available, but our students have shown us how wonderful it is. We have some of the M³ Student Mentors and other undergrad education students who are quite experts.

For an hour or more each afternoon the first week, they did research in the lab. We provided some sites, and then they took off from there. It was wonderful to have them yell out, "Look what I found", and then we would project it on the screen.

The last 8 days, the students have been making presentations in the classroom, with many using PowerPoint and interactive web sites for their demos. What can I say but "WOW!!!!!!"

Often they could follow this with some low-tech, hands-on activity for reinforcement.

Now Buddy and I feel totally inferior in trying to present to them.

Oh, what I could do if I only had such equipment available on a regular, dependable basis. We in the Math Department do not have classrooms of our own, but can land in any building on campus. (Some semesters I have classes in four different buildings.) And I have bad arms that will not permit me to haul equipment easily. Often there is no setup time between classes and no travel time between buildings.

But the experience has me dreaming again about what could be...

One teacher interviewed from North High, a partner school, had the following comments about the use of the Wireless Mobile lab.

The laptops are fantastic! We have really made good use of them. The mobile lab makes a more efficient use of resources. It's where we are going in the future. It really helps us since we have limited classroom access to technology.

Another North High teacher commented on her involvement with the on-line resources offered through the grant. She provided the following information during the interview.

I feel very fortunate to be part of this (M³) so my students can benefit. I would like to learn more about Distance Learning on line, etc. I want to thank the grant for allowing me to take on-line courses and managing on-line resources. It allowed me to develop a plan for updating technology.

Question 3b. *Did pre-service teachers that participated in the grant increase their knowledge and ability to integrate technology into classroom instruction?*

Information presented in the earlier sections of this report regarding pre-service teachers grant participation indicates that pre-service teachers increased their knowledge and skills in the use of technology as a tool in teaching during the first year of the grant. Feedback on pre- and post results on the HPR*TEC Basic Skills Profiler indicated that pre-service teachers that were

involved in the teaching block increased their proficiency in all but one of 30 technology skills included on the survey.

Question 3c. *Were pre-service teachers capable of increased use of technology in their classrooms after graduation?*

WSU pre-service teachers completing their student teaching block in 2001 will be entering the job market this fall. A sample of the teachers will be selected for follow-up in assessing how increased emphasis on the use of technology in the teacher education classes and in actual student teaching experiences impacted their teaching practices. This cohort of first year teachers will provide a baseline for follow-up during the term of the grant.

Key Findings for Goal 3

Data used to assess progress made toward Goal 3 objectives was gathered through interviews, document reviews, and surveys. Key findings related to Goal 3 Mobility are included below.

Year 1 Objective 3.1 Mobile Labs

Provide mobile computer labs with wireless technology for anytime, anywhere instruction in the College of Education and in Partner Schools.

- There was considerable evidence that the mobile computer labs purchased through the grant were utilized extensively in classrooms at WSU and in the two partner schools involved in the project.

Year 1 Objective 3.2 Mobile Instruction

Utilize on-line instruction to increase training for students and faculty at WSU and grant partners

- Twenty-five PK-12, three M³ staff and eight WSU M³ Student mentors took part in Connected University courses during the year. Participants reported high levels of satisfaction with the courses that were taken.

Conclusions/Recommendations

- M³ Staff purchased the necessary hardware and software to provide 4 Wireless Mobile Labs to teachers and staff at WSU College of Education and two Partner Schools.
- The faculty and staff's at WSU and in Partner schools received training on how to use the equipment and software in their instructional program.
- It is recommended that Wireless Mobile Labs be purchased and provided for the remainder of the Partner Schools and that the staffs become involved in training on how to use the equipment and software in their instructional programs.

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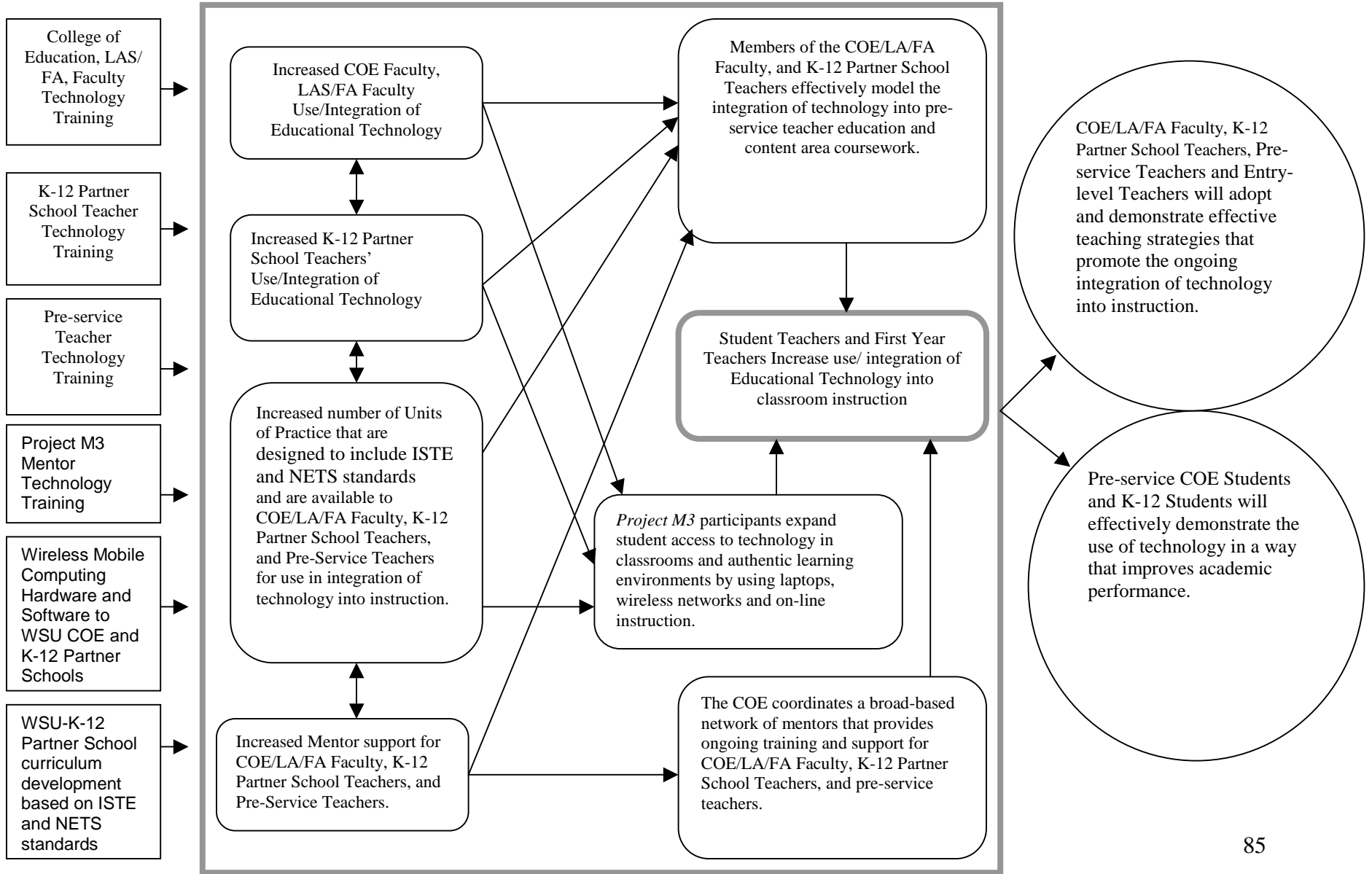
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Appendix A
Project M³ Logic Map

Activities / Inputs

Intermediate Goals/Outputs

Terminal Goals/Outputs



Appendix B

Project M³ Management and Evaluation Plan

Goal 1.

Objective 1.1: Models in Teacher education: TE faculty in the COE will increase the use of technology in teacher education coursework.

Scheduled	Activity	Indicator	Method	Data Collection Instruments/Protocols	Person Responsible/Due
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	1.1.A: Infuse ISTE standards in TE in first year of the grant.	1.1.A: Infusion of ISTE standards	1.1.A: Document review of course syllabi and faculty Activity Reports to Project Director.	Matrix of Courses and Standards – code type of documentation – Syllabi, Activity Report, etc.	Marsha, Jeri and Larry Reviewed each semester – Reported annually.
Y1 - 1 2 S Y2 - 1 2 S Y3 – 1 2 S	1.1.B: Identify and/or Design TE Models of Practice	1.1.B. Ways technology was identified, designed, and integrated into your classes?	1.1.B: Faculty course descriptions reported to Project Director	Course descriptions/ activities reported in FMP and response on FPT* on-line questionnaire	Larry reviews report from Project director. Each semester Items 1, 2, 7 FPT* on-line questionnaire. Each semester
Y1 - 1 2 S Y2 - 1 2 S Y3 – 1 2 S	1.1.C: Implement TE Models of Practice throughout the grant.	1.1.C: Ways technology was integrated into classes? What technologies were used for research, analysis, and communication?	F1.1.C: Faculty Activity reports indicating how they have used technologies and involved their students in the use of technologies.	Course descriptions/ activities reported in FMP and response on FPT on-line questionnaire	Larry reviews report from Project director. Each semester Items 1, 2, 7* FPT on-line questionnaire. Each semester
Y1 - 1 2 S Y2 - 1 2 S Y3 – 1 2 S	1.1.D: Collect, Publish, and Disseminate Successful TE Models of Practice.	1.1.D: Faculty models posted at the website	1.1.D: Review of models published at M ³ website	Number of Models meeting requirements for being posted.	Larry reviews report from Project director. Each semester of number of Models meeting requirements for posting.

Note: All planning and technology use activities carried out by COE Faculty, LA/FA Faculty, Partner School Teachers and Pre-Service Teachers will be matched with M³ Evaluation Questions and GPRA report items. This process will allow us to assess and report on the overall impact the grant is having on the use of technology in instruction.

A milestone timeline will be developed to track on time completion of objectives.

* Faculty and Partner Teacher On Line Technology Survey

Objective 1.2: PreK-12 teachers identified as technology mentors for pre-service teachers will increase the use of and level of use of technology in their classrooms by designing, implementing, and disseminating models of practice.

Scheduled	Activity	Indicator	Method	Data Collection Instruments/Protocols	Person Responsible/ Due
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	1.2.A: Models of practice and model practitioners will be observed through field trips for grant partners each semester to see models of integration.	1.2.A: Number of field trips/people attending	1.2.A: Director's log of field trip activities and participants	A report will be made listing field trips planned and taken. Fieldtrip Feedback forms.	Marsha will provide summary of field trips. Fieldtrip feedback forms will be collected after each field trip. Larry will analyze and report results.
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	1.2.B: Design PreK-12 Models of Practice (New text adoptions I, II, III)	1.2.B: Number of models developed	1.2.B: Document review on the website	Number of Models meeting requirements for being posted.	Larry reviews report from Project director. Each semester of number of Models meeting requirements for posting.
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	1.2.C: Implement PreK-12 models of Practice (new text adoptions I, II, III)	1.2.C: How have you integrated technology into your classes?	1.2.C: Teacher log	Number of Models used to present instruction reported to Project Director. Assessment of models by peers?	Larry reviews report from Project director. Each semester of number of Models used and how users rated them.
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	1.2.D: Purchase Apple's Education Series for Primary, Elementary, and Middle School content Areas.	1.2.D: Items purchased	1.2.D: Invoice	What was purchased and how it was distributed.	Report made available to use in documenting that items were purchased.
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	1.2.E: Design and Implement Project-based PreK-12 Models of Practice (Partner Schools)	1.2.E: Number of models developed/ How has technology been integrated into classes?	1.2.E: Document review on the website	Number of Models used to present instruction reported to Project Director. Assessment of models by peers?	Larry reviews report from Project director. Each semester of number of Models used and how users rated them.
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	1.2.F: Collect, Publish and disseminate PreK-12 Models of practice.	1.2.F: Models posted at the website	1.2.F: Review of models published at M ³ website	Number of Models meeting requirements for being posted.	Larry reviews report from Project director. Each semester of number of Models meeting requirements for posting.

Objective 1.3: Models in Liberal Arts and Sciences and Fine Arts

Scheduled	Activity	Indicator	Method	Data Collection Instruments/Protocols	Person Responsible/Due
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	1.3.A: Design and implement Content area models of practice.	1.3.A: number of models developed and integrated into instruction.	1.3.A: Document review of Content Area Models of Practice designed.	Protocol for rating Models of Practice with standards for posting to website.	Larry reviews report from Marsha on number of models developed and implemented.
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	1.3.B: Collect, Publish, and disseminate Content Area models of practice	1.3.B: models posted at the website	1.3.B: review of models published at M ³ website	Number of Models meeting requirements for being posted.	Larry reviews report from Project director. Each semester of number of Models meeting requirements for posting.

Objective 1.4: Model practitioners in partner schools.

Scheduled	Activity	Indicator	Method	Data Collection Instruments/Protocols	Person Responsible/Due
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	1.4.A: Identify and train model practitioners in Partner Schools.	1.4.A.1: increased number of coordinating teachers capable of integrating technology in classes in partner schools 1.4.A.2: Participant feedback on training survey form	1.4.A: identify baseline of coordinating teachers capable of integrating technology into classes at partner schools 1.4.A: training questionnaire	Marsha will	
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	1.4.B: Place Pre-service teachers with Model practitioners in Prek-12 Schools.	1.4.B: number of field experience placements with tech proficient teachers in partner schools	1.4.B: document the number of field placements		
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	1.4.C: Videotape model practitioners for use in TE classes	1.4.C: number of videotapes made of exemplary technology teachers	1.4.C: number of videotapes cataloged in M ³ library		

Goal 2 .

Objective 2.1: Mentors from Business/industry

Scheduled	Activity	Indicator	Method	Data Collection Instruments/Protocols	Person Responsible/ Due
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	2.1.A: Provide Apple computer's Mobile computing and curriculum Integration workshop in Year one	2.1.A: Participant feedback on training survey form	2.1.A: Number of participants 2.1.B: Training questionnaire	Marsha/ provides Larry the number of participants. Participant pre-post feedback form is collected on line.	Larry analyzes pre-post feedback forms and provides formative feedback and archives for end of year report.
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	2.1.B: Provide Apple computer Integration workshop during Year One.	2.1.B: Participant feedback on training survey form	2.1.B: training questionnaire	Marsha/ provides Larry the number of participants. Participant pre-post feedback form is collected on line.	Larry analyzes pre-post feedback forms and provides formative feedback and archives for end of year report.
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	2.1.C: Use Apple computer's ALI on-line network for on-line support and discussion groups	2.1.C: What ways have you used Apple's ALI (units of practice) or on-line chats?	2.1.C: faculty log of number participating		Marsha provides list of participants.
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	2.1.D: Make Classroom Connects' Connected University available to M ³ student mentors and WSU faculty	2.1.D.1: Number of student mentors and faculty enrolled. 2.1.D.2: Number of student mentors and faculty using it.	2.1.D.1 check enrollment database 2.1.D.2 faculty log; student mentor log	Marsha/ provides Larry the number of participants enrolled.	

Objective 2.2: Mentors from Professional resources

Scheduled	Activity	Indicator	Method	Data Collection Instruments/Protocols	Person Responsible/ Due
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	2.2.A: Determine COE faculty needs using SCR*TEC's Basic Skills checklist in Profiler	2.2.A: SCR*TEC profiler Basic Skills checklist and integration survey	2.2.A pre/post	Downloaded Basic Skills profilers for PT3 and K-12 sites.	Larry will download, analyze and report results at the beginning and end of each project year.
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	2.2.B: Coordinate COE faculty training through COE Prof. Development. and Technology Committees.	2.2.B: Number of joint training sessions provided.	2.2.B Minutes of meetings; Documentation of training sessions planned.	Minutes of the meetings will be summarized and a schedule of training sessions will be published.	Marsha will collect the minutes of meetings and schedules. Provide to Larry to note on milestone timeline..
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	2.2.C: Coordinate WSU faculty and COE faculty training through WSU Center for Teaching and Research Excellence	2.2.C: Number of teacher education faculty receiving training through the CTRE	2.2.C log of faculty trained (sign in sheets)	A log of all individuals participating in the training will be maintained. An on line pre-post feedback form will be completed for each training session.	Logs and results of feedback forms will be provided to Larry. Feedback forms will be analyzed for formative and summative reporting.
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	2.2.D: Establish Internal Mentor Network within WSU faculty by identifying experts	2.2.D.1: SCR*TEC profiler Basic Skills checklist and integration survey. 2.2.D.2: List of faculty mentors will be published on M ³ website.	2.2.D.1 pre/post SCR*TEC profiler and integration survey 2.2.D.2 review of website	Results of the SCR*TEC Profiler will be analyzed and shared with Marsha to identify possible mentors. A list of mentors will be published to the M ³ web site.	Larry will review lists and document the number of mentors identified by semester. Increases in the number of mentors will be reported at the end of each project year.
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	2.2.E: Highlight Model practitioners, Mentors, and training in each COE tech Talk newsletter and COE community newsletter	2.2.E: Articles published in Tech Talk and Community Newsletters	2.2.E Document review of Tech Talk and Community Newsletters	All articles about mentors will be collected and reviewed.	Articles will be provided to Larry by semester and reported annually.
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	2.2.F: Support WSU on-line teacher academy with meetings at least twice a semester to plan on-line training	2.2.F: Plans developed to support on-line training.	2.2.F log and minutes of meetings	Records and minutes of planning sessions will be maintained including number in attendance, activities and outcomes.	Records and minutes will be provided to Larry as indication that milestones were met.

Objective 2.3: Mentors from Model Practitioners					
Scheduled	Activity	Indicator	Method	Data Collection Instruments/Protocols	Person Responsible/Due
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	2.3.A: Identify Content Area Models to serve as Mentors. Showcase their practices in 2 day workshops each semester	2.3.A.1 Workshops will be presented by experts identified 2.3.A.2 Participants will express satisfaction with the training.	2.3.A.1 sign-in sheets workshop participants 2.3.A.2 training questionnaire	Log of workshop participants and schedule of the workshop presentations. Feedback forms for workshop participants.	Logs and schedules will be provided along with participant feedback to Larry after each Workshop.
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	2.3.B: Showcase Mentors by offering a workshop or institute each summer	2.3.B.1 Workshops will be presented by model teachers identified. 2.3.B.2 Participants will express satisfaction with the training.	2.3.B.1 sign-in sheets of participants 2.3.B.2 training questionnaire	Log of workshop participants and schedule of the workshop presentations. Feedback forms for workshop participants.	Logs and schedules will be provided along with participant feedback to Larry after each Workshop.
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	2.3.C: Establish a partner school Technology Advisory Board	2.3.C TAB is made up of partner school tech support to discuss technology integration problems and solutions	2.3.C minutes and attendance records	Records of persons selected. Minute of meetings including topics discussed and suggested solutions.	Information provided to Larry for analysis, summary and inclusion in year end report.

Objective 2.4: Student mentors

Scheduled	Activity	Indicator	Method	Data Collection Instruments/Protocols	Person Responsible/Due
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	2.4.A: Provide student mentor training for 8 student mentors for year One, 5 for Year two, and 4 for year three	2.4.A.1 number of training sessions held 2.4.A.2 Participants will express satisfaction with the training.	2.4.A student mentor--log of assistance received 2.4.A.2 log--scale of training satisfaction	List of students identified and trained. Assignments. Logs of mentors by type of support provided.	List of names, logs provided for document review and summary to Larry each semester. Included in final report.
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	2.4.B: Hold a mentor day at WSU each spring for partner Gen Y student programs	2.4.B.1: Number of businesses participating 2.4.B.2: Participants attending	2.4.B.1 workshop agenda 2.4.B.2 sign-in sheets	Provide sign-in sheets. Workshop agenda. Develop a questionnaire for feedback based on agenda topics and activities	List of attendees and workshop agendas, survey results provided to Larry. Results of the feedback form will be analyzed and reported by Larry.

Objective 2.5: Parent mentors

Scheduled	Activity	Indicator	Method	Data Collection Instruments/Protocols	Person Responsible/Due
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	2.5.A: Form a parent activities advisory group in year one for Brooks and North	2.5.A.1: Parent Activities Advisory Group is made up of parents from partner schools. 2.5.A.2: The Parent Activities Advisory Groups advise Project M ³ staff and school administrators on technology-related issues.	2.5.A.1 membership list and sign-in sheets 2.5.A.2 minutes and agendas of meetings	List of members will be maintained and minutes of meetings will be published to included topics discussed, and recommendations, actions of committee on technology related issues.	Membership list provided to Larry along with summaries of the meetings held. Larry will use to document that objective was met and to include in the annual report.
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	2.5.B: Develop three parent technology packets (Parent TIPS) (elem. middle, & secondary)	2.5.B Number of packets developed	2.5.B document review of the packets	Evidence of the packet development will be provided.	Larry will use the evidence to document that objective was met and to include in the annual report.
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	2.5.C: Provide M ³ mentors for parent workshops	2.5.C Number of student mentors attending parent workshops	2.5.C student mentor logs	A record of the number of Mentors that presented parent workshops including the number in attendance and the topics of the workshop. May use workshop feedback forms.	Larry will use the evidence to document that objective was met and to include in the annual report. Results of feedback forms will be used for formative and summative reporting.
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	2.5.D: Plan family days yearly at each partner school and at WSU* to involve families in exploring technology	2.5.D.1 Agenda of activities planned 2.5.D.2 Number of families participating at Parent Days at partner schools	2.5.D.1 document review of agendas 2.5.D.2 sign-in sheets	Provide agenda of activities and number of parents in attendance. May use a feedback form.	Larry will use the evidence to document that objective was met and to include in the annual report.

Goal 3:

Objective 3.1: Mobile labs

Scheduled	Activity	Indicator	Method	Data Collection Instruments/Protocols	Person Responsible/Due
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	3.1.A: Purchase wireless technology for CEC, Brooks, and North	3.1.A items purchased	3.1.A invoice	Marsha provides copy of Invoice to Larry	Larry notes and files invoice and includes in the milestones met report.
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	3.1.B: Evaluate the effectiveness of wireless technology at end of year one.	3.1.B: Ways wireless technology was integrated into your classes?	3.1.B faculty and teacher feedback on wireless technology.	Some items on the on-line forms can be used. May have to develop something more specific for wireless.	Larry will work with Marsha, Jeri and staff to develop an instrument about wireless. Results will be collected and reported each semester.
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	3.1.C: Install productivity and instructional software on WSU carts	3.1.C: Installation occurred.	3.1.C Dates installations occurred.	Marsha provides Larry an accounting of software installed on carts.	Larry notes and files invoice and includes in the milestones met report.
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	3.1.D: Assist partner schools in identifying software to purchase to meet their curricular goals and objectives. 1	3.1.D.1: Identify person in each school who is responsible for the equipment and software. 3.1.D.2: What software was identified.	3.1.D.1: Names of responsible people. 3.1.D.2 Record of consultations	Marsha provides Larry with the accountability system developed.	Larry notes and files document and includes in the milestones met report.

Objective 3.2: Mobile Instruction

Scheduled	Activity	Indicator	Method	Data Collection Instruments/Protocols	Person Responsible/Due
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	3.2.A: Publish guidelines for on-line instruction in a handbook	3.2.A: Publish a handbook of guidelines for on-line instruction.	3.2.A: Review of handbook.	Marsha/Jeri will provide Larry a copy of the handbook.	Larry notes and files handbook. Includes information in the milestones met report.
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	3.2.B: Connecting to USD 259's Connected University for ongoing, on-line instruction.	3.2.B: Dates and how connection was made	3.2.B: Document review Number of M ³ participants using the on-line connection.	Marsha/Jeri will provide Larry evidence of the connection and how it will be used for ongoing on-line instruction.	Larry notes and files handbook. Includes information in the milestones met report.
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	3.2.C: Assist faculty and grant partners through WSU on-line academy in designing and implementing on-line instruction	3.2.C.1: Number of faculty and partner school teachers who use the on-line academy. 3.2.C.2: Participant feedback on on-line training survey form	3.2.C.1: On-line registration. 3.2.C.2: Completion of an on-line feedback form	Marsha/Jeri provide the number of Faculty and Partners that utilized the on-line academy to design and implement instruction. Participants will complete an on-line feedback form about the usefulness of the site.	Larry will use the evidence to document that objective was met and to include in the annual report. Results of feedback forms will be used for formative and summative reporting.
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	3.2.D: Develop and offer on-line instruction: One class for North and Northeast H.S.	3.2.D: The course was developed and offered.	3.2.D: Review of on-line course and enrollment.	Marsha/Jeri provide evidence that courses were developed. Dates and content	Larry notes and files information. Includes information in the milestones met report.
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	3.2.E: Establish a technology website for parents	3.2.E: Parent website was developed.	3.2.E: Review of website. Number of hits recorded.	Marsha/Jeri provide evidence that web site was developed. Dates and content	Larry notes and files information. Includes information in the milestones met report.
Y1 - 1 2 S Y2 - 1 2 S Y3 - 1 2 S	3.2.F: Provide incentives to publish on-line experiences	3.2.F: Number of incentives provided.	3.2.F: List of recipients of incentives.	Marsha/Jeri provide types of incentives offered and provided. Number of articles/reports published	Larry notes and files information. Includes information in the milestones met report.

Appendix C

Project M³ ISTE Standards Matrix

M ³ Goal 1 Obj. 1.1 TE faculty in the COE will increase the use of technology in teacher education coursework. ISTE Standards and Indicators for Teachers A= Activity in course S= Recorded in syllabus P= Found in Program Document N= Not Applicable B= Baseline	Year	CESP 334	CESP 433	CI 311	CI 312	CI 320	CI 328	CI 427	CI 430	CI 457	PE 360	Music Ed 611	# In Course Activity	% In Course Activity	# In Syllabus	% In Syllabus.	# In Program Doc.	% In Program Doc.
I. Technology operations and concepts																		
A. Demonstrate introductory knowledge, skills, and understanding of concepts related to technology (as described in the ISTE national educational technology standards for students).	B		A	A		A	ASP					A	6	55%	1	9%	1	9%
B. Demonstrate continual growths and technology knowledge and skills to stay abreast of current and emerging technologies.	B		A	A			S						2	18%	1	9%	0	0%
II. Planning and designing learning environments and experiences																		
A. Design developmentally appropriate learning opportunities that apply technology enhanced instructional strategies to support the diverse needs of learners..	B						SP						0	0%	1	9%	1	9%
B. Apply current research on teaching and learning with technology when planning learning environments and experiences.	B						P						0	0%	0	0%	1	9%
C. Identify and locate technology resources and evaluates them for accuracy and suitability.	B		A			A	ASP	A	A	A		A	7	63%	1	9%	1	9%
D. Plan for the management of technology resources within the context of learning activities.	B						ASP						1	9%	1	9%	1	9%
E. Plan strategies to manage student learning in a technology enhanced environment.	B						SP						0	0%	1	9%	1	9%

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III. Teaching, learning, and the curriculum																		
A. Teachers implement curriculum plans that include methods and strategies for applying technology to maximize student learning. Teachers:	B												0	0%	0	0%	0	0%
B. Facilitate technology enhanced experiences that address content standards and student technology standards.	B						SP						0	0	1	9%	1	9%
C. Use technology to support learner centered strategies that address the diverse needs of students.	B						ASP						1	9%	1	9%	1	9%
D. Apply technology to develop students highest order skills and creativity.	B					A	AP						2	18%	0	0	1	9%
E. Manage student learning activities in a technology enhanced environment.	B						SP						0	0	1	9%	1	9%
IV. Assessment and Evaluation																		
A. Apply technology in assisting student learning of subject matter using a variety of assessment techniques.	B	S	S				S			A			1	9%	3	27%	0	0%
B. Use technology resources to collect to analyze data, interpret results, and communicate findings to improve instructional practice and maximize student learning.	B												0	0%	0	0%	0	0%
C. Apply multiple methods of evaluation to determine students' appropriate use of technology resources for learning, communication, and productivity.	B												0	0%	0	0%	0	0%

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V. Productivity and Professional practice																		
A. Use technology resources to engage an ongoing professional development and life long learning.	B								S				0	0%	1	9%	0	0%
B. Continually evaluate and reflect on professional practice to make informed decisions regarding the use of technology in support of student learning.	B				S		P					A	1	9%	1	9%	1	9%
C. Applied technology to increase productivity	B		A			A	P		AS			A	4	36%	1	9%	1	9%
D. Use technology to communicate and collaborate with peers, parents, and the larger community he in order to nurture student learning.	B		A				S		A				2	18%	1	9%	0	0%
VI. Social, ethical, legal, and human issues																		
A. Model and teach legal and unethical practice related to technology use.	B			A			AP						2	18%	0	0%	1	9%
B. Apply technology resources to enable and empower learners with diverse backgrounds, characteristics, and abilities.	B					A			A				2	18%	0	0%	0	0%
C. Identify and use technology resources that affirm diversity.	B					A			A				2	18%	0	0%	0	0%
D. Promote safe and healthy use of technology resources.	B												0	0%	0	0%	0	0%
E. Facilitate equitable access to technology resources for all students.	B								A				1	9%	0	0	0	0%