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AUTHOR Beacham, Betty; Kester, Diane D.
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ABSTRACT

East Carolina University (North Carolina) and Pitt County Schools (North Carolina) have developed the Model Clinical Teaching Program (MCTP), to introduce preservice, inservice, and methods faculty to the information "superhighway." The project focuses on the what, how, and why of technologies as they relate to classrooms, in the public schools and at the university. The first phase of the technology plan is the use of telecommunications including electronic mentoring and electronic peer coaching, as a technique to enhance the professional growth of preservice and inservice teachers, administrators, and university faculty. The second phase of the technology plan is the use of technology as a tool for investigation and decision making to enhance the intellectual development of elementary students. The plan uses a shared equipment, software, and technical expertise approach to construct easy "access ramps" to the information highway. The plan also uses a shared electronic problem solving staff development approach to provide "road maps" for highway use. For evaluation purposes interns submit reflective journals each week and make opening and closing observations at the beginning and end of the year's program. Each group also completes a Media Proficiency self-evaluation questionnaire at regular intervals. Other data are collected from observations by researchers obtained during group gatherings. Contains 12 references. (JB)

Getting Educated Drivers onto the Information Highway:

A North Carolina Initiative to Begin the Journey

from Country Lanes to the Superhighway

Dr. Betty Beacham, Director
Model Clinical Teaching Program
School of Education
East Carolina University
Greenville, NC 27858-4353
(919) 328-4357
edbeacha@ecuvm.cis.ecu.edu

Dr. Diane D. Kester, Assistant Professor
Department of Library Studies & Educational Technology
School of Education
East Carolin[illegible] University
Greenville, N[illegible] 7858-4353
(919) 32[illegible]-621
lsddkest@ecuvm.cis.ecu.edu
lsddkest@micronet.wcu.edu

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Getting Educated Drivers onto the Information Highway: A North Carolina Initiative to Begin the Journey from Country Lanes to the Superhighway

by Dr. Betty G. Beacham and Dr. Diane D. Kester

Overview

Universities and public schools must work together to prepare preservice and inservice teachers to use the technologies of the 21st century. The Model Clinical Teaching Program (MCTP) is a national award-winning teacher development program collaboratively designed and implemented by East Carolina University and Pitt County Schools. One of the MCTP's objectives is to develop ways to use technologies to improve the ways we teach and learn.

There is no disagreement in the literature that teacher education programs should provide technology training. In 1983 the Elementary and Secondary Schools subcommittee of the Association for Computing Machinery Education recommended a special course for teacher education. (Association for Computing Machinery education, 1983). In the report by the Office of Technology Assessment (1988) identified teachers' lack of training and limited access to computers as a primary barrier to the use of computers into the instructional process. (OTA, 1988). Progress has been slow and it is discouraging that student teachers have few

opportunities to see the use of technology during their field visits to schools (Sheingold & Hadley, 1990; Bosch & Cardinale, 1993). How much training and how it is to be incorporated into teacher preparation is still under discussion (Bosch & Cardinale, 1993; Ingram, 1992; Descy, 1993; ISTE, 1993; Sturdler, 1993). Sustained practice and staff development are essential yet are too often omitted from the integration of technology into classroom instruction (Sheingold & Hadley, 1990).

Building on the findings from the research literature, East Carolina University School of Education and the Pitt County Schools have developed a unique approach to meet the needs of preservice teachers, inservice teachers and methods faculty simultaneously. This staff development project focuses on the what, how, and why of technologies as they relate to classrooms, both in the public schools and at the university.

The first phase of the technology plan is the use of telecommunications, including electronic mentoring and electronic peer coaching, as a technique to enhance the professional growth of preservice and inservice teachers, administrators, and university faculty. The second phase of the technology plan is the use of technology as a tool for investigation and decision making to enhance the intellectual development of elementary students. The plan uses a shared equipment, software, and technical expertise approach to construct easy "access ramps" to the information highway. The plan also uses a shared electronic problem solving staff development approach to provide "road maps" for highway use.

Background

The Model Clinical Teaching Program at East Carolina University is an innovative model of teacher development that brings together preservice and inservice teachers, administrators and university faculty for a year of inquiry, experimentation and reflection. Building upon the four cornerstones of Partnership, Internship, Mentorship and Leadership, the MCTP has constructed a new design for teacher preparation, growth and renewal. This university/public schools collaborative continuously explores ways to create a support environment for the professional development of all educators, K - university in which to define, clarify and refine the art and science of teaching and learning (Beacham, Thomson, & Misulis, 1992).

The year-long internship provides extensive opportunities for preservice teachers to integrate their university coursework into the context of a public school classroom, maximizing the benefit of applying theory in real learning environments. The preservice teachers in the program, known as interns, begin their senior year at the same time that the public schools begin their school year. In August and September, they perform "mini-teaching" tasks, assisting their teacher, known as a clinical teacher, in a variety of non-teaching, group, and individual activities. Beginning in October, interns and clinical teachers team plan, team teach, and team reflect. Interns continue to assume more responsibilities to the end of fall semester. By January, interns are performing all responsibilities as the classroom teacher, with the clinical teacher acting as guide, coach and facilitator.

Working closely with their clinical teachers, interns explore all facets of the school organization and roles of a classroom teacher. Operating as a cohort group during the year-long experience, the interns are encouraged to explore all aspects of professional development. This approach provides an invaluable source of networking, problem solving and collaboration. The networking concept extends beyond graduation, providing support for MCTP graduates as they become beginning teachers (Beacham, Rikard & Knight, 1994).

The MCTP's mentorship pairs each intern with a clinical teacher in an extended growth relationship. All clinical teachers work together to create a supportive learning environment in which interns and clinical teachers together examine and reflect upon belief systems, curricular and instructional practices. The clinical teachers have received and continue to receive special training in seminar settings that allow them to examine, discuss and reflect upon the process of teaching and learning, instructional decisions, mentoring practices and issues critical to quality education for all children (Rikard and Beacham, 1992).

A site based management team, composed of a representative from each of the six participating schools, the methods professors and the program director, oversees the implementation and annual evaluation of the program. Based upon the feedback of all participants, the team develops the revision plan for the next year. In April, 1992, the consensus of all MCTP participants was that the MCTP curriculum must be revised to include technology. This paper describes the development and implementation of the MCTP plan to integrate technology into the xisting

methods courses and to train MCTP "drivers" to be successful travelers on the information highway.

Project Design

Phase One: Needs assessment - personnel and fiscal

Personnel. A study conducted in the early fall of 1993 to examine the interest and use of technology by the clinical teachers revealed that general interest in using technology was high; however, responses indicated that 14 of the 21 (67%) had never used telecommunications either personally or in teaching. These data provided the beginning point for a staff development plan which would provide experienced teachers with the personal skills to use the technology tools of learning that are now finding their way into the schools (Kester, 1994).

Technology Awareness and Use Survey 1993

I have used telecommu-nications for:	Frequently	Often	Seldom	Never	Not available	Need to know more
personal use.	0	1	2	14	3	6
instructional use.	0	1	1	14	6	4

Fiscal. To complement the personnel needs assessment, an assessment of the facilities and equipment was made. The Director of Media Services of the Pitt County Schools, with the assistance of Dr. Diane Kester, educational technology faculty member, prepared a plan for the

acquisition of equipment and software for telecommunications workstations. The plan included the installation of telephone lines and the purchase of modems and communications software. An inventory of the computers in each school identified which schools had an available computer and which schools would need an additional computer to be supplied from surplus from the university.

Phase two: Implementation and staff development

Implementation: Building the Access Ramps.

In the spring of 1994, the Pitt County schools installed a telephone line in each library media center. This line was to be shared by telefax and telecommunications applications. The school system purchased modems and telecommunications software, *Pro-Term*, for those sites using an Apple IIGS computer. The university provided telecommunications software, *ProcommPlus*, for the MS-DOS computers. Installation and setup of the software was provided by graduate students in a telecommunications class.

At the beginning of the 1994 fall semester, a Media Proficiency questionnaire was completed by each intern, clinical teacher, and methods faculty. Participants indicated their level of skill in various applications of technology. The data from these questionnaires was analyzed and used in the development of the inservice workshops and assignments for the interns.

Staff Development: Educating the Drivers

During the Spring 1994 semester, the interns began implementation of the technology plan. Their schedule began with three weeks in their

schools in the morning and a special section of the required technology course during the afternoon. Their professor, working with the MCTP director, incorporated activities and assignments to be incorporated into their student teaching experience.

A key feature was the use of electronic mail to send and receive assignments. Also, one group assignment provided an opportunity to explore a telecommunications service, educational or commercial, and develop a plan for its use in classroom. Interns were also encouraged to participate electronically with student teachers at two other teacher education institutions through MicroNet, an electronic service of Western Carolina University. Through these communications, interns were presented actual classroom situations to discuss and utilize problem solving skills.

At the beginning of the 1994-95 year, the telecommunications component was integrated into methods courses. Interns and clinical teachers received IDs to access the mainframe computer at the university. This computer can be accessed with a direct connection in the methods classroom, as well as by dial-up access from the schools. Training began with the fundamentals of telecommunications and the menu options that are available on the university's computer. Participants were taught to send and read e-mail, to develop a nickname file, and to subscribe to an educational discussion group, called a LISTSERV.

Objectives.

The objectives for the staff development initiative were the same both preservice and inservice teachers and faculty members.

1. To become familiar with relevant telecommunications concepts and terminology as well as the functions of system components.

2. To investigate formal and informal sources of information using telecommunications.

3. To develop a plan to integrated the use of telecommunications into the curriculum.

4. To address the North Carolina Computer Skills telecommunication competencies for grades K-8.

5. To become reflective about the process involved in using telecommunications.

Initial telecommunications training for the clinical teachers and methods faculty began in September, 1994 with a hands-on workshop sponsored by Academic Computing. In the schools, technology support was provided by Educational Technology faculty and a graduate student intern in the Instructional Technology - Computers program. In subsequent sessions for the 1994-95 school year, clinical teachers will be introduced to the educational services available locally: FrEdMail, Learning Link, and MicroNet.

This semester, a new service has become available through the ECU School of Education. This service, EastNet, was initiated to provided Internet access to non-university educators located in eastern North Carolina. A total of 14 phone lines, 5 of them toll-free, are available for dial-up access. EastNet is also available through the networked educational computing lab. Learning guides will be developed for EastNet using the MCTP participants and graduates as a pilot group of trainees.

This academic year, inservice training for the Leadership Team and clinical teachers is held in the schools once a month. Electronic mentoring for these groups is accomplished through e-mail messages sent to each participant at least once a week. Whenever the technology professor identifies an electronic discussion message of interest to elementary school teachers, she forwards these messages to the entire group. Examples of these messages include other teachers looking for a classroom to pair with for telecommunication projects, discussions about parent-teacher relationships, and the location of teaching resources. The MCTP director, the methods faculty, and the technology professor will monitor the electronic activity throughout the year.

Inservice Training Schedule 1994/1995

Date	Topic	Hours	School
Sept.	Getting on e-mail, menus	1	ECU
Oct.	Nicknames and LISTSERVs	1	each school
Nov.	EastNet and MicroNet	1.5	each school
Dec.	FrEdMail	1	each school
Jan.	Learning Link	1	each school
Feb.	Curriculum resources (FrEdMail)	1.5	each school
March	Projects from Learning Link	1.5	each school
April	Telnet sites	1.5	each school

Telecommunication activities

E-mail. The benefits of e-mail (one to one) communications have become quickly evident to all. During the spring of 1993, announcements were posted during the technology class; however, with the introduction of telecommunications during the 1994 fall term of the second year, communication opportunities have been expanded. Methods classes meet only twice a week. At least once a week, university faculty write messages to each intern. These messages address classroom assignments, announcements of events and opportunities on campus, and begin to formulate scenarios for discussion. Clinical teachers report weekly on the progress of the interns and their own progress in using telecommunications. Interns communicate with each other, especially those who were in different schools. Additionally, they are given assignments from their technology faculty.

Discussion Groups. Once participants are comfortable with one to one communications, they will be encouraged to utilize a local discussion group. The local FrEdMail node provides a forum for all student teachers at the university. Here, university professors leave scenarios of classroom situations and encourage discussion and role playing by the interns. Some discussions are open to participation by the clinical teachers. The communication highway will allow ECU student teachers to join discussions with student teachers in other teacher education programs using MicroNet. Interns in MCTPs at the University of North Carolina at Chapel

Hill as well as those at Appalachian State University will participate in discussions.

Each intern has been required to subscribe to one LISTSERV on an educational related topic. Computers in teaching (CTI-L), elementary education (ELED-L), the international e-mail classroom connection (IECC), KIDSNET, middle school education (MIDDLE-L), and science in the elementary schools (T321-L) were popular discussion groups. Interns record the variety of topics being discussed and their reflections on the discourse that develops. They are encouraged to participate in the discussions. With the university computer being used, it is also easy to forward a copy of the message to the methods faculty or others with an Internet address.

Internet tools. As participants gain experience, they will be introduced to tools including gopher and World Wide Web. Activities include specific directions to locate a resource on a gopher server as well as questions to challenge navigation skills.

Mentoring and networking after graduation

After graduation students loose their accounts on the university computer; however, the services of EastNet, FrEdMail, MicroNet, and Learning Link continue to be available. Each of these provides an Internet address thereby maintaining the capability for communications to the university faculty. To keep in touch with the graduates of the program, a discussion group will be formed for first and second year teachers. This will provide support during the induction period as well as identify situations which can be used by the methods faculty.

Evaluation

As an ongoing activity in the MCTP, interns submit reflective journals each week. In September, interns were asked to observe the use of technology within the school and to describe their perception of the integration of technology into teaching. At the end of the year, interns will be asked again to make a similar observation to see if there has been any change in actual use of technology as well as any change in the perceptions of the interns.

The Media Proficiency questionnaire asks for a self evaluation as to the level of proficiency in using a variety technologies. Each group, clinical interns, clinical teachers, and university methods faculty, completed this assessment at the beginning of the fall semester, 1994. They will again assess their own level of proficiency in the spring semester, 1995. This data will be evaluated to determine the change in proficiency during the year.

Other data will be obtained from observations by the researchers. During group gatherings, data will be collected on the concerns, reactions, and reflections of the participants. Observations, as a part of the student teaching experience, will include a record of classroom activities that integrate the use of technology. Journal entries of the clinical teachers will be analyzed and interviews will be conducted.

Conclusion

The impact of technology in our lives today is reinforced through news reports and daily encounters with computerized businesses, banking, government agencies. Students in elementary schools today, will

soon be working in a society that demands the use of technology. It is imperative that universities take the leading role in preparing teachers who in turn will prepare our students to be successful in the 21st century. The Model Clinical Teaching Program is one such initiative that seeks to create a model to prepare preservice, inservice teachers and methods faculty to integrate technology in the classroom, at the university as well as in the elementary schools.

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