Abstract: The study identified perceptions of school of education faculty members at a Historical Black College and University. The research addressed the following areas: faculty attitudes to technology integration, faculty development, and faculty’s perception to technology integration as an administrative tool. Data was collected through a survey instrument and faculty technology development training. The Faculty Attitude to Information Technology instrument (FAIT) was administered as at the beginning of Fall 2003 semester. Chi square analysis was done on the pre-test FAIT. T-test will be conducted on the pre and post FAIT Instrument at the end of the 2003-2004 school year. Several technology faculty development sessions are scheduled throughout the year (2003/04) to meet the technology needs of instructors.

INTRODUCTION

The advancement of technology has redefined the role of the instructor (Brook and Brook, 1999), the role of the student in the learning process (Ledford, 2000), how we address contemporary issues in education (Dawson et al., 2000), and the definition of schools and teaching styles (White, 1999). As software and hardware development continue to grow, the integration of technology as instructional and administrative tools seems to be in a state of flux (WBEC, 2000). This disparity between technological development and integration of technology is a clear indication that educational systems are falling further and further behind in integrating technology as instructional and administrative tools (WBEC, 2000).

Teachers’ preparation and training to integrate education technology in instruction is a key factor to consider when examining their use of computers and the Internet for instructional purposes (NCES, 2000). Diem (2000) states that the slow implementation of technology in teaching can be traced to teacher education programs. Reports and publications show that many universities and colleges do not effectively integrate technology in their teacher education programs or utilize their technological resources to its full capability (Education Week “Technology Counts,” 1998, 1999; NCATE, 1997; NCATE 2000; WBEC 2000). In a study of college of education students, Craig and Omorogbe (2000) state that, on a scale of 1-5, - -one being the lowest and five the highest-- most students rate their ability to use technology in instruction and their professor’s ability to use technology in the lowest levels of the scale, mainly 1-2.

For technology to have an impact on pedagogical competence and increase content knowledge in teacher education programs, instructors must be the driving force for integration. Instructors’ modeling of computer technology in teacher education courses influences the adoption of computer technology use in instruction in later years by preservice teachers (Mason, Berson, Diem et al., 2000). Instructors can exert direct influence on preservice teachers’ self-efficacy by providing opportunities for enactive and vicarious experiences and through verbal persuasion (Mason, Berson, Diem et al., 2000). In defining the
characteristics of an exemplary computer-using teacher, Becker (1994) states that one defining trait is that exemplary computer using teachers had more formal training using and teaching with computer. This further strengthens the point that teacher education programs need to train teachers to integration computer technology as a teaching and learning tool. Computer technology is effective when integrated within the curriculum courses rather than taught in isolation. (Wang & Holthanus, 1997).

The school’s technological climate is also vital to computer integration. A school climate that is conducive to technology includes administrative support, peer support and students who expect to see computers in use and use them (Marcinkiewiez, 1996). A climate conducive to computer technology integration includes providing professional staff development opportunities with release time for skill building and instructional preparation (Bradley & Russell, 1997). According to Bradley & Russell, teachers who work in a school, which is supportive in computer technology use, demonstrated lower anxiety and higher levels of competence than teachers in a non-supportive school did. Diem (2000) states that technical support plays a critical role as to whether teachers use technology in their instruction. NCES (1999), teachers identified the following as significant barriers to use of computers and the Internet for instruction:

- 82% identified lack of release time for teachers to learn/practice/plan ways to use computer or the Internet.
- 80% identified lack of time in schedule for students to use computers in class.
- 78% identified not enough computers.
- 71% identified lack of good instructional software.
- 68% identified lack of support regarding ways to integrate telecommunications into the curriculum.
- 67% identified inadequate training opportunities.
- 66% identified outdated, incompatible, or unreliable computers.
- 64% identified lack of technical support or advice.
- 59% identified concerns about student access to inappropriate materials.
- 58% identified Internet access is not easily accessible.
- 43% identified lack of administrative support.

Wang & Holthanus (1997) identified lack of hardware and software resources as an automatic barrier to integration. Teachers also cited the lack of adequate training or support in computer use as additional barriers. Keiper, Harwood and Larson (2000), identified lack of time to find resources, prepare teaching material and participate in training programs as barriers to effective integration of technology in teaching. Generally, teachers who perceived lacking computers and time for students to use computers as great barriers were less likely than those who did not perceive these conditions as barriers to assign students to use computers or the Internet for some instructional activities. Hannafin & Savenye (1993) state that teachers who used traditional methods of teaching created a self-imposed barrier to integrating technology in teaching and learning. Technology integration with preservice teachers requires trained, competent and confident faculty to model technology use, teach preservice teachers how to integrate technology in teaching and motivate preservice teachers to use it (Vannatta & Beyerbach, 2000). They state that lack of higher education faculty trained in the use of technology in teaching is a challenge to technology infusion in teacher education.

**PURPOSE OF STUDY**

The purpose of this study is to identify the perceptions of attitudes of faculty members to technology integration as instructional and administrative tools. The following questions guided this research:

1. What are the attitudes of faculty to technology integration?
2. What are faculty attitudes to faculty technology development?
DATA SOURCES

Data was collected through a questionnaire. The Faculty Attitude to Information Technology instrument (FAIT) was administered as a pretest at the beginning of Fall 2003 semester and will be re-administered at the end of Spring 2004. Chi square analysis was done on the pre-test FAIT. T-test will be conducted on the pre and post FAIT Instrument. Several technology faculty development sessions are scheduled throughout the year (2003/04) to meet the technology needs of instructors.

SCHOOL OF EDUCATION - WORKSHOP DESCRIPTION

The following courses are scheduled for faculty development during the 2003/04 school year:

- Adobe Acrobat - Topics include file formats, creating .pdf files, and the Acrobat Reader.
- Advanced PowerPoint - Topics include use of sound clips, hyperlinks to web sites, skipping to other slides in presentation, and background design if time allows.
- Advanced Blackboard - Topics include using the grade book / assessment features and posting PowerPoint presentations.
- Blackboard Refresher - Topics include changing site appearance, posting materials to the web site, and student communication.
- Digital Cameras - Learn the basics of digital photography including considerations such as lighting, file size, and application use (print, web, etc.) and how to perform quick and dirty editing using either a shareware editing program such as PaintShop Pro or the professional photo editing program Photoshop.
- Electronic Portfolios - Topics include using the new web-based software by students and faculty for student portfolio creation.
- Excel Gradebook Strategies - Topics include creation of grade books and design of the algorithm to weight grades according to syllabus.
- iMovie - Topics include downloading digital video images, editing the video clips, adding effects to create digital movies for students’ portfolios.
- Inspiration - Topic is concept mapping creation, modification, use by students, and printing.
- “PIECE OF CAKE” Webpages - Topics include creating great pages using very simple new features in Microsoft XP (NCCU has site license).
- Scanning Documents - Topics include scanning techniques, beginning photo editing, and scanning text documents for later editing.
- SIS Refresher - Topics include screen use for access of student PIN, transcripts, and address information.
- Synchronbeyes - Topic is using the software in the PC and Mac labs to show screens of any lab user on the front screen.
- WEB FOR FACULTY - Topics include design principals for effective page creation.
- WEB PAGES TO THE SERVER - Topics include how to control your own folder of web pages, storing pages as they need updating.
- Jumpstart/Refresher Windows Orientation - New and experienced users will learn how to install new software in Windows, the basics of file sizes including how to copy a file to floppy, how to find features in Windows, basic shortcut keys, and how to customize your Windows workspace.
- Jumpstart/Refresher Word Processing - The workshop on word processing will review basic word processing strategies needed to work efficiently. Tips on how to best utilize tabs, formatting and other features will be reviewed.
- Advanced Web Page Design - Use Microsoft Frontpage to design a page that looks good and presents information in a universally accessible format. Considerations including use of graphics, importing text from other sources (i.e. word processing programs) and formatting for the blind.
- SMART Board Basics – This workshop will get you up and running with SMART Board. We’ll cover hooking up S.B., turning it on and shutting it down, operating the projector, using the internal computer or hooking up a laptop, programming the board, writing & erasing on the board, and accessing the Internet.
• Jumpstart to Visual Presenter, Smartboard, Overhead Projection - Learn how to use and operate the visual presentation equipment. We will cover proper connections, start up, shut down and peripheral equipment operations. A demonstration of the Elmo Visual Presenter will be provided. Some discussion of possible and appropriate uses of equipment will follow demonstrations. (For refresher or new users).
• Online Collaboration - The focus of this workshop is the use of the Internet for file sharing. Hands on activities will include email attachments, setting up an address book, and collaborating through email with Word documents.
• SAS inSchool Software - This workshop will provide a general overview of the SAS inSchool Software. Participants will get hands on access and exploration of the tools, and program components. Participants will brainstorm possible uses for course integration using the software.
• Computer File Organization - Learn how to organize the files you save to make finding them "a piece of cake". This session will show saving/copying/moving/opening files, creating directories, and strategies maintaining files.
• Student Information System (SIS) - SIS Training consists of logging onto the SIS System with assigned User ID's. Information on access screens used to retrieve relevant Student and Course Information. Information also included on the new Eagles Online Access.
• Online Courses - An overview of computer based “anytime/anyplace” software for learning a wide variety of applications. The program package was purchased by NCCU as a resource for faculty development.

THE MATHIS GROUP

The Mathis Group (TMG) provides technical support and services via online and remote access to the School of Education. These products and support integrate the present use of the campus student information and advising system and greatly enhance faculty capability of tracking student database information. Remote access of online data is extremely important to faculty in the School of Education since candidate and unit assessment is a continuous professional obligation and requirement of NCATE and NCDPI. Ultimately, the Mathis Group assures access and capability for student advising, data and information systems data input and retrieval at any point of Internet access. This also greatly impacts and enhances faculty ability to advise Distance Education and traditional students.

SCHOOL OF EDUCATION ELECTRONIC PORTFOLIO/MATHIS GROUP

The Electronic Portfolio requirement for candidates enrolled in the School of Education will begin in the Spring 2004 semester. Freshmen and sophomores admitted to the Elementary Education Program will be required to successfully complete and submit their electronic portfolios as a program completion requirement. Juniors and seniors presently enrolled in the Elementary Education Program will have the option of completing the electronic portfolio or completing the standard notebook portfolio. Electronic portfolios will be reviewed and approved by faculty members, advisors and/or cooperating teachers. The School of Education will launch the Electronic Portfolio requirement with the Elementary Education Program as a future prototype for its other undergraduate and graduate programs to follow.

WHAT WILL THE ELECTRONIC PORTFOLIO LOOK LIKE?

The Electronic Portfolio will be a web-accessed repository of student deposited artifacts based on program gateways and standards. The student electronic portfolio will be linked to the present University Student Information and student advising systems. Students and faculty members will interact with archived student files that represent and demonstrate student competencies, reflections on artifacts, and include communication capabilities for feedback and approval status.
FINDINGS, IMPLICATIONS AND RECOMMENDATIONS

The Mathis Group will design the web-accessed infrastructure and interfaces necessary to build the student electronic portfolios. The Earl Mathis Group will manage the web-server computer will house the student electronic portfolios. The web-server will be physically located in the University Information Technology Department, which will allow back-up of files and data management. Training for faculty and student use of and access to the electronic portfolio repositories will be scheduled and provided.

References


