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ABSTRACT

This practicum addresses the finding that college-bound high school experiential/internship students who pursued stringent secondary education programs often did not have the opportunity to participate in technology literacy elective courses, and therefore did not possess the minimal technology skills necessary for success in post-secondary education or the professional workforce. A technology development professional development curriculum was designed to increase competency in: (1) word processing skills; (2) database entry and manipulation; (3) spreadsheet entry and manipulation; (4) desktop publishing; (5) graphic development and manipulation; and (6) audio-visual recording and manipulation. The curriculum design involved the requirement that students use technology in order to complete internship-related assignments; use of lesson plans with reflective activities which introduced technological concepts; the development of activities which were relevant to students' lives and internship experiences which could be illustrated and analyzed with integrated software applications; and engagement in post-secondary media center research that enabled students to conduct on-line searches relating to the professional internship fields. Student competency evaluation consisted of students developing a portfolio exhibiting all technology products developed during the course, post tests measuring knowledge of technology terms and applications, completion of a comprehensive media center assignment, and exhibition of technology skills at the professional internship site as measured by sponsor feedback on student performance. Week-by-week documentation of the course is provided. Results showed that the implementation strategies greatly improved student competency, and that by regularly providing technology access to students, confidence levels were heightened. Fourteen appendices include many of the instruments utilized in the study. (Contains 15 references.) (MAS)

Technology Integration into Secondary Experiential/Internship Education Professional Development Curriculum

by

Mary C. Black

Cluster 59

A Practicum I Report Presented to the
Ed.D Program in Child and Youth Studies
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Education

NOVA SOUTHEASTERN UNIVERSITY

1995

PRACTICUM APPROVAL SHEET

This practicum took place as described.

Verifier: Linda D. Benware

Linda D. Benware

Supervisor, Magnet/ Choice Programs

Largo, Florida

January 11, 1995

Date

This practicum report was submitted by Mary Canny Black under the direction of the adviser listed below. It was submitted to the Ed.D. Program in Child and Youth Studies and approved in partial fulfillment of the requirements for the degree of Doctor of Education at Nova Southeastern University.

Approved:

Feb. 10, 1995
Date of Final Approval of Report

Wm. W. Anderson
Dr. William Anderson, Adviser

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ABSTRACT

Technology Integration into Secondary Experiential/Internship Education Professional Development Curriculum. Black, Mary C., 1995: Practicum Report, Nova Southeastern University, Ed.D. Program in Child and Youth Studies. Technology Education/Experiential Education/Technology Integration/Professional Development/College Preparatory/Computer Literacy/Academically Talented/Internship Education/Secondary Education

This practicum addressed the finding that college-bound high school experiential/internship students who pursued stringent secondary education programs often did not have the opportunity to participate in technology literacy elective courses and therefore, did not possess the minimal technology skills necessary for success in post-secondary education or for the professional work force. Therefore, the author designed a technology integrated professional development curriculum to prepare students to succeed in the internship environment and later in post-secondary education and the professional workforce by utilizing post-secondary automated media centers and various software applications as tools.

The practicum design required students to rely on technology to complete required internship-related assignments. Lesson plans included reflective activities that introduced fundamental technological concepts and that built upon previously mastered concepts and tasks. The writer developed activities relevant to students' lives and internship experiences which could be illustrated and analyzed with sophisticated integrated software applications. The design emphasized curriculum content and presented technology as the means by which to achieve satisfactory outcomes. Post-secondary media center research enabled students to conduct on-line literature searches relating to the professional internship fields.

The resulting practicum data revealed that the implementation strategies greatly improved student competency and that by regularly providing technology access to students, confidence levels were heightened. Results indicated that students viewed themselves as having gained in overall ability and competence and that they perceived themselves as far more capable of succeeding in post-secondary education research projects. Students related the many benefits that technology offered them and a preference for technology utilization, which the writer views as contributing to the practicum's overall success.

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CHAPTER I

INTRODUCTION

Description of Community

The writer is currently employed in the south eastern region of the United States. As compared to other counties in the state this county is the most densely populated. The county reflects a growth rate of 44% over the last ten years, and it is still growing. In this state, the school districts are divided by county, with this district being comprised of 115 regular public schools, 9 exceptional education schools and centers, 21 alternative education centers, and 11 vocational and adult/community schools. These schools yield approximately 126,668 students, making the county the 7th largest district in the state and the 22nd largest district in the nation. The district serves a school population which is 78% white, 18% black, 2% Hispanic and 2% Asian. Due to federal desegregation laws, each school within the district is representative of the overall population creating a diverse population amongst the student bodies. In order to fairly represent all cultures, the

school staffs represent the overall population in creating unique opportunities for multicultural awareness and diversity in educational practices and delivery.

Writer's Work Setting and Role

The writer's current work setting is a district-wide program designed for student field-based education. The program enables college-bound high school seniors to participate in field-based professional internship experiences. The program's philosophy lies in the domain of experiential education, and the program provides the opportunity for academically talented and motivated high school juniors and seniors to reach beyond the formal education of the classroom and to experience a unique integration of theory and practical application within the professional setting. For the portion of the school day in the internship program, students receive high school academic elective credit, junior college professional development dual-credit, post-secondary survival skills, and moreover, hands-on experience in the professional work setting.

Three program coordinators, with the writer serving as one coordinator, coordinate and monitor internship

placements and instruct the selected students from the fifteen district high schools. Being program coordinator is a complex task as there are many aspects to the coordination and implementation of the program. The coordinator's role is greatly varied, but the ultimate goal is to expose students to the realities, responsibilities, and dynamics of the professional environment, thereby allowing students to make educated decisions when selecting career and higher educational paths. Because of the nature of the writer's job as a program coordinator and as an educator, the position allows the freedom to travel throughout the district and to work with the business and the school communities, while still having student contact both in and out of the classroom. The coordinator's responsibilities include recruiting students and professional sponsors into the program, placing students in professional internship settings, and monitoring students and sponsors at the internship setting. Coordinators also instruct students in professional development curriculum and grade student coursework.

CHAPTER II

STUDY OF THE PROBLEM

Problem Description

The experiential program is very unique to the regular education model. In this experiential program, students were released from the school setting and attended internships at professional settings and met bi-weekly with the coordinators for professional development seminars. With the experiential program delivering services to the academically talented college-bound high school senior, the coordinator recognized a distinct absence of technology skills in that population.

In today's professional workforce it is imperative for employees to be technologically literate so as to excel in their careers and to maintain their professions of choice. Also, with the demands of post-secondary education, students must be able to fully utilize the technology-based, automated post-secondary media centers in order to reach their educational potential. Professional sponsors indicated that technological literacy is imperative to

student success and entry into the professional workforce. When students were placed in internship settings, sponsors assumed that students had technology experience and that students were able to carry out professional tasks without guidance. However, students had shown difficulty in comprehending certain technology-based tasks, and, therefore, had shared feelings of inadequacy and incompetency at the internship site. Also, when students did not possess basic technology skills, sponsors were likely to involve students less frequently in projects which would have otherwise broadened a student's scope of experience and knowledge about the professional field.

Because internship students placed in professional work settings did not possess technology skills necessary for optimal internship experiences, they were not receiving quality hands-on experiences. Also, internship students, when required by the program coordinators to complete college-level studies utilizing post-secondary media centers, did not have the technology skills necessary to fully utilize the post-secondary media centers. In short, college-bound high school students who pursued stringent secondary education programs often did not have the opportunity to participate in technology literacy elective courses and therefore, did not possess the technology skills

necessary for success in post-secondary education or for the professional work force.

Problem Documentation

The targeted students were involved in educational programs which required heavy course loads and rare scheduling opportunities outside of graduation requirements. With the district's schoolday reduced to six periods, each class period was required for graduation; therefore, those students who pursued specific educational paths had no scheduling opportunities for elective courses which deliver professional and practical computer skills and which prepare students for the challenges presented not only for success in the professional environment, but also for academic success in post-secondary education.

When high school students were given opportunities to intern in professional environments, they had to be prepared to face the challenges before them. If students did not have the opportunity to participate in technology preparation courses in the high school environment, then their professional opportunities for experience were lessened and intensive and hands-on professional opportunities were not offered to them. Also, without a

working knowledge of post-secondary media center services and utilization, students were possibly hindered in realizing their full potential in post-secondary education.

A survey of professional internship sponsors (Appendix A) indicated that there was a specific need for students to be better prepared for workplace challenges and these challenges required a strong technology background. Thirty sponsors completed a survey which inquired as to the importance level of specific technological skill and knowledge required within their specific professions. The survey utilized a rating scale of one through four (1-4) with one (1) indicating no relative importance of the technological area to the specific professional field and four (4) indicating a great deal of importance of technological knowledge and skill level to the professional field. Mean ratings were determined from the sponsor sample group. When surveyed as to the importance of word processing development and data entry skills, professionals indicated a 3.16 rating. The sponsors' mean rating for the importance of data base development and manipulation was 3.14, and spreadsheet development and manipulation was rated at 2.73. The professional internship sponsors indicated a 2.39 mean rating for graphic manipulation and illustration, and 2.46 for application software and graphic integration

skills. When surveyed as to the relative importance of Computer Assisted Drawing (CAD) and software development skills, sponsors indicated a .95 mean rating for each; however, only 2% of the sponsors surveyed were in technically-related fields. Sponsors indicated a 2.77 rating for operating system understanding and utilization, 2.35 for audio-visual operations and presentation development skills, and a 3.05 rating for VCR operation knowledge.

The student sample population's academic characteristics were indicative of the academically talented college-bound high school senior population. An eight-item technology background and skill level pretest (Appendix B), composed of a one through five (1-5) scale with five (5) indicating a high level of technological competence or ability and one (1) indicating a low level of technological competence or ability, was administered to 20 internship program students and then mean ratings were determined. The mean rating for identifying the physical components of a microcomputer was 2.75, which is just below moderate. For utilizing Disk Operating System (DOS) commands, the mean rating was 2.25, indicating moderately low to low competency and ability levels. When asked to indicate their understanding of the difference between system and

application software, students indicated a low to moderately low 1.875 mean rating, and when surveyed as to Computer Assisted Instruction (CAI) utilization and interaction, students indicated a 2.125 mean rating. The survey indicated a 2.75 mean rating for utilizing word processing packages, a 2.125 rating for utilizing electronic spreadsheets, and a 1.75 rating for creating and managing a data base document. Students indicated an overall competency and ability for effectively operating a microcomputer, performing steps in input, processing, output, and storage at 2.125 indicating a moderately low level of technological competence or ability.

Also, the 20 students were given specific research projects (Appendix C) to be completed within the post-secondary media center. The level of completion within a two-hour period was less than 50%, indicating that students did not possess the resourcefulness and media center-based knowledge to adequately gather and assimilate information within a technologically automated media center.

Causative Analysis

That students were perceived as minimally competent in technology skills and in utilizing post-secondary media

centers was primarily related to four factors. First, students selected for the internship program were from a population of high school students who pursued stringent course requirements, so as to be prepared for college admission, throughout their high school careers. When specific courses of study were required for college admission into specific fields, students pursued very regulated course loads, and therefore, did not have class periods available to pursue elective studies such as technology literacy courses. With the district having shortened the school day, thus losing one class period, students' schedules were more stringent and regimented than ever before. A typical student no longer planned for twenty-eight high school credits of which twenty-four credits were necessary for graduation. Students attended four years of high school for six periods per day, per semester, acquiring twenty-four credits, all of which were required for graduation. This left the college-bound and career-oriented student a course of study which did not include a plethora of options for elective studies such as technology-based education.

A second factor was that with available time minimized, it was relatively important for students to pursue technology education skills in the home or after the regular

school day. However, when students could not access technology, the inaccessibility in itself became a primary factor leading to minimal competency and skill levels. In surveying the sample student population (Appendix D), 30% had access to technology in the home, 5% had access to technology in the regular school setting through course integration, and 65% had no access to technology at home or at school during the course of a regular school day. Of these students only 15% had instructional opportunities provided with access to technology. Limited accessibility to technology outruled the opportunity for practice, and regular incorporation of technology as a tool into daily routines became impossible for students.

Also, in the district's high schools, technology education, technology training and practical application, and curriculum integration were not prerequisite to any academic course frameworks within the high school curriculum. Students were rarely introduced to technology integration in their regular academic courses, and that small percentage of technology exposure had proven to be theoretical in approach rather than approached as practical application and curriculum integration. Students did have access to technology within courses which prepared students for on-the-job and school to work transition programs, but

those courses were electives from which the college-bound academically talented were often excluded because of the specific course loads they pursued. The district and state do not require technology integration into the academic curriculum, nor is proof of student technological competence required upon college entrance. Therefore, high school students who chose to pursue college-bound curriculum frameworks were often excluded from courses which would enable them to become technologically proficient.

The last factor leading to student minimal technology competence was that, within the district's fifteen high schools, students did not receive technology training in media centers at their home schools. Often media specialists lack technological expertise and many media centers were not completely equipped with current technologies or automated environments. Budgetary constraints had hindered many high schools' purchasing power, thereby causing the media centers to be unequipped for library automation and/or unable to provide funds for technology training. However, where media centers were technologically well-equipped, media specialists often did not provide training for students who wished to access the automated library. The lack of available funding left media specialists ill-trained to perform highly technological

functions and unprepared to transfer knowledge and training to students in their educational pursuits. Budgetary constraints eliminated essential positions in media centers and the lack of expertise among those remaining media specialists who were accessible to students throughout the school day was minimal. Media specialists also had a number of tasks which they performed on a daily basis, and those tasks were primarily centered around providing teachers and administrators with equipment and resources necessary for regular daily activities and with resource preparation and equipment repair, thereby usurping time which may have been made available for technology experience and training for media specialists as well as for students.

Relationship of Literature to the Problem

Professionals support that student technology literacy is increasingly important for students to learn more successfully and to successfully enter the workforce after secondary education. As we transition into the 21st century, it becomes more and more important for students to be technologically literate. As the sample sponsors indicated, for the most part high schools students did not possess the skills which would enable them to be successful

in today's more global professional workplace. Boston, Chan, and Mukai (1991) view technology as the window to global connections. They also support the need for technological literacy in an increasingly global society, and purport that through technology school curricula is being adapted to reflect our ever-changing and interdependent world (Boston, et al., 1991).

As the role of technology takes on greater emphasis in the professional workforce, it becomes most imperative that students benefit from technology education in the classroom, or students will face post-secondary education and the professional workforce at a disadvantage. It is common for students to leave high school with minimal technological competency as current students are experiencing education's transition from teacher-based educational practices to a wide array of educational practices which mandate technology integration into all curricula so as to enable students to succeed in automated post-secondary situations and in the professional workforce. Herr (1985) asserts that "computers have inexorably redefined the content, the time spectrum, and the characteristics of the intervention strategies appropriate to influencing the career development of different groups of people" (p. 177). Thus, educators are faced with the enormous responsibility of preparing today's

high school students to be competent in higher education and within the professional environment.

Other researchers support the need for students to be technologically literate, and their concerns are in that of educator experience and ability to transfer technological knowledge. Hixson and Jones (1990) indicate that if technology will effectively be utilized to improve student performance, then teacher use and ultimate proficiency in instructional applications is imperative. Obviously, if educators are unprepared to successfully integrate technology into curriculum, then students will enter post-secondary education unprepared to navigate through automated systems, and they will, in effect, be less prepared for the professional environment and its dependence on technology. The Department of Education (DOE) National Curriculum Statement (1988) asserts that students must understand the origins, development and utilization of scientific notions and technology by individuals, organizations and cultures. If these concepts must be internalized at the post-secondary level rather than during the adolescent years, then students may not have a clear vision of the roles and opportunities available to them in their prospective career areas. It is only through early technology integration into curriculum that students will realize and understand the importance of

technological literacy in becoming resourceful and productive adults.

The DOE National Curriculum Statement (1988) indicates that students must have a scientific understanding of their biological, physical and technological worlds, and this information must not only make sense to them but it must also be useful and relevant. This directly addresses that students currently are not prepared to understand the interconnectivity of scientific notions and their application to real-world situations. For example, high school students who do not experience technology integration into the curriculum often are less able to create a global vision and to regard their existence within our society as anything beyond the immediate environment. Technological literacy allows students to reach beyond the immediate environment and to begin to form visions for the future. As students become global learners and understand their place in the micro and macro societal systems, they will inherently grow to understand the influence that science and technology have on lives, and they will only then begin to explore issues and make responsible decisions about technology and science utilization (DOE, 1988). Boston, Chan and Mukai (1991) state that technology has permeated our society to where every aspect of public, and

increasingly private life reveals its influence. However, as the particular district's college-bound high school students are often excluded from the benefits of technology competency skills, the student awareness level and limited educational experience will only hinder a smooth transition from high school to post-secondary education and then to the professional environment.

Many noted authors reveal specific causes for student technology literacy deficiency. Hixson and Jones (1990) state that without technology funding, teacher training for technology and curriculum integration, and technology training resources, technology education will continue to be less than satisfactory. Therefore, high school students who do not have technology opportunities within the school day or at home seriously suffer when required to rely upon technology and, later, automated systems in post-secondary education as well as in the professional workforce. Studies indicate that approximately half of the nation's teachers use computers and that even fewer use computers as regular tools (Shermis, Quintana, & Estes, 1990), and when deprived of opportunities for practice and internalization of the processes involved in technological literacy, students will become products of their environments and will be only as literate as the educational setting and resources allow.

However, future secondary students will reap the benefits from that which currently causes technological illiteracy. Shermis, Quintana, and Estes (1990) assert that teacher exposure to technology and curriculum integration will foster more openness to technology and curriculum integration. Shermis, et al. (1990) also state that as more adequate and frequent training and continued support services become available, teachers will be more prepared for emerging technologies and application to the educational setting. And students will be the benefactors of this thrust. Researchers address this issue often and their areas of topical concern are broad. Vasu (1989) indicates that computers are becoming important elements in many career fields. This supports the increasing importance placed on technological literacy in the secondary education classroom. Students must be prepared to succeed in the world of technology as technology is quickly permeating each facet of the world's educational and professional markets. Herr (1985) finds that computer-generated information serves as a power-base for decision-making, and that through this knowledge empowerment, the learners steadily gain control over how they will participate in education, training, and work. And, for today's college-bound students, becoming competent and productive members of society entails basic

technological literacy as a basis for later successful integration into the adult world. In environmental education, for example, Robottom (1987) asserts that with the increasingly complex array of knowledge that technology provides, individuals and corporation are able to systematically organize and control access to knowledge-bases so as to add power to their operations. Society must acknowledge and address the importance of exposure to technology in education so that we are able to empower today's high school students to become high-level thinkers within post-secondary institutions and later as productive, insightful, and knowledgeable members of the professional community. The professional-level of technology illiteracy which abounds in this district's secondary educational system causes students, such as those in the sample group who may otherwise thrive in an integrated environment, left to pursue technology literacy in an unguided and informal atmosphere where they may be unable to reach a high-level of technological competency.

CHAPTER III

ANTICIPATED OUTCOMES AND EVALUATION INSTRUMENTS

Goals and Expectations

The author's goals in conducting an introduction to the world of technology were to better prepare students for successful entry into post-secondary education and for successful entry into the professional workforce. The author familiarized 20 students with the basic uses of technology as a regular tool in the educational and professional environments and involved those students in the basic processes involved therein. It was the author's ultimate goal to enable the 20 college-bound high school students to not only utilize technology as a common tool, but also to enable the students to understand the global implications that surround technology when utilized as a normal and integral component in daily educational and professional practices.

Expected Outcomes

The author projected that, at the conclusion of the implementation period, 90% of the 20 internship students would become competent in the following minimal technology literacy skills:

1. word processing skills
2. data base entry and manipulation
3. spreadsheet entry and manipulation
4. desktop publishing
5. graphic development and manipulation
6. audio-visual recording and manipulation

The author intended to evaluate student progress and concept mastery with a variety of measures. All 20 students were to develop and present a portfolio which exhibited all technology products developed during the course. Upon completion of instruction in the listed technology skill areas, students were to complete pen and paper post tests which objectively measured knowledge of technology terms and applications. Student would then complete a comprehensive media center assignment to be completed in an assigned post-secondary automated media center. And, students would exhibit technology skills at the professional internship site as measured through sponsor feedback on student

performance profiles.

Measurement of Outcomes

The author would find the implementation project successful when each of four criteria were met. First, each of the 20 students would orally present a completed portfolio of technology products which demonstrated mastery of the covered applications as related to their professional internship experiences. Portfolio presentations would be judged objectively utilizing a portfolio presentation checklist that indicated comprehensive coverage of each technology product and the overall relationship to professional development (Appendix E). Eighty percent of the 20 internship students were expected to master at least 90% of the portfolio presentation guidelines and grading criteria in order to be considered successful in the portfolio presentation. Next, students were expected to achieve 70% or higher on part one of the Technology Utilization Posttest (Appendix F). On part two of the Technology Utilization Posttest, which encompassed and elaborated upon the skills presented on the Student Technology Pretest (Appendix B), all 20 internship students were expected to increase their level of performance a

minimum of 25%. Third, all 20 internship students were to complete a research assignment in the automated post-secondary media center (Appendix C), and each were expected to achieve a minimum score of 80% on the assignment. And finally, students were expected to receive a mean score of 3.0 or higher from the professional sponsors at the internship sites as indicated on a Professional Development/Technology Utilization Performance Profile (Appendix G). The four criteria were to be combined to determine the overall effectiveness of technology integration into the professional development curriculum and to determine student achievement grades.

CHAPTER IV

SOLUTION STRATEGY

Discussion and Evaluation of Solutions

College-bound high school students who pursue stringent secondary education programs often do not have the opportunity to participate in technology literacy elective courses and therefore, do not possess the technology skills necessary for success in post-secondary education or for the professional work force. Literature suggests that technology education is imperative to student success in high school as well as in the 21st century workforce. Authorities agree that in order to better technologically prepare students for the future, teachers must enthusiastically accept technology and all that it encompasses for implementation in the classroom. Research indicates that technology in the classroom enhances education, but unlike their effect in business, classroom integrated technologies increase rather than decrease teachers' workloads (Peck and Dorricott, 1994) and often educators encounter a great deal of stress when taking the

risks involved in applying knowledge and theory to practice (Wasserman, 1994).

The transition from teacher-oriented instruction to applied curriculum entails a paradigm shift which many educators are not yet willing to face. Curtailing resistance to technology integration into the classroom requires that educators have a proper introduction to educational technology, time available for training and planning and the reality that technologies will be available for instructional purposes. Shao, Carey and Ehrlich (1989) assert that very few public school teachers have had even 10 hours of technology training, and that even that time is often spent learning to use the machine, rather than in learning to apply technology to the educational setting. Without available time for educator training, the transition to technology-based educational practices may be viewed as inconvenient and for the most part unnecessary thereby promoting a lack of exposure to technology. Means and Olson (1994) indicate that technology does not make the teacher's life simple in that the content and applications can never be totally mastered. Integrating technology into the classroom requires teachers who have multiple skills, and those who can rise to inherently challenging, ever-evolving, and open-ended curriculum (Means and Olson, 1994).

Therefore, so as to provide students with the technological proficiency and cognitive skills that will enable them to succeed after secondary education, a profound shift in thought and practice must occur in the classroom.

Technology education must become integral to the educational environment so that students will be prepared for the future; however, many educators are not prepared to face the profound shifts involved in taking on a more challenging mode of educational delivery, and then resistance often occurs. Peck and Dorricott (1994) state that many teachers rarely utilize their classroom technologies and that teachers often feel that money might have been better spent on instructional materials that are not technology based. When educators are not willing to transition from outmoded educational practices into integrated curriculum, then it is inevitable that students may be unprepared for the technology they will face in post-secondary education and in the workforce. The solution is no easy one, but the challenge to encourage educators to realize the empowerment of technology in the classroom is one that must not go unaddressed. Dwyer (1994) recognizes this dilemma, and states, "our teacher development challenge, then, includes helping to build a teacher force aware of, and eager for, change - a teacher force that is

fleet on mind and steady in heart and rededicated to helping all children find success in their world" (p. 10).

If educators are introduced to the instructional and learning advantages of technology integration into curriculum, then more educators may be willing to participate in technology practices and seek the funding for technology in the classroom both for personal benefit and for the benefit of the students. As cited in Kozma and Johnston (1991), Harvard President Derek Bok "speculates that at the very least, new technologies can engage students in a more active process of thinking and problem solving, and at best they may help us develop new insights into human cognition and new ways of helping students learn" (p.19). Utilizing technology in the classroom clearly enables students to reach beyond average educational practices and to reach their learning potential. Technology integration into curriculum also enables educators to more clearly understand the learning process and investigate the tools and techniques available (Peck and Dorricott, 1994) so as to develop the most effective strategies for serving the students. Then, educators inherently become not only more competent and versatile, but more futuristic in their approach to learning and delivery models.

Nickerson's (1988) research reveals that when teachers

do not connect curriculum to students' everyday lives and previous learning, then that often becomes a major impediment to learning. Businesses seek educated and technologically competent individuals for the workplace; however, educational practices often do not provide the foundation for success in everyday life and for future learning and living. Moffett (1994) asserts that a good educational system should serve business, "but the higher-order thinking abilities and creative problem solving that it correctly believes graduates must now bring to the work force are precisely what have suffered most from testing, standardizing, and centralizing...." (p. 586). However, students who are provided with technology resources and support in the classroom will inherently learn to reach beyond the classroom and to apply their knowledge to the community in which they live and work. Technology enables students to exceed the limitations of the traditional classroom by providing them with: authentic, relevant and challenging tasks; practice in advanced skills; heterogeneous, collaborative group activities; blocks of time which more realistically parallel that of the work force; and a teacher who acts as coach by providing structure and actively supporting students' performances and reflections (Means & Olson, 1994). Successful technology

integration into the curriculum will provide all students with the skills necessary for success. Herr (1985) recognizes technology as:

> "'mind multipliers', as a way of compounding an individual's vision about possible futures in which s/he can engage, the pathways to futures, and the risks or investments associated with different career behaviors....the computer has been conceptualized as a prothesis [sic], a replacement for a specific individual's disabilities or limitations which enhances mobility, communications, or problem-solving and, therefore, expands individual limits on career development" (p. 176).

Description of Selected Solution

As a result of reviewing the literature, this author views technological literacy as essential to student success and preparedness for the 21st century workforce and that can only be accomplished through technological integration into today's classrooms. This author designed a technology integrated professional development curriculum to enable college-bound professional internship students to develop

necessary skills and to succeed in the professional internship environment and later in post-secondary education and the professional workforce. Students must experience applied and relevant curriculum so that they will fully utilize their skills and apply those skills to appropriate professional settings, and they must be able to fully utilize automated media centers so as to integrate personally and successfully into our global and technological world.

The author took many steps to provide professional development and technological literacy to students. The author developed a technology integrated professional development curriculum designed to enable students to become technologically proficient and able to transfer that knowledge to the post-secondary and professional environment. The author trained students to utilize word processing as a regular communication tool and instructed students in spreadsheet manipulation as a means by which to visually relate levels of time and stress management. The author provided students with exercises intended to enable them to master desktop publishing skills with graphic presentation, and the author provided students with opportunities to develop multimedia, audio and/or video presentations.

Report of Action Taken

At the beginning of the semester, students met for one week. Students then attended weekly seminars for ten weeks, five of which were lecture-oriented and five of which were technology-oriented. During the lecture-oriented seminars, students were presented relevant professional development skills and information and the group discussed any concerns, problems, suggestions or personal successes encountered in skills or technical development. During the technology-oriented seminars, students applied professional development learning to technology. Also, individual student conferences were scheduled periodically with the author so as to discuss internship experiences, areas of professional development, and technology-based instruction. The individual conferences enabled students to document successes and difficulties and to directly and personally address these areas or concerns with the author. Throughout the implementation period, the author maintained phone and visitation contact with the professional community sponsors.

Prior to beginning the new school year, a personnel shortage occurred within the internship program. While seeking a fourth coordinator position, one of the three coordinators transferred to another position and left two

coordinators to place students at professional worksites, developing curriculum appropriate to a third and fourth teaching load, and recreating orientation calendars. Although the opening was time consuming, the author found that the required reorganization proved beneficial to a successful educational and practicum implementation plan.

The semester began with students having no obligation to the internship program on the opening day of school so as to ensure that if student schedules were incorrect there was time available for schedule correction. On the first meeting day, the coordinator held an orientation meeting for students where all expectations and assignments were explained. On the following day a guest speaker was invited to talk to the students about resume' writing techniques. The week proceeded as anticipated; however, due to the program personnel shortage, many modifications were necessary for the following week.

The second week of orientation was to begin with students meeting in a technology lab so as to develop resumes and cover letters. Because the personnel shortage required the author to conduct other district orientation meetings, the technology meeting was canceled and students completed resumes and cover letters individually as an out-of-school assignment. The first hour of the second day

consisted of financial aid for post-secondary education as delivered by a guest speaker. The author facilitated. The second hour content was interview techniques as instructed by the author.

During the third and fourth orientation days students were to be given appointments for mock interviews with professionals from the school administration and professional communities. These interviews were to be video taped for the students' personal critiquing; however, the author modified the initial intent and sought five student volunteers to participate in role playing mock interviews (Appendix H). The interviews were conducted by two professionals from the school administration who were unaware of the roles the five students were playing and students were evaluated by the professionals utilizing various interview questions and an interview evaluation tool (Appendix I). The five interviews would be video taped by the author and shown to the class for critiquing. On the final orientation day during week two, students met at the lecture hall and the large group viewed the volunteers' interviews and assessed each interview utilizing an interview critique sheet (Appendix J).

The modifications that were necessary during the orientation period proved to be very successful and

worthwhile. Students completed resumes and cover letters with a sense of satisfaction and responsibility. It was initially intended that the author would edit or assist in revising resumes and cover letters; however, the author instead had students present resumes and cover letters to sponsors during the interviews and had the two pieces signed by sponsors and returned to the author. This enabled the students to take a first step in professional responsibility insofar as they were presenting documents in which there could be no room for error. When professionals receive resumes and cover letters the expectation is that there will be no errors, and, therefore, students were placed in the important position of presenting themselves precisely and without error to the professional world. Also, because students were given additional time to prepare for their subsequent interviews with professional sponsors, they were more willing to seriously assess others' interviews and were very open to both positive and negative qualities that they discerned from the taped interviews. From this experience, the author realizes that having video-taped an interview for every student would have been not only exhaustive to the author and to the interviewers, but also monotonous to a point of ineffectiveness to the students. Throughout the third week, students attended scheduled interview

appointments with prospective sponsors from the professional community. Students began their internships and reported to the internship sites throughout the fourth week.

The fifth week began the seminar cycle. The topic for the first professional development seminar was time management and stress management. The seminar consisted of various activities which were intended to demonstrate and reinforce the importance of learning time and stress management techniques. Students were given a stress management log which required collecting daily data as to stress levels. Students were also required to document their activities for 24 hours per day for one week. At the conclusion of the seminar, the author explained a semester assignment wherein students would collect 100 vocabulary words particular to their career field. This assignment was to be due at the first meeting of week eighteen. Students were reminded that all assignments, daily logs, and projects would become a part of their personal portfolios. The seminar was informative and students responded to the idea of monitoring their time over a week period.

At the second seminar, during the sixth week, students met at the technology lab. Students were given a brief overview of the computer hardware components and of the software, and then were given an in depth tour of the word

processing and spreadsheet applications. Then the author distributed spreadsheet/chart instructions (Appendix K) describing how to open a new spread sheet file and how to create a spread sheet utilizing the data from the time management exercise. The instruction sheet concluded as students created graphs and charts from the data they collected over the week. Then, to discover the effectiveness of verbal instructions as opposed to written instructions, the author verbally instructed the students in creating a new word processing file and in copying the time management chart into the word processing file. In the word processing document, each student prepared a personal reaction narrative summary of their time management techniques as realized by the graphs and charts and the subsequent relationship that time management has to stress. The summaries were successfully completed utilizing word processing and the charts were incorporated into the word processing document (Appendix L).

The author found the initial technology seminar quite interesting. Students had a great deal of questions when following written instructions; however, they responded more readily to verbal instructions and seemed to learn more about the computers and functions through a more relaxed environment where discussion and listening led to many

varied questions and explanations. Students began to thrive in the environment and began assisting one another in working through the necessary processes which led to a final product. Students stayed long after the seminar was dismissed, and many students stated that they were pleased with the progress they had made during the first technology seminar.

It was necessary to change the seminar activity schedule so that week nine and ten activities were introduced and completed during weeks seven and eight. Week seven began with an overview of the importance of utilizing post-secondary media centers and career centers while in post-secondary education. The students attended a one hour media center orientation; however, the author was unable to schedule an orientation to the junior college career center. Because the author was aware that there would be no orientation to the career center, the author had spent time with the media specialist three weeks prior to the orientation, and, therefore, the orientation centered specifically on the content requested by the author. The coordinator facilitated with the media center orientation. The media center research assignment (Appendix C) was distributed and students were given the eighth week during the technology seminar time and two additional weeks in

which to complete the assignment individually. Because students were experiencing individual time difficulties, the author allowed the students to determine a reasonable time limit for the assignment completion; the assignment was determined to be due five weeks after the initial orientation.

The ninth week began with a lecture seminar in which students shared in autobiographical activities that were intended to enable them to understand where they had been in life and who and where they were currently in life, so that they would begin to understand how they had developed over the years and to form a more definite direction for the future. The author believes that it is imperative that students take a realistic look at the journey that they have traveled thus far in life so that they will be realistic in their expectations for the future. Students were given an autobiographical worksheet which they were required to complete for the next seminar. The worksheet included an activity where students would draw three pictures: one representing the past, one representing the present, and one representing the future. At the tenth week technology seminar, utilizing desktop publishing software, students created a personal newsletter which gave a self-introduction to "the world". Students utilized draw and/or paint

software application to draw the three pictures for importing into the newsletter.

This activity not only covered a pertinent area to students career development, but it also reinforced the activities learned at previous technology seminars. Students developed a word processing document and imported drawings into the document, and they alsc learned how to create a page layout for a desktop publishing document. The instructions were again given verbally and the author found that students asked fewer questions about how to develop the page. The students again remained after class to complete the project and were pleased upon successful completion of the autobiographical newsletter.

During week eleven, students worked independently on the media center research assignment. The author staffed the technology lab so that students had access to technology to complete their assignments; however, students were not required to attend the technology lab. The author found it interesting that all of the students attended the technology seminar for extra assistance on their projects. Students seemed to feel more at ease when they had the opportunity for individual assistance.

During the twelfth week, students received a Job Study assignment wherein they interviewed the professional holding

the position to wnich they aspired so as to get an in-depth view of the job itself. The interview was initially to be audio or video recorded for integration into a multimedia presentation; however, the author felt that students had worked very hard learning the new technology skills throughout the semester and that they had not had time to internalize their learning. Therefore, the author assigned the Job Study as a checklist of the job qualities with a narrative summary of "a day in the life" of the professional position, not the professional. The remainder of the seminar was designed to center upon structured internship and technology utilization reflective activities where students were asked to "play" with the word processing and drawing applications and to develop a reflective piece that describes what value the internship and technology experiences meant individually to them. This activity continued throughout week thirteen and then students shared their reflective pieces with the class.

The fourteenth week began with an orientation to portfolio and final project presentations which would take place during the last two weeks of the semester. Students utilized the remaining time for asking questions, for completing any technology-based additions that they desired as part of the portfolio, and for assistance with ideas for

the final presentation. The technology post-test (Appendix F) was administered to indicate student technology understanding and personal technology utilization skills and growth. The fifteenth and sixteenth weeks were conducted in a similar fashion to week eleven, with a great deal of individual assistance and with planning for the final presentation.

During the seventeenth week students were given one hour to complete a newsbrief (Appendix M) and graphic for an internship student newsletter. The format was supplied to students, and at the end of the hour, all student desktop publishing files were copied to the author's disk for incorporation into the program's first student-developed newsletter. The remaining seminar time was spent in planning and developing final presentations.

Data collation and the results and discussion of this project will follow in chapter five of this final report.

CHAPTER V

RESULTS, DISCUSSION AND RECOMMENDATIONS

Results

College-bound high school internship students who pursued stringent secondary education programs often did not have the opportunity to participate in technology literacy elective courses and therefore, did not possess the technology skills necessary for success in post-secondary education or for the professional work force. As result of this, the author designed and conducted an introduction to the world of technology to better prepare internship students for successful entry into post-secondary education and for successful entry into the professional workforce. The author familiarized students with the basic uses of technology as a regular tool in the educational and professional environments and involved those students in the basic processes involved therein. It was the author's ultimate goal to enable the internship students to not only utilize technology as a common tool, but also to enable the

students to understand the global implications that surround technology when utilized as a normal and integral component in daily educational and professional practices.

The author projected that, at the conclusion of the implementation period, 90% of the 20 internship students would become competent in the following minimal technology literacy skills:

1. word processing skills
2. data base entry and manipulation
3. spreadsheet entry and manipulation
4. desktop publishing
5. graphic development and manipulation
6. audio-visual recording and manipulation

Student technology activities were graded on a 4-point scale, with 4 being the highest grade. The expected outcome for word processing competency was achieved through student completion of various word processing activities with the average activity grade being 3.6. Students were not introduced to data base entry and manipulation skills as time did not allow for additional instruction in that area, nor was data base entry and manipulation determined to be relevant to the professional development curriculum being taught. Therefore, that outcome was not achieved. The 20 internship students achieved an average grade of 3.9 in the

area of spreadsheet entry, development and manipulation skills and achieved an average grade of 3.6 on the desktop publishing activity. Graphic development and manipulation activities enabled all 20 students to achieve an average grade of 3.85. The audio/visual recording and manipulation skill development outcome was not achieved as neither audio/video recording and manipulation nor multimedia applications were utilized throughout the implementation period. The author found that 100% of the students became competent in the minimal technology literacy skills.

The author would find the overall implementation project successful when the following additional four criteria were met. For all of the following activities, 100% of the students completed all activities.

First, each of the 20 students would orally present a completed portfolio of technology products which demonstrated mastery of the covered applications as related to their professional internship experiences. Eighty percent of the 20 internship students were expected to master at least 90% of the portfolio presentation guidelines and grading criteria (Appendix E) in order to be considered successful in the portfolio presentation. This outcome was not completely achieved. Students did develop complete portfolios, and they did present the portfolios to the

author, but they did not complete oral presentations to the class. One hundred percent of the students satisfactorily completed portfolios and individually presented portfolios to the author with an average achievement rate of 94% on a 100-point scale. During the presentation period, the author became ill and it was necessary for one of the new coordinators to observe and grade the presentations. Therefore, the author modified the final presentations and portfolio presentations format to include only a brief culminating experience presentation as the substitute coordinator was not familiar with portfolio presentation guidelines and procedures.

The second expected outcome was that students were expected to achieve 70% or higher on part one of the Technology Utilization Posttest (Appendix F). On part two of the Technology Utilization Posttest, which included and elaborated upon the skills presented on the Student Technology Pretest (Appendix B), all 20 internship students were expected to increase their level of performance a minimum of 25%. Part one of the Technology Utilization Posttest resulted in students scoring an average of 66% on a 100-point scale, and therefore, this outcome was not achieved. Although the average student score was very close to the projected outcome, 13 of the 20 students scored below

70% and 7 of the 20 students scored 70% or higher on part one.

Part Two of the Technology Utilization Posttest revealed that students perceived themselves as much more technologically competent than indicated on the Technology Utilization Pretest before technology instruction. The expected outcome that students would increase their overall level of performance a minimum of 25% was achieved. The Technology Utilization Pretest was modified by adding two additional competency areas: graphic integration into other applications and utilizing audio/visual components. The ten item posttest, composed of a one through five (1-5) scale with five (5) indicating a high level of technological competence or ability and one (1) indicating a low level of technological competence or ability, was administered to the 20 internship program students and mean ratings and increase percentages were determined. The mean rating for identifying the physical components of a microcomputer increased 24% to a 3.6 mean. For utilizing Disk Operating System (DOS) commands, the mean rating was 3.15, a 29% increase. When indicating student understanding of the difference between system and application software, results revealed a mean rating of 2.8, an increase of 33%, and when surveyed as to Computer Assisted Instruction (CAI)

utilization and interaction, results indicated a 3.4 mean rating, an increase of 38%. The survey indicated a 3.45 mean for word processing utilization, an increase of 20%, and for electronic spreadsheet utilization, a 3.3 mean rating indicated a 36% increase in competency. Results indicated a 2.65 mean rating for creating and managing a data base document, and although students were not instructed in data base utilization, the mean reveals an increase of 34%. The overall competency and ability mean rating for effectively operating a microcomputer, performing steps in input, processing, output, and storage was 3.25, an increase of 35%. The ninth item regarding integrating graphics into other application packages revealed a mean rating of 3.65, or a moderately high level of competence. Although students were not instructed in utilizing audio/visual components, they rated themselves with a mean of 2.45 which is moderate to moderately low competence and ability. The overall increase in student competency averaged 31% which indicates that the overall expected outcome was achieved, although the word processing skills and identifying the physical components of microcomputer systems were below the expected 25% increase in ability.

The third expected outcome was that all 20 internship students would complete a research assignment in the

automated post-secondary media center (Appendix C), and each were expected to achieve a minimum score of 80% on the assignment. This outcome was not achieved as was expected. Eighty-percent, or 16 of the 20 students scored an average grade of 82% on the assignment and 20%, or 4 of the 20 students received an average grade of 59%. However, 100% of the students completed the assignment and 90%, or 18 of the 20 students, conveyed having positive experiences and that they realized the relevancy and educational value that this experience provided.

Last, students were expected to receive a mean score of 3.0 or higher from the professional sponsors at the internship sites as indicated on a Professional Development/Technology Utilization Performance Profile (Appendix G). Professional sponsors were asked to rate the students at two intervals throughout the implementation period, and therefore, 40 performance profiles were used to calculate the mean. Forty-percent of the professionals indicated that technology utilization at the professional internship site was not applicable, and the remaining 60% of the sponsors indicated a mean rating of 3.5 for technology utilization and competency in the professional setting. This expected outcome was achieved.

The four criteria and the achievement of the minimal

technology literacy skills were then combined to determine the overall effectiveness of technology integration into the professional development curriculum. The implementation results indicated that the overall project implementation was successful and most expected outcomes were achieved, although students did not achieve expected increases in every area addressed.

Discussion

The practicum project implementation was subject to many modifications as noted in Chapter Four and will be subject to many more evaluations for continued implementation. However, the author believes that the modifications made the educational plan stronger and more relevant and applicable to student learning. The author also finds that although not every expected outcome was achieved, the practicum implementation was very successful.

The author perceives the orientation interview activity modification as important to creating a more interesting and relevant opening activity. The students critiqued 5 rather than 20 interviews and had a greater sense of appropriate and inappropriate interviewing techniques while remaining interested and actively engaged throughout the entire

process. The author believes that if 20 interviews were critiqued, the activity would have become tedious and exhaustive for all involved in the process.

Another successful modification to the original plan was to cancel multimedia application software instruction. The author discerned that the students had worked hard to learn and utilize a great deal of technological information in a short period of time. Therefore, students were allotted time for practice and reflection activities with the educational intent to enable them to internalize and master newly learned technology skills and to master the skills and concepts as related to professional development. The modification provided not only reinforcement and reflection, but also relevant and on-going experiences for the students.

The author believes that by enabling students to internalize the computer applications that were taught throughout the semester without introducing a new software package as was initially intended, students were more able to internalize the knowledge that they had acquired and were able to utilize the software without hesitation or difficulty. The author realized that if a new software package had been introduced, students would not have had the time or, perhaps, the motivation to complete the required

projects. The author also believes that introducing complicated new material with such little time remaining in the semester would have been overwhelming to students thereby negating the positive progress and attitudes that had been developed throughout the semester. The author found that by offering individual assistance and an opportunity for "play" that students were much more positive about their culminating activities and with their reflective exercises.

The necessary portfolio project modifications directly impacted the expected outcome. The author believes that the students were well-prepared for the portfolio presentations and that they would have achieved the expected outcomes as anticipated. However, with the author unavailable for the presentations, it was only feasible for the substitute coordinator to observe and grade culminating experience presentations. The author found that students were well-prepared for the portfolio presentations and that they were eager to display and explain their technological accomplishments as well as their accomplishments in the professional setting. Nonetheless, the author is content with the modifications to the final presentation format.

Also, upon review of the Portfolio Presentation Guidelines and Presentation Criteria (Appendix E) the author

found the instrument too involved for the average presentation time allotment, or perhaps for those new to portfolio grading. The author found that the instrument would not allow for the user to give enough attention to the presenter and would ultimately be distracting rather than helpful. The author will revise the instrument, making it brief and easier to utilize during presentations, but will continue to utilize the same instrument as a student guide to presentations.

Prior to the project implementation the students did not have a great deal of access to technology and that inaccessibility was a primary factor leading to minimal competency and skill levels. Thirty percent of the students had access to technology in the home, 5% had access to technology in the regular school setting through course integration, and 65% had no access to technology at home or at school during the course of a regular school day. Of these students only 15% had instructional opportunities provided with access to technology. However, throughout the implementation period 100% of the students had weekly access to technology. By providing students with weekly opportunities for technology utilization and by introducing students to automated on-line research, students are more able to conceptualize the importance of technology as a

workplace tool, and they gain a greater understanding of the technology's global implications. Regular technology utilization enabled the students to reach beyond the immediate environment and to realize the personal and public influences that technology brings to our society (Boston, Chan & Mukai, 1991).

Although the expected outcome that students would score a minimum of 70% on the Technology Utilization Posttest Part One was not achieved, the author is confident that the overall class average of 66% indicates a great deal of learning and improvement. The students had, for the most part, no prior knowledge of or experience with technological terms, concepts and applications. Therefore, the author finds that the average score noted does indicate that learning occurred, although it may not appropriately indicate the extent of the learning in relation to the classroom atmosphere and expectations. The informal atmosphere and activities stressed hands-on learning processes and procedures rather than learning specific formal terms and concepts, and the evaluation should, therefore, be more appropriate to practical and hands-on learning activities. The author did not stress formal memorization of terms and concepts, but did stress utilization and learning through doing, and therefore, the

author views the Technology Utilization Posttest Part One as irrelevant in assessing the learning that occurred in the given environment. If the same informal class setting is again emphasized, the author will create evaluation instruments more relevant to the learning occurring.

The Technology Utilization Posttest Part Two results reveal an increase in both technology understanding and technology utilization confidence levels. Of the eight items that were included on the pretest and compared to the posttest, students ranked their competence and performance levels as greatly increased from between 29% and 38%. The areas which fell below the 25% expected increase were identifying the physical components of a microcomputer system, rated at a 24% increase, and utilizing a word processing application package, rated at 20%. The author is confident that the 24% increase for identifying physical components reveals that a great deal of learning had occurred. On the other hand, the author is concerned that the 20% increase rating in utilizing a word processing package is misleading. The word processing package was utilized more often than other applications throughout the implementation, and the author believes that either the 20% increase indicates a reinforcement of a skill already obtained, or that on the Pretest, students inadvertently

overrated their competency and ability levels because of the commonality of or a familiarity with the concept of word processing. An interesting finding from the Posttest was the area of creating and managing data base documents. Students were not instructed in this area; however, they rated their competence and ability level as having increased 34%. The author discerns that either students did not fully understand the data base concept and purpose, or that this reveals a perceived confidence increase in overall technology competency and ability levels. Students proved much more self-confident and competent in completing tasks individually, and therefore, the author finds the latter explanation quite feasible. The ninth item concerning graphic integration had a mean rating of 3.65 which was expected by the author as students worked often with graphic integration into word processing documents. The mean rating for the tenth item regarding utilizing audio/visual components was 2.45, or moderately low in competency and ability level; this low rating was expected as no prior instruction had occurred in that area. The author views these overall increases in perceived competency and ability levels as being derived from both regular hands-on skill building and from increased confidence levels that develop from regular technology access and practice.

The media center orientation and assignment were received well by students; however, students felt overwhelmed once they began to experience on-line research. The assignment was due three weeks after the media center orientation, but because students were having individual time difficulties, the author allowed the students to determine a reasonable time limit for the assignment completion. The assignment was then due five weeks after the initial orientation. Student personal evaluations indicated that the assignment was difficult, but they also revealed that it gave them the opportunity to experience college research and to gain the skills that they would need in post-secondary education. The overall project completion was very successful, and the author believes that its success had lain in part due to the flexibility that was built into the time structure, but primarily in that the students were engaged in the decision-making process and therefore had ownership in the timeline. The author had determined earlier that if students expressed frustration or the need for more time that they would be granted extensions as needed so that the project would be completed by all students. The media center research assignment will become a regular component in the professional development curriculum. The author contends that the media center

research assignment will better prepare students to succeed in post-secondary education as they will have gained the valuable research experience that post-secondary education requires.

That only 60% of the professional internship sponsors indicated that technology utilization occurred during the internship experience is quite interesting to the author. Initially, a survey of sponsors indicated that there was a specific need for students to be better prepared for workplace challenges and these challenges required a strong technology background. However, when completing student performance profiles, 40% of the sponsors indicated that technology utilization was not applicable to the students' internship experience. The author views this as stemming from one of three areas. First, it is possible that sponsors have had a change in duties which, in effect, changes interns' duties in particular internship settings. It is also possible that sponsors view technology skills as important to overall professional skill development, although those skills do not necessarily relate to that particular setting. Or finally, it is possible that internship students are not being utilized at the internship sites as is expected by the internship program. This area will be carefully reviewed.

The author finds that the project implementation was effective and successful. Students learned a great deal about technology utilization and indicated that they felt more confident and more prepared to utilize technologies in post-secondary education and the professional workforce. The internship program's intent is to prepare students for future professions by enabling them to make educated career decisions, and to gain firsthand experience in the professional environment. The opportunity to experience curriculum and technology integration enabled students to receive a broader view of the workplace and of the skills necessary to succeed in the professional workplace.

Integrating technology requires a great deal of planning and preparation on behalf of the instructor; however, the benefits of preparing students to become more global learners far outweigh the preparation time. By integrating technology into any curriculum, students inherently become more skilled and prepared for the demands and challenges that they will encounter as they pursue post-secondary education and their future professions. The author's primary concern is to familiarize students with technology as a tool and to build a comfort level that will enable them to function readily and skillfully in any environment. Technologically prepared students enter into

post-secondary education prepared to navigate through automated systems, and, in effect, prepared for the global professional environment and its growing dependence on technology.

Recommendations

In concluding this project implementation, the author finds that basic recommendations improve upon technology integration into curriculum projects. The recommendations are as follows:

1. Plan activities to enhance curriculum by utilizing technology as a tool.
2. Do not focus upon the technology as the content; technology in and of itself should be viewed as a tool by which the purpose is achieved.
3. Plan adequate time for practice and internalization of acquired skills. Reinforce acquired skills by planning curriculum activities that require similar skills but that also build upon prior technological skills.
4. Encourage and allow time for reflection

as students are learning both the curriculum content and technology skills.

5. Be flexible with time frames as the focus is enabling students to become technologically proficient while mastering curriculum content.
6. Expect students to become frustrated, but empower them by including them in decision-making processes, such as with project due dates.
7. Make the technology instruction as simplistic as possible as, again, the curriculum content mastery is the ultimate concern and goal.

The author plans to continue this project in future semesters with internship students. However, the author will modify the project in consideration of the implementation findings and will seek to make continuous quality improvements as future implementations reveal the need. The author will also re-assess the evaluation tools and surveys and modify them as is relevant.

The author is also designing a continuing course for internship students who participate during a second and

third semester. The continuing course addresses leadership development, telecommunications and mentoring. Internship students will mentor middle school students from South Carolina, and will do so via the Internet. This will provide the younger students the opportunity to learn about various career choices, and it will enable the senior high school students the opportunity to share leadership concepts with the middle school community and to share with them a realistic sense of their skills and motivations gained from on-site professional experience. Both groups will experience telecommunications and will be introduced to the global community that can be accessed via the Internet.

Dissemination

The author intends to disseminate the practicum results throughout the school district in hopes that others will take the initiative to develop technology integrated curriculum. The author has shared the development and implementation and will share the results with internship colleagues and within the district office. The author will train the other internship coordinators in implementing this new professional development curriculum throughout the next semester. The author will also share the results of the

project with various professionals who served as sponsors throughout the implementation period, and results will be provided for parents who wish to peruse the course content as completed by their children. The practicum implementation and continued progress reports have also been disseminated with the junior college from where the students receive dual-credit, and the author intends to assist the junior college in developing a technology integrated curriculum for other instructors in the field.

The author's peers have expressed enthusiasm about learning to integrate technology into the professional development and student leadership curricula, and it will be the author's pleasure to assist them in doing so. The author will continue to network with educators in other states with the hope that technology integration into curriculum will become an inherent component in educational practice.

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APPENDIX A

TECHNOLOGY UTILIZATION SPONSOR SURVEY

Technology Utilization Survey

Dear Sponsor,

This survey will enable the Executive Internship Program coordinators to better prepare students for their internship experiences in the professional workforce.

Please answer Section I utilizing the following scale:

1. Not Important
2. Fairly Important
3. Important
4. Critical
0. Not Applicable

I. To what extent should a high school student be competent in the following technologies?

A. Word Processing Data Entry Skills
B. Word Processing Document Development
C. Data Base Data Entry Skills
D. Data Base Manipulation
E. Spreadsheet Data Entry Skills
F. Spreadsheet Manipulation
G. Graphics Manipulation (Importing/Manipulating in documents)
H. Graphics Development (Illustration)
I. Desktop Publishing Data Entry Skills
J. Desktop Publishing Document Development
K. CAD/CAM
L. Software Development (Programming)
M. Operating System Understanding, Use and Manipulation
N. VCR Operation
O. Video Camera Operation
P. Audio Recording and Sound Blending
Q. Audio/Visual Presentations

II. To what extent is your organization seeking employees who already have knowledge of specific technologies? What are those areas of technology knowledge?

III. What entry-level technology skills are necessary for employment in your organization?

<Over>

IV. What technology experience, if any, does your organization prefer in a new employee?

V. Are you more apt to desire to train new employees in technology utilization? If so, in what areas of technology? Why?

VI. In your experience and observations as an internship sponsor, what percentage of past student interns have shown competency in technology utilization?

VII. Do you have technology training suggestions for high school interns who will enter your organization?

IIX. Do you have any further suggestions for preparing students for the professional internship experience?

APPENDIX B

STUDENT TECHNOLOGY PRETEST

EXECUTIVE INTERNSHIP PROGRAM
STUDENT TECHNOLOGY PRETEST

Name _____ Date _____

INSTRUCTIONS: Please circle the appropriate number to the right of the description to indicate your present level of competence or ability in each area listed below.

	High Level		Mod-erate		Low Level
1. Identifying the physical components (hardware) of a microcomputer system . . .	5	4	3	2	1
2. Utilizing proper DOS commands to interact with the computer.	5	4	3	2	1
3. Understanding the difference between Systems and Application software..	5	4	3	2	1
4. Utilizing and interacting with a Computer Assisted Instruction software package. . .	5	4	3	2	1
5. Creating and manipulating a Word Processing application package.	5	4	3	2	1
6. Creating and manipulating a Spreadsheet application package.	5	4	3	2	1
7. Creating and manipulating a Data Base application package.	5	4	3	2	1
8. Effectively operating a microcomputer, performing steps in input, processing, output and storage	5	4	3	2	1

APPENDIX C

MEDIA CENTER RESEARCH ASSIGNMENT

MEDIA CENTER RESEARCH ASSIGNMENT

This assignment is intended to allow you to research literature within your career field of choice while learning to utilize the automated features available at the junior college media center.

INSTRUCTIONS: Utilizing the junior college media center, complete the following assignment. You will have two hours during the seminar session to complete your research; however, the assignment is not due until the next seminar meeting (one week).

ASSIGNMENT/SCENARIO 1: You have been instructed by your sponsor at your professional internship organization to gather as much current information as possible about your career field and trends in the field. To accomplish this assignment you must utilize automated systems and gather bibliographical information. (Be sure to follow the bibliographic information sheet in your folders for the bibliography style.)

INFORMATION	AUTOMATED SYSTEM
3 Journal articles which explain current research/findings in your field	ERIC/LUIS database
2 Newspaper articles which report on your career field.	SP Times database NY Times database
2 books which relate to your career field	On-line card catalog
1 Audio cassette which is designed to assist professionals with personal or professional self-management techniques	On-line card catalog
1 Video cassette designed to assist professionals with personal or professional self-management techniques	On-line card catalog

ASSIGNMENT 2: Write a brief overview of each resource that you locate. When possible, run a copy of the abstract that you find on the computer or a copy of the newspaper article that you locate with the newspaper databases and that will serve as the overview. You must still provide a bibliography.

ASSIGNMENT 3: Briefly summarize your experience in utilizing the automated media center. (This must be typed and double-spaced, and the length must be at least 1-1/2 to 2 pages.)

APPENDIX D

TECHNOLOGY ACCESS/UTILIZATION SURVEY

TECHNOLOGY ACCESS/UTILIZATION SURVEY

Name _____ Date _____

Number of class periods enrolled in EIP _____

Number of class periods attended at the home school _____

INSTRUCTIONS: Please answer each question on the line provided.

1. Have you ever used a computer before? (Y or N) _____
2. Of the classes that you attend at your home school, how many use computers as a regular classroom tool for students? _____
3. For how many hours of your home school-based day would you estimate that you are able to utilize technology in your classes? _____
4. Do you have access to a computer in your home? _____
5. If so, how many hours per day do you have access to the home computer? _____
6. How many hours per week do you have access to the home computer? _____
7. What type of computer do you use the most? _____
8. Does your school have a computer lab that is available to all students? (Y or N) _____

APPENDIX E

PORTFOLIO PRESENTATION GUIDELINES AND GRADING CRITERIA

PORTFOLIO PRESENTATION GUIDELINES AND GRADING CRITERIA

In order to successfully bring the internship and professional development experiences to a culmination, each student will develop and maintain throughout the semester a portfolio which includes all assignments completed and daily logs. As a means of presentation, each student will create an electronic presentation portfolio which will be used for the final project presentation.

Also, as part of the final presentation, students will create a 7-9 minute presentation that shows some experience or highlight of the internship experience. This may be accomplished with slides, a video, a creative exhibition of an area of interest or an overview of the internship experience as revealed through one creative activity. Examples will be explained at the final project orientation.

HARD COPY CRITERIA: The "hard copy", or paper portfolio will include all documents that were created throughout the semester. This will include:

1. word processing documents
2. data base documents
3. spreadsheet documents
4. desktop publishing documents
5. graphics developed and integrated into documents
6. audio-visual recordings

ELECTRONIC PROJECT PRESENTATION CRITERIA: The electronic portfolio will include all documents created throughout the semester; however, the documents will be presented with a computer presentation application package and with the use of a projection panel for overhead projection. Each student will develop a creative and innovative electronic presentation which relates the high points of the internship experience and which relates the internship to the professional development seminars.

The electronic and final project presentation criteria is as follows:

DEGREE OF PREPARATION

1. Does the presenter exhibit subject knowledge?
2. Does the presenter exhibit that a great deal of preparation went into the presentation?

CONTENT

1. Is the presentation introduction clear and complete?

   A. Does the presenter give background information about the internship experience?
   B. Does the presenter indicate the main point of the presentation?

2. Is the focus of the presentation clear to the audience?

   A. Does the presenter develop a controlling focus for the presentation?
   B. Is the presentation clearly and logically organized?
   C. Does the presenter make smooth transitions between modes of thought and presentation modes?

3. Is the presentation conclusion clear and complete?

   A. Does the presenter smoothly transition from the body of the presentation to the conclusion?
   B. Is the conclusion a summary of the presentation and the major points of the presentation?
   C. Does the presenter leave adequate time for questions or for further summarization?

CLARITY OF INFORMATION

1. Is the presentation information clear and concise?
2. Is the use of jargon avoided?
3. Does the presenter use vocabulary appropriate to the audience? (ie., avoiding profession-specific vocabulary)
4. If profession-specific vocabulary is used, does the presenter clearly define terms?

PRESENTATION STYLE

1. Does the presenter use appropriate posture?
2. Does the presenter appear to be confident?
3. Does the presenter maintain eye contact with the audience?
4. Does the presenter use an appropriate audible level?
5. Is the presenter appropriately dressed for a professional presentation?

CREATIVITY

1. Has the presenter found a unique way to explain the internship experience?
2. Has the presenter involved the audience in the presentation?
3. If the audience is not involved, is there a clear sense of interest from the audience?
4. Has the presenter utilized equipment form the internship site?
5. If equipment is unavailable, has the presenter found ways to clearly convey internship activities and experiences?

PORTFOLIO RELATIONSHIP TO INTERNSHIP

1. Does the presenter relate each assignment to the internship experience?

    A. Are word processing assignments related to the internship experience?
    B. Are data base assignments related to the internship experience?
    C. Are spreadsheet assignments related to the internship experience?
    D. Are desktop publishing assignments related to the internship experience?
    E. Are graphics and graphic integration related to the internship experience?
    F. Are audio recordings related to the internship experience?
    G. Are video recordings related to the internship experience?

APPENDIX F

TECHNOLOGY UTILIZATION POSTTEST

TECHNOLOGY UTILIZATION POSTTEST

Name _____ Date _____

INSTRUCTIONS: In the spaces provided, indicate which letter from the items listed below that best completes each statement.

A. Word Processing Application
B. Data Base Application
C. Spreadsheet Application
D. Desktop Publishing Application
E. Multimedia Presentation Application
F. Graphic Application
G. Video Recording
H. Audio Recording
I. DOS/System software

1. If your sponsor required you to create a chart that indicated the net profits for the quarterly report, you would use: _____

2. If you were required to document a business presentation, the logical way to ensure that it is captured in its entirety would be to use: _____

3. If you needed to delete files from your hard drive, you would use: _____

4. If you were required to carefully document a roundtable discussion and then transcribe what was said, you would use: _____

5. If you needed to create an electronic presentation that included graphics, video, sound, and text, you would use: _____

6. If you needed to create charts or graphs for a presentation, two applications which would allow you to do so are: _____

7. If you were required to create a quarterly newsletter, with three columns of information on each page, you would use: _____

8. If you needed to create a newsletter with pictures, the two applications which you would use are: _____

9. If you wanted to include graphs or charts in a letter to customers, three applications you would use are: _____

10. If you were required to create a comprehensive listing of all clients so that address listings, address labels and other pertinent information is on file, you would use: _____

11. If you needed to copy files from one disk to another, you would use: _____

12. If you were required to draw pictures for a presentation, you would use: _____

13. If you were required to send letters to other businesses, you would create the letters using: _____

14. If you were required to create a presentation that integrated animation, you would use: _____

15. If you needed to put files into subdirectories or folders, you would use: _____

PART TWO INSTRUCTIONS: Please circle the appropriate number to the right of the description to indicate your present level of competence or ability in each area listed below.

	High Level		Mod-erate		Low Level
1. Identifying the physical components (hardware) of a microcomputer system . . .	5	4	3	2	1
2. Utilizing proper DOS commands to interact with the computer.	5	4	3	2	1
3. Understanding the difference between Systems and Application software..	5	4	3	2	1
4. Utilizing and interacting with a Computer Assisted Instruction software package. . .	5	4	3	2	1
5. Creating and manipulating a Word Processing application package.	5	4	3	2	1
6. Creating and manipulating a Spreadsheet application package.	5	4	3	2	1
7. Creating and manipulating a Data Base application package.	5	4	3	2	1
8. Effectively operating a microcomputer, performing steps in input, processing, output and storage	5	4	3	2	1
9. Integrating graphics into other application packages	5	4	3	2	1
10. Utilizing audio/visual components.	5	4	3	2	1

APPENDIX G

PROFESSIONAL DEVELOPMENT/TECHNOLOGY UTILIZATION
PERFORMANCE PROFILE

STUDENT PERFORMANCE PROFILE

STUDENT NAME:

SPONSOR NAME:

ORGANIZATION:

REVIEW PERIOD: _____ to _____ **DATE PREPARED:**

INSTRUCTIONS: Please indicate the appropriate rating level. Provide supporting comments as necessary. If any factor does not apply to the student's internship experience, it may be left blank.

RATING LEVELS:

NI - **Needs Improvement**: The student is not working satisfactorily and improvements must be made.
S - **Satisfactory**: The student performs required tasks at a satisfactory level, commensurate with job and educational level expectations.
E - **Excellent**: The student performs in a highly skilled and competent manner.

	NI		S		E
1. QUALITY OF WORK - The student takes care in seeing that tasks are completed accurately and with quality. COMMENTS:	1	2	3	4	5
2. QUANTITY OF WORK - The student completes the required amount of work in a timely manner. COMMENTS:	1	2	3	4	5
3. JOB KNOWLEDGE - The student seeks the knowledge and skills required for the performance of assigned tasks and responsibilities. COMMENTS:	1	2	3	4	5
4. PLANNING & PRIORITY - The student is able to plan time for assigned tasks, establish and adjust priorities as necessary. COMMENTS:	1	2	3	4	5
5. WRITTEN & VERBAL COMMUNICATION - The student is able to transmit ideas, instruction, and information with clarity and accuracy. COMMENTS:	1	2	3	4	5

6. INITIATIVE & MOTIVATION - The student takes initiative in obtaining and completing tasks and remains motivated to perform with a high level of intensity and interest. 1 2 3 4 5
COMMENTS:

7. ATTENDANCE - The student is timely and attends regularly. When to be tardy or absent, the student gives punctual notification. 1 2 3 4 5
COMMENTS:

8. PROBLEM SOLVING - The student is able to identify problems and initiates alternatives and solutions. 1 2 3 4 5
COMMENTS:

9. TEAMWORK - The student productively interacts and contributes as a group member. 1 2 3 4 5
COMMENTS:

10. LEADERSHIP - The student exhibits a mature attitude and when appropriate, attempts to influence others' decisions and actions. 1 2 3 4 5
COMMENTS:

11. ADAPTABILITY - The student is able to accept and adapt to changes in the work place. 1 2 3 4 5
COMMENTS:

12. ORGANIZATIONAL IMPROVEMENT - The student attempts to contribute to the continual improvement of the organization. 1 2 3 4 5
COMMENTS:

13. HUMAN RELATIONS - The student is positive in communications and actions. 1 2 3 4 5
COMMENTS:

14. SELF-IMPROVEMENT - The student seeks and acquires skills and experiences for self-improvement and development. 1 2 3 4 5
COMMENTS:

15. POLICY COMPLIANCE - The student is compliant with the organization's policies and standards. 1 2 3 4 5

The student dresses appropriately for the professional environment. 1 2 3 4 5

COMMENTS:

16. TECHNOLOGY UTILIZATION - (Indicate N/A if not applicable)

The student:

A. competently utilizes technology as a tool to complete required tasks. 1 2 3 4 5

B. requests tasks which demonstrate technological competency. 1 2 3 4 5

C. is eager to complete tasks which require technology utilization. 1 2 3 4 5

COMMENT:

17. GOAL SETTING - The student regularly presents a plan for achieving experiences that will promote personal/professional growth. 1 2 3 4 5

ADDITIONAL FACTORS - Are there any factors which may be unique or relevant to the tasks that the student is required to complete?
COMMENT:

RECOMMENDATIONS/ACTION PLAN:

Sponsor Signature _____ Date _____

APPENDIX H

INTERVIEW ROLE PLAYING ROLES

Interview Role Playing

During the role playing interview activity, be yourself and integrate the characteristics listed into your own personality. We don't want the other students to really know which characteristics are yours and which are the role playing characteristics.

Student 1: During your interview you will exhibit the following characteristics:

- Talk too much
- Act as though you "know it all"
- Interrupt the interviewers, but not to the point of being rude. (Act "cutesy" and apologize for interruptions.)
- Dress somewhat casually as though you think that your "personality" will be enough to get the placement.

Interview Role Playing

During the role playing interview activity, be yourself and integrate the characteristics listed into your own personality. We don't want the other students to really know which characteristics are yours and which are the role playing characteristics.

Student 2: During your interview you will exhibit the following characteristics:

- Be subdued. For example, when asked question about what you want out of your internship, shrug your shoulders and/or say you don't know.
- Make the interviewers ask you some questions twice or at least make them prod you for answers.
- Dress appropriately for an interview.
- Slouch in your seat.
- Speak very quietly, but enough so that they can hear you.
- Answer questions with incomplete answers so that the interviewers need clarification.

Interview Role Playing

During the role playing interview activity, be yourself and integrate the characteristics listed into your own personality. We don't want the other students to really know which characteristics are yours and which are the role playing characteristics.

Student 3: During your interview you will exhibit the following characteristics:

- Be yourself! Answer questions thoughtfully and to the best of your knowledge.
- Ask questions of the interviewers which require more than yes or no answers.
- Wear jeans.
- Be prepared; know about your internship placement. (Ask me if you are not sure of some of the history or background.)
- Slouch a bit and move around as though you are uncomfortable.

Interview Role Playing

During the role playing interview activity, be yourself and integrate the characteristics listed into your own personality. We don't want the other students to really know which characteristics are yours and which are the role playing characteristics.

Student 4: During your interview you will exhibit the following characteristics:

- Try to answer each question as honestly and fully as possible.
- Act as though you know nothing about the internship site and that the coordinators "just placed" you there.
- Over dress for the interview.
- Avoid eye contact.

Interview Role Playing

During the role playing interview activity, be yourself and integrate the characteristics listed into your own personality. We don't want the other students to really know which characteristics are yours and which are the role playing characteristics.

Student 5: During your interview you will exhibit the following characteristics:

- Try to answer questions fully.
- Be very concerned about your days off and vacations.
- Maintain eye contact with one of the interviewers and not so much with the other.
- Dress appropriately for an interview.
- Ask if there is any opportunity for employment.

APPENDIX I

INTERVIEW EVALUATION TOOL

Interview Evaluation

«Name»
«Time»

«School»
«Career Area»

Please rate the intern s interview as follows.

1 = Needs Improvement
2 = Meets Expectations
3 = Exceeds Expectations
4 = Not Applicable

Demonstrates maturity and seriousness in approach. _____

Communicates clearly and with a sense of care and accuracy. _____

Exhibits an ability to plan effectively. _____

Demonstrates a positive sense of persuasiveness. _____

Demonstrates personal control. _____

Is able to delegate assignments and to keep track of progress. _____

Exhibits flexibility in thoughts and practice. _____

Works well with others and in groups. _____

Reveals a strong sense of integrity. _____

Takes initiative. _____

Has well-defined personal standards. _____

Dresses suitably for the work environment. _____

Comments:

APPENDIX J

INTERVIEW CRITIQUE SHEET

Interview Critique Sheet

Please rate the intern's interview as follows.

1 = Needs Improvement
2 = Meets Expectations
3 = Exceeds Expectations
4 = Not Applicable

Demonstrates maturity and seriousness. _____

Communicates clearly and with a sense of care and accuracy. _____

Demonstrates persuasiveness. _____

Demonstrates personal control. _____

Is interesting. _____

Speaks at an audible level. _____

Dresses suitably. _____

Overall appearance is satisfactory. _____

Asks questions _____

Comments:

Strengths | **Weaknesses**

APPENDIX K

SPREADSHEET/CHART INSTRUCTIONS

Creating a Spreadsheet and Chart

Starting the Computer:
Turn the computer on in the back of the CPU, central processing unit.

Starting Up ClarisWorks:
Click twice on the Hard Drive Icon to open the window.
Click twice on the ClarisWorks 2.1 Folder.
Click twice on the ClarisWorks Program Icon.
Then you will see a menu indicating the various types of documents that you can create.
Select the Spreadsheet and click **Ok.**

Beginning:
You will now have a blank spreadsheet on the desktop.

Input the following:

In column A, Row 3, type	Tuesday
In column A, Row 5, type	Wednesday
In column A, Row 7, type	Thursday
In Column A, Row 9, type	Friday
In Column A, Row 11 type	Saturday
In Column A, Row 13 type	Sunday

Then input the following:

In column B, Row 15 type	Sleep
In column C, Row 15 type	School
In column D, Row 15 type	Work
In column E, Row 15 type	Leisure
In column F, Row 15 type	Eating
In column G, Row 15 type	Studying

Next input the time that you spent participating in each activity.

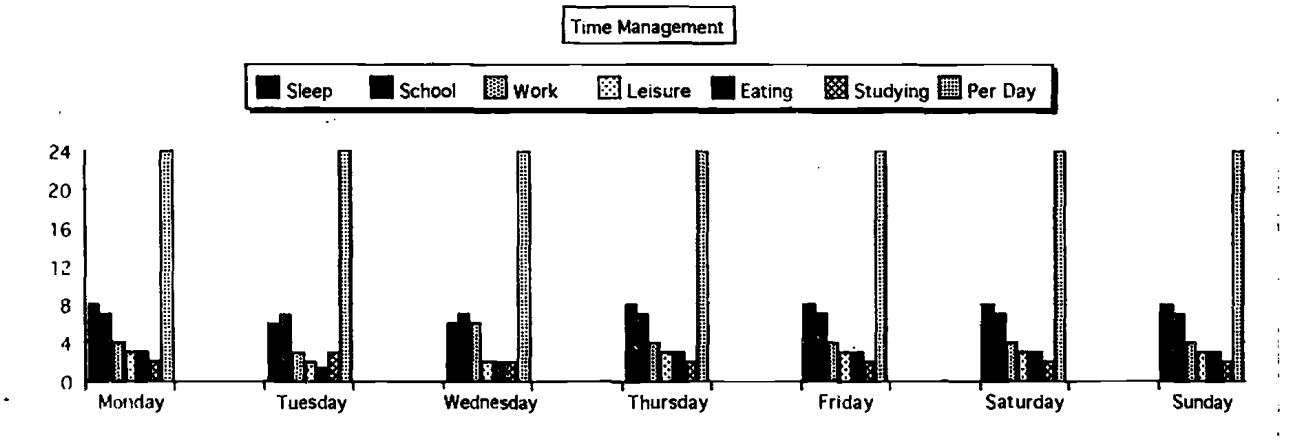
Save and name the document.
Put your disk in the disk drive. Click on the file menu and select **Save As...** Be sure that you have selected your disk as the place to save the file. Name it **Daily Activity Record.** Finally click **Save.**

To Make the Chart:
Put the pointer on A3, click and while holding the mouse button down, move down and over, across the information so as to highlight all of the spreadsheet information. Then click on the **Options menu** at the top and select **Make Chart.** Select the graph of your choice. Experiment to see which makes the best, most comprehensive chart, meaning the one that includes all of your information. The Bar Graph probably makes the best chart.

APPENDIX L

TIME MANAGEMENT CHART/NARRATION SAMPLE

My Daily Activities for One Week



When I reflect upon how many hours I spend at school or working or studying, I realize that I am not spending very much time relaxing and enjoying leisure activities. Often I try to overdo it, and I do not give myself enough time to relax. I am determined to make this situation better in the future. I definitely need more leisure time.

APPENDIX N

NEWSBRIEF FORMAT

NEWSLETTER FORMAT

Please follow the guidelines below when you compose your entry for the next mid-county newsletter. Remember, only you can provide information that will best summarize and represent your activities and experiences at the internship.

Guidelines for writing the newsletter entry:

- Write in the past tense.
- Write in the third person.
- Type and double space the text.
- Use first and last names (no Mr. K.), and ***make certain*** that you have spelled the names of individuals at the internship correctly.
- Limit the newsbrief to one paragraph.
- The first sentence must include your name, the name of the sponsoring organization, and your sponsor's name.
- The body of the paragraph should include typical activities performed, something new that you have learned, and/or the most exciting thing that has happened to you at your internship.
- The last sentence should tell how the internship has influenced your career decision.
- *Reread and edit*, then give it to someone else to read for further editing.

Sample Newsbrief

Under the guidance of **John Smith** of the **State Attorney's Office, Jane Calhoun** discovered that being an assistant state attorney is not all glamour. There is a lot of hard work in creating a case from start to finish. **Jane** saw assistants, **Robert Luciano** and **Kevin Hayes**, prosecute in court, she worked with the computer to develop an arraignment calendar, and she assisted attorneys in completing paperwork in misdemeanor cases. She found the process of jury selection fascinating. **Jane's** experience has convinced her that a career in criminal law is her goal.