Development of a Technology Mentoring Program Using Rogers' Diffusion of Innovations Theory

by

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(ABSTRACT)

This developmental research used primary components of Rogers' Diffusion of Innovations theory to develop a technology mentoring program for K-12 instructional environments. This investigation utilized K-12 teachers, administrators, technology coordinators, and higher education faculty to evaluate the effectiveness of the proposed technology mentoring program. Findings showed that this program would be very effective in K-12 instructional environments. The final product resulted in a step-by-step procedural guide consisting of suggestions and activities that can be used to implement a technology mentoring program.

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Celebrate Life!!!

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CHAPTER ONE

Introduction

As the United States educational system enters into a new millennium it is evident that many teachers in public K-12 schools are not using technology for classroom instruction. The increase of technology is evident in our society and in the schools, so why are teachers not using it? Studies conducted by McCannon and Crews (2000) found that although a number of computers are found in elementary schools, many of the teachers are not using them as an integral part of the student learning process.

The literature identifies increased technology training and in-service support as primary factors needed to encourage technology use by teachers (Ertmer & Hruskocy, 1999). The lack of training is consistent throughout the teaching profession regardless of the teachers' age. In 1999, 34% of teachers reported spending 9-32 hours on professional development activities related to technology training. Specifically, these teachers reported spending more time using computers and the Internet for classroom instruction. It was found that when teachers spent more than nine hours on professional development activities they felt well prepared to use the technology in their classroom instruction (Smerdon, Cronin, Lanahan, Anderson, Ionetti, & Angeles, 2002). Successful staff development training sessions involve hands-on activities, continuous training, modeling, mentoring, and the availability of follow-up training opportunities (Roblyer, 2003).

The majority of past technology staff development training has been described as "specialists" brought on site once or twice a year to train teachers on the use of their products. This type of training is not productive for most teachers. The shift for staff development is for ongoing training where teachers have the support of on-site staff that understands educational technology and classroom applications of the technology (Coley, Cradley, & Engel, 1997; Poole & Moran, 1998; Ronnkvist, Dexter, & Anderson, 2000).

Mentoring programs have been found to be an effective staff development strategy for supporting teachers' use of technology in the classroom (Chuang, Thompson, & Schmidt, 2003; Kittler, 1994). To address the need for the training of teachers in the schools, Ertmer and Hurskocy (1999) studied the impact of a university-elementary school partnership in supporting technology integration for both a mentor and teacher.

They found that teachers' increased use of technology lead to the creation of a number of instructional materials to supplement the teaching and learning process.

A review of literature indicates that technology mentoring programs exist but none exist that are based on theory. Diffusion of innovations theory looks to be possible basis to create such a program.

Purpose of Study

The purpose of this study was to develop a technology mentoring program for K-12 instructional environments based on Rogers' Diffusion of Innovations (DOI) theory. The study resulted in a proposed written program for successfully implementing a technology mentoring program. Developing the program meant providing a theoretically-based technology mentoring plan that is usable as an effective staff development strategy.

This developmental study used Rogers' (1995) diffusion of innovations to develop a technology mentoring program that provides step-by-step procedures for implementing a technology mentoring program. The review of literature has shown that there are a number of mentoring programs available, but none specifically developed using the diffusion process to support the development of a technology mentoring program for K-12 environments. This study incorporated the components of diffusion theory into a technology mentoring program that can be implemented as an ongoing technology staff development strategy. Researchers have used diffusion concepts in a variety of ways to address the development of products for instructional design and technology applications (Surry & Ely, 2002). This research study provides the necessary skills and knowledge to develop a technology mentoring program that can be used to expedite the use of technology in K-12 environments.

Significance of Study

A current review of relevant literature does not produce evidence of theory-based procedural guides or manuals designed to diffuse technology mentoring programs into K-12 environments. This study will extend the current literature by describing and analyzing the developmental process used to create a technology mentoring program.

Research Goals

The goals of this developmental study were to:

1. Develop a technology mentoring program for K-12 instructional environments using Rogers' Diffusion of Innovations theory; and
2. Identify the theoretical and practical considerations for implementing the technology mentoring program.

CHAPTER TWO

Literature Review

The literature review focused on the following major areas: a historical overview of the influence of technology in education; the need for increased teachers' use of technology in the teaching and learning process; mentoring as an effective staff development strategy; and diffusion of innovation as the theoretical framework for this study.

Historical Overview of Influence of Technology

There have been a number of educational reform issues impacting the integration of technology in schools. The following literature examines the educational issues of school reform and the impact it has on the need for technology integration in the school system.

School reform

In order for the United States to remain strong in a global economy, learners must excel academically at math and science. Prior to the national wake-up call of *A Nation at Risk* (National Commission on Excellence in Education, 1983), the launching of the Russian Sputnik in 1957 ignited the increased attention to student science achievement in American schools. The widespread fear that American students would not be able to compete successfully with their Russian counterparts forced the United States to take a closer look at the current educational system and its preparation of students (Donlevy & Donlevy, 1996).

The skills that were once important in the industrial age no longer serve the needs of the workforce of today. The emergence of new technologies is requiring school systems to restructure and prepare students who are able to acquire new skills, knowledge, and attitudes (Logan, 1995). Educational reform or restructuring has been a major theme in the United States for over three decades (Goodlad, 1994). The federal government's interest in the restructuring of the educational system was a major factor in the development of collaborative efforts to provide the best educational opportunities for students. The Clinton-Gore Administration provided the leadership in the development of the first national technology plan, *Getting America's Students Ready for the 21st Century: Meeting the Technology Literacy Challenge*. The plan presented a long-range vision for

the effective use of technology in elementary and secondary education to help prepare the next generation of students to be better educated for the evolving demands of the new American economy (U. S. Department of Education, Office of Education Technology, 2000). Working together with federal, state, local and private agencies, the nation began to make progress toward achieving the national educational technology goals to enhance the teaching and learning process. As new technologies began to emerge, a collaboration of stakeholders reviewed and revised the previous goals to include more emphasis on how technology is used in education. These goals are listed in Table 1.

Table 1

National Educational Technology Goals

National Educational Technology Goals	
Goal 1	All students and teachers will have access to information technology in their classrooms, schools, communities and homes.
Goal 2	All teachers will use technology effectively to help students achieve high academic standards.
Goal 3	All students will have technology and information literacy skills.
Goal 4	Research and evaluation will improve the next generation of technology applications for teaching and learning.
Goal 5	Digital content and networked applications will transform teaching and learning.

According to Donlevy and Donlevy (1996) schools were being charged with the development of competent future workers capable of meeting the demands of the current technological society. The skills needed were more critical than the skills students previously obtained. The National Council of Teachers of Mathematics (1996) clearly accentuated the demands of the current workforce:

> A mathematically literate workforce is crucial because advancing methods of production make ever-higher demands on worker's knowledge and skills. Traditional standards for basic mathematical competence are not sufficient. Workers now must understand the complexities and technologies of communication and must be prepared to ask the right questions, assimilate new information, solve unfamiliar problems in unconventional ways, and work cooperatively as well as independently (p. 4).

The Educational Testing Services (Wenglisky, 1998) used data to document 98% of all schools now have some form of technology available for teaching and learning. It was estimated that federal, state and local initiatives and school districts spent approximately $6.9 billion on computers, software, Internet access, connectivity, and other technology related resources to ensure the availability of tools to support the integration of technology (Kleiman, 2000).

With school reform efforts placing emphasis on increasing technological skills, school systems were charged with producing more competitive students, increasing accountability for results, raising achievement benchmarks and disseminating programs that were known to work.

Systemic reform requires that school administrators, teachers, and students adopt new roles. Research has found that when school administrators are informed about technology and feel comfortable using it, they become key players to lead the support for the integration of technology in the classroom (Coley, Cradler & Engle, 1997; Fullan, 2002). This support rendered by administrators has been identified as the most critical element needed to produce effective integration of technology (Ritchie, 1996).

Darling-Hammond (1990) cautions that American schools designed for the 19th century can no longer solve the problems facing the 20th century. Making changes to a system takes time and commitment from all stakeholders. Schools are forced to restructure the way they currently teach students. The literature supports the systemic reform of the educational system to meet the current demands of the workforce (Dede & Lewis, 1995; Honey, Culp, & Carrigg, 1999). The demands placed on the schools require a new way of thinking and teaching which suggests all stakeholders must become actively involved to produce technologically literate students (Ross, McGraw, & Burdette, 2001).

Zhao and Cziko (2001) suggest that to understand why teachers use (or do not use) technology demands a look at teachers as goal-oriented and purposeful agents. They recommend using the Perceptual Control Theory (PCT) to understand the technology infusion by teachers. From a PCT perspective three conditions are necessary for teachers to use technology:

1. The teacher must believe that technology can more effectively achieve or maintain a higher-level goal than what has been used;
2. The teacher must believe that using technology will not cause disturbances to other higher-level goals that he or she thinks are more important than the one being maintained; and
3. The teacher must believe that they will have the ability and resources to use technology (Zhao & Cziko, 2001).

With the increased number of rapidly emerging technologies, teachers can no longer teach the way they were taught. Teachers must be able to quickly adapt to the various technologies that are entering the classroom. The emergence of technology use in the schools finds the teacher moving from the traditional or classical teaching methods of teacher-centered to student-centered instruction where the teacher is more of a facilitator of information and resources (Hannafin & Savenye, 1993; Roblyer, 2003).

Sandholtz, Ringstaff, and Dwyer (1997) note interesting changes in teacher instructional practices when technology was added as part of classroom instruction. The researchers found that there was no substantial increase or change in students' learning tasks, but a drastic change was seen in teachers. Interactivity between teachers and students increased, teachers became more like guides, mentors or facilitators and less like lecturers. These changes in the teacher instructional strategies provoked students to respond differently. Cooperative and task-related interactions among students were spontaneous; students initiated technology assistance among their peers. This interaction deviated from the more structured classroom settings where students were expected to obtain information and assistance from the classroom teacher. Instead, peer tutoring became prevalent among students when technology was used in the classroom. Expanding this cooperative concept to teachers helping teachers or mentoring one another on the use of technology is an effort worth investigating to encourage the use of technology in the teaching and learning process. A number of factors must be considered when deciding to use technology for classroom instruction.

Technology Use Factors

A survey administered by the National Center for Education Statistics (NCES, 2000) reported that teachers found a number of factors played major roles in the decision

to use technology in the classroom. Specifically, administrative support and staff/professional development are two primary influences on a teacher's decision to employ technology in the teaching and learning process.

Administrative Support

The administrators' role is a critical factor in technology integration (Ritchie & Wiburg, 1994). As teachers begin to use technology in classrooms more frequently, the role of the administrator is to ensure the availability of technology support systems. In a study conducted by Schrum (1999), the findings suggested that teachers were willing to take risks to discover which computer applications worked with their classroom practices when the administrator created a supportive environment.

Weber (1996) found that the school environment and curriculum requirements sometime discourage the integration of technology. The increased responsibilities teachers now face in the classroom do not leave much time to encourage teacher use of technology. Diverse support systems must be in place for teachers to use technology. The support may be in the form of help planning for uses and acquisitions, time to plan for and implement innovative uses, technical training in how to use new hardware and software, on-demand help and assistance, and instructional support which entails demonstrations on how to incorporate and use technology in classroom instruction (Ertmer, 1999).

A study conducted by Coffland (2000) found that administrators' attitude toward technology correlated with teachers' attitude towards technology use. A teacher whose administrator was against the use of technology would less likely integrate technology in their classes.

Other studies have argued that technology support is a major factor that influences effective technology integration by teachers (Means & Olson, 1995, Sandholtz et al.1997) and without the presence of this support, obstacles exists to effective student learning (OTA, 1995; Ronnkvist et al., 2000).

Data collected by Ronnkvist et al. (2000) from a national probability sampling of principals, technology coordinators and teachers determined that technology support is multifaceted. Based upon the findings, technology support consists of, but is not limited to a number of factors: (a) adequate facilities, (b) presence of support staff, (c)

professional development, (d) instructional support, (e) individualized training, and (f) professional incentives. Quality support systems require technology leaders plan effective coordination of the preceding elements. Further recommendations include three issues, which surfaced that could assist technology leaders in coordinating a successful support system: (a) technology leaders must be mindful that technology support is more than technical support; (b) technology support programs are more effective when directed by well-trained technology coordinators; and (c) teachers must be provided opportunities to learn and use technology.

With careful planning and coordination, technology leaders can expect to see an increase in teachers' use of technologies (Ronnkvist et. al., 2000). Becker (1994) argues that the key elements of a technologically supportive environment should include: (a) administrative and technical support at the school site, (b) allocation of resources for hardware and software, and (c) networking that provides Internet access as significant factors in a supportive environment.

Professional/Staff Development

The terms professional and staff development have been used interchangeably in various settings. For the purpose of this research the term professional development will be defined in its broadest sense to include the influences of technology and its impact on society.

Grant's (1999) suggested definition of professional development is:

> Professional development … goes beyond the term 'training' with its implications of learning skills, and encompasses a definition that includes formal and informal means of helping teachers not only learn skills but also develop new insights into pedagogy and their own practice, and explore new or advanced understandings of content and resources. [This] definition of professional development includes support for teachers as they encounter the challenges that come with putting into practice their evolving understandings about the use of technology to support inquiry-based learning … Current technologies offer resources to meet these challenges and provide teachers with a cluster of supports that help them continue to grow in their professional skills, understanding, and interests (p.2).

To increase the use of technology by teachers, effective training programs or opportunities must be available (Brand, 1998; Cooper, 1998). Fazio and Polsgrove (1998) studied special education teachers and found that when training of technology integration is provided, there is an increase in computer usage in the classroom. Research studies (Joyce & Showers, 1995; Bradshaw, 2002) have been conducted on effective staff development models that examine how teachers transfer new skills and knowledge into the classroom. As a result, four categories for staff development activities were identified that provide support to educators when implementing new skills obtain from attending a staff development program. The four staff development categories are: (a) presentation of theory; (b) modeling or demonstration; (c) practice with low risk feedback; and (d) coaching, study groups, or peers visits, and follow-up activities.

Joyce & Showers (1995) found that each staff development activity produces an impact in relationship to the type of training provided. When the staff development workshop is only provided with a presentation of theory and no interaction with peers, modeling, or practice, few teachers will make changes in their teaching behavior. An estimated 5-10% implementation of the skills and knowledge will be transferred. However, if the staff development activity includes a presentation of theory, information, demonstration, and practice with feedback, the transfer of skills and knowledge to the classroom will increase to 90%. When coaching in the form of peer visits or study groups are added along with access to follow up activities, the effectiveness of technology integration enhances (Bradshaw, 2002; Schrum, 1999).

Effective professional development programs can assist the administrators in making the best decisions regarding funding levels for technology, incentives and rewards for teachers' use of technology, and community partnerships that help support technology initiatives (Johnston & Cooley, 2001). The literature suggests that staff development can be an effective strategy for implementing technology in the classroom if certain conditions are in place. Mentoring is one such strategy that might be considered to effectively support teachers' technology use.

Mentoring

Mentoring has been recognized as a major strategy that supports staff development training for teachers. The following literature reviews research related to the

definition of mentoring; mentoring models; characteristics of mentor/mentee relationships; and evaluation of mentoring programs.

Defining the Term

The term "mentor" takes on a variety of meanings dependent upon the context in which it is applied (Galbraith, 2001). Figure 1 illustrates the definitional diversity of the term "mentor."

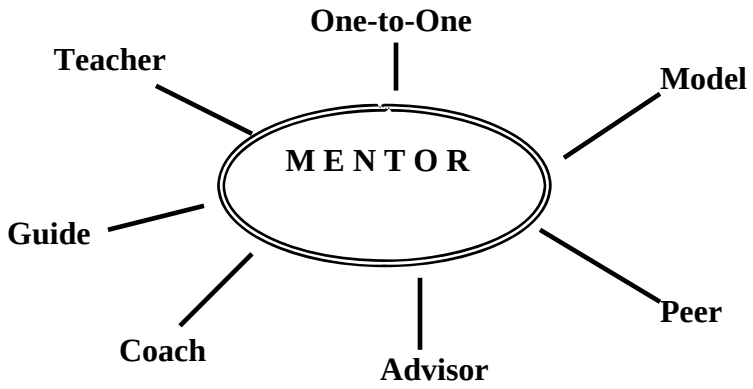

Figure 1. Terms associated with mentoring.

The variety of terms simply indicates the different connotations people have related to the term mentoring (Galbraith, 2001). Historically, the term can be traced back to Greek mythology's story of Mentor in Homer's Odyssey. A brief synopsis of the story is provided as follows:

> When Odysseus, king of Ithaca, went to fight in the Trojan War, he entrusted the care of his household to Mentor, who served as teacher and overseer of his son, Telemachus. After the war, Odysseus was consigned to wander vainly for years in his attempt to return home. With age, the now grown Telemachus went in search of his father. Athena, the Goddess of War and patroness of the arts and industry, accompanied him on his quest and assumed the physical form of Mentor. Following a long search, Odysseus and Telemachus were finally reunited, and together they cast down pretenders to Odysseus' throne and to Telemachus' birthright (Klasen & Clutterbuck, p. 5, 2002).

In the field of education, this story epitomizes the philosophy most associated with mentoring, that is the more experienced teacher assists and guides the newer teacher throughout their formative years (Gerstein, 1985).

Reiman and Thies-Sprinthall (1998) suggest a more relevant definition that relates to the field of education:

> The concept of mentoring is complex and multidimensional, and in the realm of education, the mentor is not usually portrayed as an evaluator, but as a coach and trusted colleague (p. 7).

Wildman, Magliaro, Niles, and Niles (1992) confirm the difficulty reaching a universal definition for mentoring when they stated:

> Because mentoring involves highly personal interactions, conducted under different circumstances in different schools, the roles of mentoring can not be rigidly defined (p. 212).

Over the years, the term mentor continues to be associated with someone who is to be trusted and who shares in the developmental growth of the less experienced person, usually referred to as a mentee or protégé.

Mentoring Models

Several types of mentoring models have evolved as a result of the concept where a more experienced mentor helps a less experienced person develop specific skills and knowledge. These programs or models share similar characteristics (Klasen & Clutterbuck, 2002). Table 2 represents a sampling of these mentoring models and there uses.

Table 2

Mentoring models and uses

Model	**Uses**
Education	Mentoring for teachers, administrators, and students
Business to Welfare	Mentoring of adults movement from welfare to work
Special needs	People associated with minority groups receive mentoring by similar people
Business startups	Help others start up businesses
Business-to-business	Help other business people gain effectiveness in business practices

Most states have now implemented induction mentoring programs to support newly assigned teachers. The primary purpose for this type of mentoring program is to address the need for retaining and recruiting K-12 teachers (Mills, Moore, & Keane, 2001). Research conducted by Tillman (2003) helped to substantiate the success of such programs created to reduce the attrition rate of new teachers. The investigation used a case study approach to examine an African-American teacher's relationship with a mentoring triad that included her principal and her mentor. The teacher was chosen because of her decision to leave the profession after completing the current school year. She indicated her decision to leave was due to instructional and classroom management problems. Through the use of reflection and reciprocal journaling, the triad would keep records of their meetings and respond to a series of questions on a weekly basis. The communications between the teacher, the mentor, and principal helped retain the teacher for another year. The positive communication played a vital role in the first-year teacher's decision to remain at the school.

Mills et al. (2001) surveyed 15 school districts in Michigan to identify "best practices" that have helped retain new teachers. The survey revealed that there are several keys to a successful mentor program: (a) the selection of effective mentors must consider the "best fit" between needs, talents, and personalities of mentors and protégés; (b) logical factors such as the proximity of classrooms and compatible schedules needed to be considered in the pairing of mentors and protégés; (c) effective mentors are developed over time through good training; (d) opportunities to share experiences with other mentors; and (e) feedback from supervisors and protégés (p. 124,125).

An examination of 150 mentor/protégé dyads by Wildman et al. (1992) found additional prevalent elements in induction models included (a) encouraging beginning teachers to reflect upon their practice that include such items as reviewing, lesson plans, etc.; (b) directing and supporting teachers' actions or plans; (c) providing direct assistance in the development of process, policy or product; and (d) receiving personal and/or professional support from the teachers (p. 11).

Data reported from a study of beginning teachers and mentoring by Meckel and Rolland (2000) found that it was more advantageous to have on-site mentors at their

schools, because on-site mentors were familiar with the culture of the school and experienced good relationships with the teachers.

During a session held at the 1998 National Staff Development Council conference, teachers discussed four critical factors influencing the development and improvement of mentoring programs among beginning teachers. The topics included the (a) selection process of mentors and mentees; (b) mentor training; (c) providing a focus to mentoring; and (d) integrating mentoring with other staff development programs (Ganser, 2000). It was determined that these factors are vital for the development of any mentoring program.

Ten fundamental principles for induction mentoring programs were established by the Association of Teacher Educators' Commission to promote effective mentoring programs for newly assigned teachers. These principles have been widely accepted and researched in other mentoring contexts (Bey & Holmes, 1992). The ten principles are listed in Table 3.

Table 3

Principles of mentoring

Component	Principle
The Mentoring Process	1. Mentoring is a complex process and function. 2. Mentoring involves support, assistance, and guidance, but not evaluation of the protégé. 3. Mentoring requires time and communication. 4. Mentoring should facilitate self-reliance in protégés.
Mentoring Programs	5. Mentoring is bigger than induction. 6. Mentoring programs should involve local school districts in collaboration with institutions of higher education, state departments of education, and teachers' bargaining groups. 7. The structure of mentoring programs should be consistent with school district goals. 8. Mentoring programs should be evaluated.
Selection and Preparation of Mentors	9. Mentors should be selected based upon identified criteria. 10. Mentors should be prepared (trained) and offered incentives for their work.

Mentoring has also been used to increase teachers' technology skills. The Rhode Island Teachers & Technology Initiative (Henriquez & Riconscente, 1998) was created to promote professional development for teachers interested in enhancing their technological skills. The teachers would meet for two weeks during the summer to receive training on how to use the Internet and software applications in their instructional practices. After the training sessions, these teachers were expected to return to their schools and mentor other teachers using the skills they developed during the two week session. A similar program partnered the University of Maryland with the Prince Georges County Public Schools to promote the increase of technology skills among teachers by

using experienced computer-using teachers as mentors for other teachers in the school system (Chuang, Thompson, & Schmidt, 2003).

A multimedia specialist program was created for the Sunnyvale Elementary School District to successfully integrate technology into classroom instruction (Kittler, 1994). Mentors made weekly contacts with classroom teachers for ongoing support. Teachers took part in a five day technology training program and received additional five days of follow-up training during the school year. The mentor and teacher relationship resulted in increased teacher motivation and positive changes in the classroom. The following components emerged from this study and from the suggestions offered by Kittler (1994), the components can be used to produce a successful mentoring program designed to support technology use by teachers. The components are: (a) the primary focus must be on the curriculum and instruction, not the technology; (b) teachers must be active participants in planning, implementing, and expanding the use of technology in the classroom; (c) hardware and software must be linked to staff development; (d) training is supported by detailed follow-up and support with additional workshops and assigned mentors; (e) communication among teachers is encouraged; (f) formal commitment to the program, in terms of money or time, is received from all involved parties: teachers, administrators, etc.; and (g) qualitative and quantitative evaluation is planned into the program (1994, p. 9).

These mentoring programs vary in their purposes and design, but a number of similarities are found within these programs that are typical to all mentoring programs.

Mentor/Mentee Relationships

The success of any mentor program is dependent upon the relationship established between the mentor and mentee. Galbraith and Maslin-Ostrowski (2000) identified a number of characteristics that mentors and mentees must possess for strong mentoring relationships. A list of the characteristics is found in Table 4.

Table 4

Mentor and mentee characteristics

Mentor	Mentee
1. Respect for the mentee	1. Desire to work towards professional goal
2. Strong communication skills	2. Ability to accept help from others
3. Ability to encourage, motivate, and develop others	3. Good listening skills
4. Ability to engage in reflective and critical thinking	4. Eagerness to cooperate
5. Willingness to share skills, ideas, and resources	5. Positive attitude
6. Wide range of professional skills	6. Desire to see different points of view
7. Genuine interest in helping others	

In addition to these characteristics, Young and Wright (2001) contend that a good mentor will also possess the following qualities: (a) committed to the role as a mentor; (b) meets the protégé/mentee needs; (c) knowledgeable in the desired field; (d) being able to take on the role as a guide; and (e) sensitive and understanding of the protégé/mentee's needs. Researchers concur that when the characteristics of the mentor are understood, both the mentor and mentee will be able to assess whether the relationship will be successful (Adams, 1998; Young & Wright, 2001). Successful mentoring relationships are dependent upon the characteristics each brings to the relationship and whether the needs of both are being met (Wittenberg, 1998; Young & Wright, 2001).

Mincemoyer and Thomson (1998) studied the mentoring relationships in the Pennsylvania State Cooperative Extension program and concluded that the success of the relationships is dependent upon several factors: (a) guidelines establishing mentor roles; (b) information about the mentor roles; (c) training opportunities; (d) documented records of mentor and mentee activities; (e) process used to initiate successful relationships; (f) selection process; (g) guidelines to assist mentor and mentees with developing the relationship; and (h) timeline of the mentoring program. In addition to the factors found, Mincemoyer and Thomson also emphasized the importance of the administrative representatives in developing an effective mentoring program. Work facilitated by

Ganser (2000) encourages the participation of mentors and mentees in joint training activities to promote better understanding of how other people think and work.

Evaluating Technology Mentoring Programs

Whittaker & Cartwright (2000) posits that primary monitoring and evaluation of a mentor program should look at the benefits to the mentor, benefits to the mentee, and benefits to the organization as opposed to evaluating mentors and mentees independently. Odell (1992) suggests that an ongoing evaluation process should be established at the start of a mentoring program and that the evaluation process include all aspects as to how the evaluation will be accomplished and what will be evaluated. This early establishment allows stakeholders the opportunity to monitor growth over a period of time.

Further study by Odell (1992) indicates there are no set guidelines as to how an evaluation should be accomplished. Much of the determining factor is dependent upon the purposes of the mentoring program. Galluzzo and Craig (1990) suggest four purposes that can be applied towards the evaluation of mentoring programs: accountability, improvement, understanding, and knowledge. These purposes can be evaluated using a variety of formats: surveys, interviews, focus groups, workshop reviews, etc. The most important element pertaining to the evaluation process is to monitor and evaluate the program on a regular basis (Whittaker & Cartwright, 2000).

Diffusion of Innovations

Rogers' Diffusion of Innovations (DOI) theory has been used in a number of contexts and is a well-established theory for use in an educational environment (Surry & Ely, 2002). The DOI model has served as an effective social change foundation for a number of years and is still recognized as a dominate approach used when discussing innovations for social change. The use of the Diffusion of Innovations theory is well-defined and can be implemented to develop practical programs (Holloway, 1996; Surry & Farquhar, 1997; Surry & Ely, 2002).

The Diffusion of Innovations theory is defined as the "process by which an innovation is communicated through certain channels over time among the members of a social system" (Rogers, 1995, p.10). The four primary components of the theory consist of an innovation, communication, time, and the social system or organization expecting

to utilize the product (Rogers, 1994, p. 35). These four primary components will be used to develop a feasible program that can suffice as an effective staff development strategy.

Getting individuals to adopt new ideas or innovations takes time, as does making changes in an educational system. It has been said that without change, “a static society will evolve” (Fullan & Stiegelbauer, 1991, p.3). The current decade has been one rapid, revolutionary, technological change. Change has been the order of the day; inevitable, inescapable, and imminent (Fullan & Stiegelbauer, 1991). According to Handy (1990), change is simply “another word for growth, another synonym for learning” (p.5). He suggests that incremental change tends to pose little threat, it allows ample space for individuals to adjust; however, discontinuous change produces anxiety for it is unmanageable, unpredictable, and it forces individuals into uncomfortable zones, particularly new ways of thinking and new ways of learning. Fullan and Stiegelbauer (1991) support Handy’s notion that change involves learning how to do something new; however, their focus of this notion lies strictly within educational environments.

This process is referred to as the rate of adoption which is the rate of speed or the length of time it takes individuals to adopt an innovation (Rogers, 1995). The rate of adoption can depend on the social system within which the diffusion is to take place. Rogers (1995) found that adoption of new innovations is an active process that involves much reinvention. Adopters change or modify an innovation to make it their own to satisfy the need at the time. In the school system, teachers are encouraged to reinvent activities and make them their own to ease innovation into the instructional environment.

Havelock (1973) identified three roles as predictors of adoption of an innovation. He found that innovators are risk takers and are the first to adopt. Resisters are active critics of new innovations and are the last to adopt. According to Havelock leaders look closely at the situation before they decide to adopt and will only move when they feel the time is right for them. Although the leaders are the key to the growth of any adoption, they are not usually in the first group of adopters.

A change agent as defined by Havelock (1995) is “a person who facilitates planned change or planned innovation” (p. 5), whereas, Fullan (1993) suggests teachers take a more active role as change agents. This is usually a difficult role for teachers due

to their status in the social environment. A study conducted by Collis, Knezek, Lai, Miyashita, Pelgrum, Plomp, & Sakamota (1996) stated:

> Teachers are the main gatekeepers in allowing educational innovations to diffuse into the classrooms. Therefore one of the key factors for effecting an integration of computer in the school curriculum is adequate training of teachers in handling and managing these new tools in their daily practices (p. 31).

Collis, et al. (1996) found that the "degree of classroom computer use was closely tied to the extent of training in integration techniques" (p. 32). In most cases of technology integration, teachers are the ones to make the decision as to whether or not an innovation will be diffused in the classroom. Rogers (1995) identifies five characteristics of the process used when contemplating the diffusion of a new innovation:

1. Relative advantage – describes the degree to which an innovation is perceived;
2. Compatibility – is the degree to which an innovation is consistent with the existing values, past experiences, and needs of the potential adopter;
3. Complexity – is the degree to which an innovation is perceived as relatively difficult to understand and to use;
4. Trialability – is whether an innovation can be experienced with on a trial limited basis; and
5. Observability – potential adopters want to see observable results (Rogers, 1995, p. 250).

According to Lefebvre and Lefebvre (1996), not everyone in the same organization system will adopt a piece of technology the same as another member of the organization. The adoption of new ideas or innovations occurs due to information shared by members of the same social group (Rogers, 1995).

The time element of the diffusion process allows for the generation of diffusion curves and to classify adopters into categories. The five adopter categories developed by Rogers (1995) are listed in Table 5 and contain the characteristics associated with that particular group.

Table 5

Adopter categories and characteristics

Categories	**Characteristics**
Innovators 2.5%	1. Venturesome 2. More years of formal education 3. Control of substantial financial resources 4. Understand and apply complex technical knowledge 5. Able to cope with high degree of uncertainty 6. Risk takers 7. May not be respected by peers 8. Network of peers outside of local social system
Early Adopters 13.5%	9. Respected by peers 10. More integrated within social system 11. Greatest degree of opinion leadership 12. Potential adopters look to early adopters 13. Change agents 14. Role model among peers 15. Makes judicious innovation decisions 16. Distribute subjective evaluations about innovation to others
Early Majority 34%	17. Deliberate before adopting new idea 18. Interact frequently with peers 19. Adopt new idea just before the average member of the system 20. Seldom lead 21. Uncertainty about innovation must be eliminated before adoption
Late Majority 34%	22. Skeptical about new ideas 23. Adopt new ideas after the average member of the system 24. Adoption may be due to peer pressure or economic reasons 25. Uncertainty about a new idea must be removed before adoption 26. Scarce resources available
Laggards 16%	27. Last to adopt an idea 28. No opinion leadership qualities 29. Hold onto traditional values 30. Isolated within social network of their local system 31. Suspicious of innovations and change agents 32. Must be certain idea will not fail before adoption

From the table it can be determined that the rate of adoption is related to the five characteristics of innovation adoption which Rogers (1995) identified as being helpful in explaining the differences in adoption rates. With the development of the categories it is simpler to identify individuals over a period of time that will provide assistance with

targeting other potential users for a new innovation (Mahajan, Muller, & Srivastava, 1990). The adoption of a new innovation will result from information exchanged through groups or the social system. The first adopter of the innovation discusses it with another member of the system, and then each of the other adopters pass the new idea along to other peers. According to Rogers, the diffusion curve begins to level off after half of the members of the system have adopted the innovation. The segment of the diffusion curve between 10 to 20 % adoption is "critical mass" or the "heart of the diffusion process" and represents the transition from the "early adopter" level of innovativeness to the "early majority." Each of the five categories has different personality variables and communication behaviors. The early adopters have a more favorable attribute toward change, are more social, and have greater knowledge of innovations than late adopters (Rogers, 1995).

Mahajan, Muller, & Srivastava (1990) investigation of other diffusion models that suggest adoption categories for product innovations found that there are other models that may be used instead of Rogers'; however, it was found that Rogers' categorization scheme offered several advantages for describing the adoption patterns of individuals in a group. The researchers found that the categories established by Rogers is easier to use; it offers mutually exclusive and exhaustive standardized categories where results can be compared, replicated; and generalized across studies. It was determined that the underlying distribution was assumed to be normal and that continued acceptance of an innovation can be predicted and linked to the adopter categories.

The innovation-decision process occurs over time, consisting of several stages "passes from first knowledge of an innovation, to forming an attitude toward the innovation, to a decision to adopt or reject the innovation, to implementation of the new idea, and to confirmation of this decision" (Rogers, 1995, p. 161). The stages are:

1. The knowledge stage begins when the individual gains awareness that a new innovation does exists. Once the innovation has been identified, the individual begins to seek information about the innovation to reduce uncertainty about the advantages and disadvantages of how the innovation functions (Rogers, p.162). The individuals' attitudes or beliefs about the

innovation are a determining factor as to whether the innovation is adopted or rejected.

2. During the persuasion stage the individual begins to form a favorable or unfavorable attitude toward the innovation. The individual also seek information about the innovation and starts to apply the new idea to his/her own personal feelings (Rogers, p. 168).
3. The decision stage leads the individual to making a decision whether to adopt or reject the innovation. At this stage, individuals facilitate the trial of innovations to speed up the rate of adoption. Field experiments conducted by Klonglan (as cited in Rogers, 1995), found that free trial of a new weed spray increased the innovation-decision period by one year.
4. The implementation stage occurs when an individual puts an innovation to use. The change agents' role is defined at this stage as the one to provide technical assistance as the adopter begins to use the innovation. At this stage the innovation may change and evolve during the diffusion process. Rogers (1995) refers to this concept as re-invention that is defined as the degree to which an innovation is changed or modified by a user in the process of its adoption and implementation. Flexibility in the process to adopt may reduce mistakes and encourage the customization of the innovation to fit the needs of the adopter.
5. Confirmation occurs when an individual seeks reinforcement of an innovation-decision already made, or reverses a previous decision to adopt or reject an innovation if exposed to conflicting messages about the innovation (Rogers, 1995, p. 181).

Jacobsen (2000) used the categories of knowledge, persuasion, decision, implementation, and confirmation to study the relationship between excellent teaching and early adopters of technology. In the case-by-case approach, the researcher profiled faculty members who were identified as early adopters of technology and recognized as excellent teachers. The collection of narrative summaries of their teaching practices and technology use were meant to be useful for sharing with others. Jacobsen found that the faculty members possess many of the characteristics as outlined by Rogers (1995). A

comparison of the interviews was conducted to see if there were other similarities between the members. The comparison of the narratives revealed that early adopters have both common and unique (a) values, beliefs and characteristics; (b) expectations about outcomes and benefits from integrating technology; (c) integration processes to attain outcomes; (d) specific instructional strategies that support educational processes, and (e) motivators and impediments to integrating computer technology.

Conditions for Implementing an Innovation

Extensive research conducted by Ely (1999) on the implementation of instructional innovations produced eight conditions that help with the successful implementation of an innovation. The eight conditions are:

1. Dissatisfaction with the status quo – there must be a need to change;
2. Knowledge and skills – must assess current knowledge and skill levels;
3. Adequate resources – certain resources must be readily available (e.g., funding, personnel, hardware, software, etc.);
4. Time – must have adequate time to commit to training;
5. Rewards or incentives – these are motivating factors that encourages implementation;
6. Participation – there must be shared decision making and planning;
7. Commitment – visible support must be evident; and
8. Leadership – must have supportive leaders involved (1999).

Attention to these factors at the adoption and developmental stages of an innovation help to increase implementation of a new idea or innovation. Surry and Ensminger (2002) tested the eight conditions with instructional technology professionals using a questionnaire of hypothetical innovation scenarios. The results substantiated Ely's eight conditions as being primary to the implementation of an innovation. Wilson and Peterson (1995) used the same eight conditions to study the possibility of implementation of computers and software instead of books at an elementary school in Colorado and found the conditions were in alignment with Ely's framework.

Using diffusion concepts that Burkman (as cited in Surry & Ely, 2002) refers to as "user-oriented instructional development" places the development of a proposed technology mentoring program into a more user-friendly environment for implementation

in K-12 instructional environments. A proposed technology mentoring program has the potential for becoming a more usable product for K-12 environments; because it will incorporate the elements derived from the literature.

Summary

This literature review presented a historical overview of the influence of technology in education by looking at the historical overview of technology influence in the classroom; an examination of facilitators that enhance the use of technology; a review of mentoring as a professional/staff development strategy; and the Diffusion of Innovations theory. The literature on mentoring identified several components associated with successful mentoring programs. These components were prevalent in different types of mentoring programs and have been identified as important elements useful in the development of mentoring programs. Aligning the mentoring components with the theory components can produce a successful technology mentoring program for K-12 instructional environments. A review of the literature has produced evidence that supports a theory-based procedural guide or "how to" guide used to create a technology mentoring program.

The use of technology mentoring can be an effective tool for promoting practices to improve teacher technology use in the classroom. The characteristics and diffusion components identified in the literature should be integrated throughout the development process to create a successful mentoring program. Incorporating the primary components of diffusion of innovations throughout the development process should help minimize decisions not to accept the technology mentoring program as a feasible product (Surry & Ely, 2002). With these elements in place, a more feasible staff development strategy is likely to promote teacher technology use in the classroom.

CHAPTER THREE

Methodology

This section will describe the development and evaluation process used in the creation of a technology mentoring program. The program will eventually be diffused into an existing educational environment as a staff development strategy designed to assist K-12 teachers with integrating technology into the teaching and learning process.

Statement of Purpose

The purpose of this study was to utilize the developmental research approach to develop a technology mentoring program for K-12 instructional environments based on Rogers' Diffusion of Innovations theory (1995). The study resulted in a written theoretically-based Technology Mentoring Program that can be implemented as a successful staff development strategy for K-12 instructional environments. Rogers' (1995) Diffusion of Innovations theory has been utilized in a variety of settings to: diffuse concepts to develop checklists; evaluate programs; identify and analyze specific factors; and to develop methods more oriented to the users' needs (Farquhar & Surry, 1994; Stockdill & Morehouse, 1992). A review of the diffusion process in the field of instructional design and technology by Surry and Ely (2002) found that many of the theory components help to influence the rate of adoption when the components are applied throughout the development process.

Research Design

Developmental research is "the systematic study of designing, developing and evaluating instructional programs, processes and products that must meet the criteria of internal consistency and effectiveness" (Seels & Richey, 1994, p. 127). Richey, Klein and Nelson (2004) have identified two distinctive types of developmental research as Type 1 and Type 2 with each type applying emphasis in different areas of a research project. Type 1 emphasis lies in the "study of a specific product or program design, development, and/or evaluation projects;" and type 2 is a "study of design, development, or evaluation processes, tools, or models" (p. 1217). The primary focus of developmental research projects includes a description, analysis, and evaluation of the final product (Richey et al., 2004). This study is characteristic of a Type 1 that focuses on the development and evaluation process of a technology mentoring program. The developmental process used

in this research was conducted utilizing three phases: (a) Phase One - The design and development; (b) Phase Two - Formative evaluation; and (c) Phase Three - Revision Process.

Research Goals

This research project sought to accomplish the following goals:

1. Develop a technology mentoring program for K-12 environments based on Rogers' Diffusion of Innovations theory; and
2. Identify theoretical and practical considerations for implementing a technology mentoring program based on the Diffusion of Innovations theory.

Phase One – Design and Development

Phase One began with a review of the literature on technology use in educational environments, mentoring, and the Diffusion of Innovations theory. Dick, Carey and Carey (2001) encourage instructional designers to conduct needs assessments to determine what problems exist and then based upon what has been learned, find solutions to solving the problem. This developmental project deviated slightly from the systematic approaches normally used by instructional designers when developing instructional materials. The final product will not be used for instructional purposes, but rather, for future implementation of a technology mentoring program. As with any product development, it is wise to conduct a needs assessment to determine whether or not there is a need for the proposed product. In this case, much of the front-end analysis was conducted prior the start of this research as part of a Technology Innovation Challenge Grant which will be elaborated on in Phase Two – Formative Evaluation.

Using the primary components of the Diffusion of Innovations theory (Rogers, 1995) a technology mentoring program was developed as an innovative strategy to assist novice technology using teachers with gaining the necessary experiences for using technology in the classroom. The primary components of the diffusion of innovations theory are the innovation, communication, time and the social system. Figure 2 displays a visual representation of Phase One.

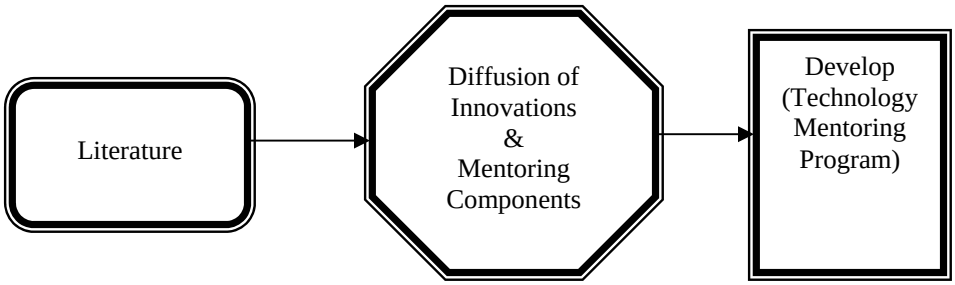

Figure 2. Phase One process.

Component Alignment

A review of literature identified primary mentoring components necessary for the development of successful mentoring programs as goals and objectives, evaluation process, selection process, and training (Bey & Holmes, 1992; Kittler, 1994; Mills, Moore, & Keane, 2001). These components were aligned with the primary components of Rogers' Diffusion of Innovation theory to systematically develop a technology mentoring program for K-12 instructional environments. In conjunction with the alignment, questions were generated to develop a questionnaire for the evaluation of the technology mentoring program. The evaluation instrument will be discussed in Phase Two – Formative Evaluation. A discussion of the theory components aligned with mentoring are discussed in the following section.

Innovation

An innovation is "an idea, practice, or object that is perceived as new by an individual" (Rogers, 1995, p. 11). The technology mentoring program is identified as the new innovation to be used in the K-12 instructional environment to support teachers' use of technology by partnering technology-using teachers with less experienced technology-using teachers. There are five characteristics typically associated with an innovation that explain users' rate of adoption. The five characteristics are (Rogers, 1995):

1. Relative advantage – this addresses how the innovation is perceived by others as being better than the previous one used;
2. Compatibility – this is the extent to how consistent the potential users' values, needs, and experiences are toward the innovation;

3. Complexity – this is the extent to how difficult the innovation is to understand and use;
4. Trialability – this is the extent to which the innovation can be experienced before accepting it fully; and
5. Observability – this refers to the way potential users see the value and benefit of the innovation to them.

The first program components of the Technology Mentoring Program to be addressed are *goals* and *objectives*. An innovation usually begins with a problem or need for a new innovation or idea (Rogers, 1995). There is a national need for all teachers to demonstrate technology proficiency and to use it in the teaching and learning process. A survey of stakeholders can provide the necessary information required to establish goals and objectives. The identification of well-established goals and objectives for a technology mentoring program can address the need for the development of such a program to aid the use of technology in the classroom (Bey & Holmes, 1992; Kittler, 1994).

There are several questions that can be used to insure appropriate *goals* and *objectives* are clearly defined for the technology mentoring program. These questions may address whether or not the objectives are clearly defined and aligned with the school's technology mission and investigate whether there is a similar program already in existence. The questions will serve as a basis for the preparation of an evaluation tool to assess the technology mentoring program.

Communication

The communication channel refers to how information flows between and among the members of a social system. There are two forms of communication channels used to transmit information; mass media and interpersonal channels (Rogers, 1995).

Mass media channels. This is the transmission of information through mass media formats such as radio, television, journals, newspapers, telecommunications, etc. Information distributed in this manner usually occurs rapidly; but lacks credibility and trustworthiness in the transference of information (Rogers, 1995).

Interpersonal channels. This is the information exchange via face-to-face between two or more members of the social system. This method according to Rogers (1995) is much slower than the mass media; yet, it is more effective.

The next program component for the technology mentoring program is *channels of communication*. The information about an innovation must be transmitted to other members of the social system utilizing a variety of formats. Transmission of the information may include mass media sources such as: electronic communications, television, radio, newspapers, newsletters, etc. This form of communication can reach large audiences quickly; however, a more effective form of communication is the face-to-face approach. This approach allows for immediate feedback between members of the social system.

The questions that can be applied to this component addressed whether there are mass communication resources available at the schools and how they can be used to transmit information. Table 6 is a visual representation of Communication aligned with the channel of communication program component.

Table 6

Communication and program component

Innovation Component	**Mentor Program Component**	**Questions**
Communication		
"the process by which participants create and share information with one another in order to reach a mutual understanding" (Rogers, 1995, p. 17).	*channels of communication	1. Are there resources available that will allow for immediate exchange of information throughout the social system? 2. Are directions available to address the distribution of information?
Literature	Bey & Holmes, 1992; Kittler, 1994	

Time

Time addresses how long it takes for the innovation to catch on within the social system and how it can be diffused over time. The diffusion process occurs in three ways:

the innovation-decision process, the innovativeness of the individual or social system; and the rate of adoption (Rogers, 1995).

Innovation-Decision Process. This process addresses the moment of initial awareness of the innovation to the adoption of the innovation by the member of the social system. According to Rogers (1995), the process can be taken in five steps:

1. Knowledge – which is the earliest awareness a potential users has and the understanding of how the innovation operates;
2. Persuasion – occurs once the potential user forms an opinion about the innovation;
3. Decision – happens when the user moves toward making the choice to either adopt or reject the innovation;
4. Implementation – occurs when the user begins to use the innovation; and
5. Confirmation – will occur when the user seeks reinforcement of their decision to use the innovation.

Innovativeness. This refers to the degree the user will adopt the innovation more quickly than the other members of the social system. Rogers (1995) categorizes the user into one of five adopter categories: innovators, early adopters, early majority, late majority, and laggards.

Rate of adoption. This usually increases as the user gain more knowledge about the innovation. The more exposure to the use and familiarization of the technology through participation in the technology mentoring program the rate of adoption increases (Rogers, 1995).

Training Support. The next program component for the technology mentoring program is *training support*. An individual can gain enough knowledge about an innovation to form conclusions as to the adoption or rejection of the innovation. The technology mentoring program was developed to offer training opportunities to support the needs of all members of the social system. Adequate time and training must be available to allow individuals the opportunity to familiarize themselves with members of the social system as well as the innovation. To effectively accept the innovation, training support must be defined and endorsed by all stakeholders.

The questions applied to this component include the establishment of on-site training sessions; guidelines and quantity of sessions to be offered; and knowing which resources will be available. Table 7 is a visual representation of the *Time* component aligned with the program component of *training support*.

Table 7

Time and program component

Innovation Component	**Mentor Program Component**	**Questions**
Time		
Refers to the length of time involved in the innovation-decision process and the amount of time it takes to adopt the new innovation (Rogers, 1995).	Training Support	1. Are directions for establishing on-site training addressed? 2. Are there guidelines as to the number of training sessions to be offered? 3. Are there other resources available for training purposes?
Literature	Kittler, 1994; Mills, Moore, & Keane,2001	

Social System

The social system is defined as "a set of interrelated units that are engaged in joint problem solving to accomplish a common goal" (Rogers, 1995 p. 23). The pattern arrangement of the social system plays a major role in the success and rate of diffusion. The social system structure determines who within the system will influence the potential users of an innovation. The role of some members within the social system is more influential than others. The opinion leader is one such individual who is more likely to influence other users of the innovation. These individuals are usually at the core of the communication networks among the social system and are sometimes recognized as the point of contact for change agents. Change agents are usually those individuals who will influence members of the social system to partake of the new idea or innovation that has been introduced to the members (Rogers, 1995).

The program component includes all members of the social system, in this case: *the mentor/mentee; the program coordinator; and administrators*. Each member of the social system is responsible for finding ways to solve problems and meet mutual goals.

Rogers (1995) predicts a variety of personalities will emerge from the social system to become change agents and opinion leaders. The change agents are usually those individuals seeking to influence the adoption of the new innovation and the opinion leader takes on the role of providing information and advice.

Questions rising from this component include the identification of selection criteria for the mentors and mentees; the types of support systems available; responsibilities defined for all members; and the selection of a program coordinator. Table 8 is a visual representation of *Social System* aligned with the mentoring program component.

Table 8

Social system and program component

Innovations Component	**Mentor Program Component**	**Questions**
Social System		
(Teachers, Administrators, Specialists, and Partnerships) "interrelated units that are engaged in joint problem-solving to accomplish a common goal" (Rogers, 1995, p. 23).	Mentor/mentee selection process Program coordinator Administrators	1. Are there instructions available to support the selection criteria for mentors and mentees? 2. Are selection procedures in place for the program coordinator? 3. Are responsibilities clearly defined for all members of the social system?
Literature	Bey & Holmes, 1992; Mills, Moore, & Keane,2001	

Technology Mentoring Program Content

Content for the technology mentoring program came directly from a review of the mentoring literature and includes approaches, components, procedures, and activities found in different types of mentoring programs. The evaluation instrument includes questions generated as a result of the literature to evaluate the technology mentoring program.

Phase Two – Formative Evaluation

A formative evaluation of the technology mentoring program was conducted utilizing the experiences of individuals currently serving as teachers, administrators, and technology specialists in instructional environments in Virginia. These participants made decisions as to whether a program of this type was feasible and conducive for K-12 environments.

Participants. The selection of participants was done using the purposeful selection method, whereby participants are selected based on the knowledge and purpose of the research study (Babbie, 2001). The participants in this study are K-12 teachers, administrators, technology specialists, technology coordinators, and Higher Education faculty who comprise an existing group called the K-18 Instructional Technology Advisory Group. This group is representative of two K-12 school systems in central Virginia and two institutions of higher education also located in Virginia. The K-18 Instructional Technology Advisory Group was created in support of a Department of Education Technology Innovation Challenge Grant funded to address the needs of teacher training and use of technology in the teaching and learning process. The members of the K-18 Instructional Technology Advisory Group were selected in two ways; they were nominated and selected by representatives in their respected school system; and selected by the Project Director of the Technology Innovation Challenge Grant. The Project Director supplied a predetermined number of "slots" on the Advisory committee for each school system and asked key personnel to nominate individuals to serve. One school system supplied the Director with a list of nominees of which the Project Director made the selection based on finding a mix between grade levels and disciplines. The other school system nominated individuals and presented the names to the director (N. Franklin, personal communication, September 30, 2003). The participants represent a cross section of teachers, administrators, and technology specialists who are affiliated with K-12 instructional environments. As members of the K-18 Instructional Technology Advisory Group, these participants are expected to attend technology workshops with the expectation that they will return to their respective environments to serve as mentors to others. The purpose of the K-18 Instructional Technology Advisory Group is to:

1. Mentor and develop selected K-12 teachers, specialists, or administrators in the abilities to evaluate new products and technology for application into classroom instruction and into learning beyond the classroom; and
2. Create or enhance a knowledge base and community setting in which K-12 teachers, specialists, and administrators can continue to innovate creative applications of technology in support of high standards (N. Franklin, personal communication, September 30, 2003).

In addition, there are two objectives the Technology Innovation Challenge Grant aspires to achieve through the K-18 Instructional Technology Advisory Group (N. Franklin, minutes, October 30, 2003):

1. To expose teachers, specialists, and administrators to the latest technology and in turn have them take that knowledge back into the schools; and
2. Serve as a forum for people to come together to share ideas and collaborate.

This research project sought to provide the group with a proposed technology mentoring program designed to address the goal of exposing teachers, specialists, and administrators to the latest technology and, in turn, have them take that knowledge back into the schools. As participants in this research project, the members of the K-18 Instructional Technology Advisory Group were able to provide first-hand information as to the feasibility of a technology mentoring program in their respected K-12 instructional environments. The participants were informed that taking part in this research was a voluntary act and that the responses they provide would remain confidential. Prior to any data collection, an Institutional Review Board (IRB) Form and supporting documents were submitted through the appropriate channels for approval (Appendix A). Upon IRB approval, all participants were required to acknowledge and sign the Informed Consent Form.

Data collection and analysis. A three-part questionnaire was developed to ascertain the participants' feedback to the design, content, feasibility of the technology mentoring program, and demographic information (Appendix B).

Part I: Technology Mentoring Program Content. This part of the questionnaire was used to collect the participants' responses about the content, clarity and understanding of each of the primary areas of the technology program in relation to the

diffusion of innovations components. Using a semantic differential technique for Likert scale items (Gall, Gall, & Borg, 2003), participants were asked to rate each of the numbered items based on bipolar adjectives. The researcher described and reported the results. A five-point scale was used where one was the lowest and five was the highest (Gall, Gall & Borg, 2003; Suskie, 1996). Part I was subdivided into six sections: (a) Section 1: Overview and Preparation; (b) Section 2: Program Goals and Objectives; (c) Section 3: Recruitment and Selection Process; (d) Section 4: Training; (e) Section 5: Evaluation Process; and (f) Section 6: Supplemental Documents. Each section was designed to ascertain pertinent information about the clarity and understanding of the textual statements used in the technology mentoring program booklet.

Section 1: Overview and Preparation solicited responses to the amount of detail provided in the Technology Mentoring Program booklet; the responsibilities and roles o the Advisory Committee members; how information about the program should be distributed; suggested incentives and timeline for the program. Section 2: Program Goals and Objectives required participants to provide responses to the clarity of the written goals and objectives; the table displaying the objectives; and the activities listed in support of the objectives. Section 3: Recruitment and Selection Process included items related to the job description of the Program Coordinator; mentor and mentee characteristics used during the selection process; mentor and mentee selection criteria; mentor and mentee expectations; and the clarity of information found within recruitment flyers. Section 4: Training focused on the description and topics of the mentor training sessions; the description of the mentor and mentee initial training session topics and scheduling outline. Section 5: Evaluation Process dealt with the clarity and understanding of the items used to evaluate the technology mentoring program. Section 6: Supplemental Documents solicited response regarding the documents used to support the program.

Part II: Feasibility of Mentoring Program. This section contained open-ended questions to ascertain in-depth information about the feasibility of the program for use in K-12 instructional environments. The data was coded by emerging themes and categories (Creswell, 2003; Suskie, 1996).

Part III: Demographics. The demographics section was geared towards the collection of demographic data and participants' experiences in the K-12 instructional environments. This data is reported descriptively in the Results chapter.

Procedures

The three-part questionnaire was distributed electronically and in hardcopy format to the 16 participants who agreed to participate. The package to each participant included the Informed Consent Form, Technology Mentoring Program booklet, Technology Mentoring Program Questionnaire, Instruction Letter, and a stamped self-address envelope. The participants were given two weeks to use the three-part questionnaire to evaluate the program.

The director of the Technology Challenge Grant provided a list of electronic mail addresses and business addresses for the 16 members of the K-18 Instructional Technology Advisory Group. Upon receipt of the addresses, the researcher prepared the materials for distribution. An electronic version of the questionnaire was used to obtain rapid responses from the participants (Bachmann, Elfrink, & Vazzana, 1999; Gall, Gall, & Borg, 2003; Sheenan & McMillan, 1999). A comparison of paper surveys to electronic surveys and questionnaires was conducted by Tse (1998) who found that email surveys were cheaper, faster in transmission, encouraged respondents to respond, and was less likely to be ignored as junk mail. A hardcopy of the questionnaire was also provided for those participants who may experience computer difficulties or who prefer to respond via mail.

Prior the distribution of the technology mentoring program questionnaire to the participants, a pilot test group of three instructional technology graduate students reviewed the contents of the Technology Mentoring Program for design, clarity and understanding. The Technology Mentoring Program Questionnaire was examined by a K-12 administrator, a teacher, and a higher education faculty for clarity and understanding. Feedback from both groups of individuals were incorporated into each of the separate items and then distributed to the participants.

Phase Three - Revision

Once the technology mentoring program was reviewed and evaluated by the K-18 Instructional Technology Advisory Group, it entered the revision process. This process

included the suggestions, recommendations, and/or modifications generated to improve the effectiveness of the technology mentoring program (Dick, Carey, & Cary, 2001; Reiser & Dempsey, 2002). These revisions included the results of data collected from Phase Two and appear in the results section of this dissertation.

Proposed Timeline

The proposed timeline for this study is shown in Table 9.

Table 9

Timeline

Phase	**Date**	**Comments**
Phase One	5/20/04 – 7/20/04	▪ Design & development of technology mentoring program
Phase Two	10/04/04 – 10/16/04	▪ Distribute instrument & mentoring program to participants ▪ Collect & begin coding data
Phase Three	10/17/04 – 1/5/05	▪ Analyze the data ▪ Revise/modify technology mentoring program ▪ Prepare final written document

CHAPTER FOUR

Technology Mentoring Program Development

The literature revealed primary components for structuring a mentoring program should include the establishment of goals and objectives, selection process, training, and evaluation (Bey & Holmes, 1992; Kittler, 1994; Mincemoyer & Thomson, 1998; Mills, Moore, & Keane, 2001). Although, a number of mentoring programs have been established incorporating these components; the challenge for this study was to align diffusion theory to develop a successful technology mentoring program to supplement K-12 staff development strategies.

The technology mentoring program resulted in a written document which took on the form of a booklet. Using Microsoft® Word, the technology mentoring program booklet was created incorporating the mentoring components and the Diffusion of Innovations theory components (Rogers, 1995). The booklet is divided into six sections: (a) Section 1: Overview and Preparation; (b) Section 2: Program Goals and Objectives; (c) Section 3: Recruitment and Selection Process; (d) Section 4: Training; (e) Section 5: Evaluation Process; and (f) Section 6: Supplemental Documents.

Section 1: Overview and Preparation

Rogers (1995) suggests that an innovation must be communicated over time among the social system if acceptance of that innovation is to that place. Prior to the acceptance of the technology mentoring program as a new innovation the social system must be given specific information about the innovation. The overview and preparation section of the technology mentoring program includes a description of the program; responsibility and role of the technology mentoring advisory committee; the distribution of program information; suggested program incentives; and a program timeline (Appendix C).

Providing the social system with a detail description of the program was essential for introducing the newly developed Technology Mentoring Program to all interested parties. An overview of the technology mentoring program was needed to provide pertinent information to inform interested parties of the program and its benefits to the entire social system.

The technology mentoring advisory committee responsibilities and roles were added to clearly outline the role each will play in the decision-making process for the implementation of the technology mentoring program. This process is also referred to as the innovation-decision process whereby members are concerned with gathering information to gain a better understanding of the technology mentoring program in order to give it meaning (Rogers, 1995).

The distribution of information among members of the K-12 instructional environment includes the use of mass media and interpersonal channels. Rogers (1995) contends the use of various forms of communication serves as an effective element towards the diffusion of an innovation among the members of a social system. A list of suggested distribution formats were included to allow for diverse means of communication.

Suggested incentives were included to encourage K-12 teachers' participation in the technology mentoring program. Different forms of incentives can be useful when trying to encourage others to use and adopt an innovation. In addition, an overview of the timeline of activities was incorporated to allot adequate time for introducing and using the new innovation (Rogers, 1995).

Section 2: Program Goals and Objectives

This section includes recommended goals and objectives mentors and mentees can accomplish as part of their participation in the program (Appendix D). A detailed outline of activities for meeting specified objectives is included. In addition to the detailed activities, suggestions are provided as to how the objectives will be measured and the responsibility of the program coordinator, the mentor and mentee in this process. These defined responsibilities encourage meaningful relationships among the mentors and mentees (Mincemoyer & Thomson, 1998).

The researcher generated specific goals and objectives that emphasized the use of technology using teachers paired with novice technology using teachers to encourage technology use in the classroom. Adding specific goals and objectives becomes a degree of relative advantage because it offers teachers a better way of accomplishing a task (Rogers, 1995).

Section 3: Recruitment and Selection Process

This section includes a detail job description for the technology mentoring program coordinator; mentor/mentee characteristics; mentor selection criteria; mentee selection criteria; recruitment of mentors and mentees; and mentor and mentee expectations (Appendix E).

The job description for the program coordinator includes a detailed listing of responsibilities based upon the characteristics Rogers (1995) describes for early adopters of an innovation. As the primary motivator and change agent this individual must be able to encourage participants in the program. This section also includes a list of characteristics mentors and mentee should possess to ensure a successful relationship (Adams, 1998; Galbraith & Maslin-Ostrowski, 2000; Mincemoyer & Thomson, 1998; Wittenberg, 1998; Young & Wright, 2001). A selection criterion was added to recruit mentors and mentees for the program (Bey & Holmes, 1992; Ganser, 2000). Mentor and mentee expectations are added to provide a clear understanding as to what is expected of each participant in the program (Mincemoyer & Thomson, 1998).

Section 4: Training

This section includes recommended topics to be covered during a one day mentor training session and a detailed scheduling outline of activities for the Mentor/Mentee Initial Training Session (Appendix F).

Training will provide opportunities for teachers to obtain hands-on experiences using technology to develop instructional materials for use in the classroom. Detailed instructions are provided for the training sessions. A one day training session for mentors was incorporated to focus on the development of effective mentoring skills (Bey & Holmes, 1992; Mincemoyer & Thomson, 1998).

Providing adequate time for the mentor and mentee to immerse themselves as active participants of the program is essential for the success of the program. Prior to the acceptance of the technology mentoring program as a vital staff development strategy, it must be seen by both the mentor and mentee as a beneficial factor (Bey & Holmes, 1992). Spending time exploring and working collaboratively to create technology generated activities provides the mentors and mentees an opportunity to share ideas that would lead to continued participation in the program (Rogers, 1995).

The Mentor/Mentee Initial Training Session was incorporated into the program to pair mentors and mentees. This training session provide an overview of the technology mentoring program, the distribution of forms and activities, opportunity for mentors and mentees to begin developing relationships, and to collaboratively plan action for how they will complete the objectives of the program (Ganser, 2000; Kittler, 1994; Wittenberg, 1998; Young & Wright, 2001). The primary focus of this initial meeting is to serve as an orientation for the mentor and mentee.

Section 5: Evaluation Process

Evaluation of the Technology Mentoring Program is vital towards the effectiveness of the program. Instructions are included in this section (Appendix G) as to when specific evaluation tools will be distributed and collected. The evaluation tools include: mentor/mentee log sheets; instructional materials evidence sheet; and the mentoring feedback form. The evaluation process is an on-going process with varied evaluation activities being conducted throughout the implementation of the technology mentoring program (Odell, 1992; Whittaker & Cartwright, 2000).

Section 6: Supplemental Documents

A centralized location for the documents used to support the technology mentoring program was generated to provide ease when searching for these documents (Appendix H). The compilation of supplemental documents provides pertinent information for the program coordinator as the overseer of the program. This section includes the following documents: (a) Mentoring Feedback Form; (b) Technology Mentor/Mentee Log Sheets; (c) Instructional Materials Evidence Sheet; (d) Technology Mentor Application; (e) Mentor/Mentee Action Plan; (f) Mentors Recruitment Flyer; (g) Mentees Recruitment Flyer; and (h) The Initial Training Session for Mentors & Mentees Flyer.

Development of the Technology Mentoring Program Questionnaire

The following section describes the development process for the questionnaire used to evaluate the program. The questionnaire consisted of 36 items and was divided into three major parts: (a) Part I – Technology Mentoring Program Content; (b) Part II – Feasibility of Mentoring Program; and (c) Part III – Demographics.

Questions emerging from the literature were used to create the questionnaire and evaluate the product. Table 10 displays a visual representation of each part of the questionnaire, the questionnaire items, and theory components. The table shows where in the questionnaire the theory can be seen throughout the evaluation process.

Table 10

Questionnaire items, location and diffusion components

	Diffusion Components			
Location	**Innovation**	**Communication**	**Time**	**Social System**
Part I				
Section 1 Overview & Preparation	See item # 1, 5	See item # 4	See item # 6	See item # 2, 3
Section 2 Program Goals & Objectives	See item # 1, 2, 3, 4			See item # 3, 4
Section 3 Recruitment & Selection		See item # 6, 7		See item # 1, 2, 3, 4, 5, 8
Section 4 Training	See item # 1	See item # 2	See item # 1, 3, 4	See item # 2, 3
Section 5 Evaluation Process	See item # 1, 2	See item# 1, 2, 3, 4	See item # 1, 2, 3, 4	See item # 1, 2, 3, 4
Section 6 Supplemental Documents	See item # 1	See item # 1	See item # 1	See item # 1
Part II				
Effectiveness	See item # 1	See item # 1	See item #1	See item # 1
Recommendations	See item # 2	See item # 2	See item # 2	See item # 2
Specific issues	See item # 3	See item # 3	See item # 3	See item # 3
Part III				
Demographics				See item # 1, 2, 3, 4, 5, 6

The 36-item questionnaire was created using the web based research software, SurveyMaker™. This program allowed for online distribution and collection of questionnaire data. Part I of the questionnaire required a response where one was the

lowest and five was the highest. An example of questionnaire items found in Section 1 is shown in Table 11. Participants also had the option of inserting comments for each item in the comments section immediately following the item.

Table 11

Example of questionnaire item in Section 1

Questionnaire Item	**Section 1** **Overview and Preparation**	
Insufficient	1 2 3 4 5	Sufficient
1. The amount of detail provided in the Technology Mentoring Program is		
Comments:		

Part II of the questionnaire consisted of three open-ended questions, prompting the participants to provide in-depth information for the feasibility of a Technology Mentoring Program. An example of an open-ended item found in Part II is shown in Table 12.

Table 12

Example of open-ended items in Part II

Open-ended Item	**Part II – Feasibility of Mentoring Program**
How effective would this proposed Technology Mentoring Program be in your school environment? Why?	

Part III of the questionnaire consisted of six demographic items used to describe the participants. These items included the participants' current role; number of years in education profession; capacity served as a mentor; gender; ethnicity; and age.

Summary

This chapter described the development of the Technology Mentoring Program and the Technology Mentoring Program Questionnaire used to evaluate the program. The development of these two items consists of an alignment of mentoring and diffusion

components. The Technology Mentoring Program contained six sections: (a) Section 1: Overview and preparation; (b) Section 2: Program goals and objectives; (c) Section 3: Recruitment and selection process; (d) Section 4: Training; (e) Section 5: Evaluation process; and (f) Section 6: Supplemental documents. The content for the questionnaire items were developed from these six sections.

The Technology Mentoring Program Questionnaire contained 36 items divided into three parts: (a) Part I: Technology mentoring program content; (b) Part II: Feasibility of mentoring program; and (c) Part III: Demographics. The primary purpose of the questionnaire was to insure content accuracy and understanding, to obtain feedback as to the feasibility of such a program and to identify potential stakeholders. The results of the questionnaire will be reported in the Results chapter of this study.

CHAPTER FIVE

Results

This chapter will report the results of Phase Two – Formative Evaluation; it will include a description of the participants; the results of the technology mentoring program content; and reports the findings of the feasibility of a mentoring program. Each of these sections includes the questionnaire items and the participants' responses for demographics, technology mentoring program content and the feasibility of the mentoring program. Results of the revision process are also included.

Demographics

The initial population consisted of 16 members of the K-18 Instructional Technology Advisory Group; 11 participated in the study. The participants were asked to select all positions that applied to their current role; as a result, they served in positions of administrators, technology coordinators, K-12 teachers, and higher education faculty.

The majority of the participants (6 of 11) indicated they have been an education professional for 11 to 15 years. The ages ranged from 30 to 49 years or older. The majority (5 of 11) were between 40 to 49 years of age. Four of the participants were between the ages of 30 to 39 years. The majority of the participants (8 of 11) were females.

Participants were asked to select all capacities where they served as a mentor. The options included: peer mentor, teacher-student mentor, induction teacher mentor, none and other. Four of the participants indicated they never served in any mentor capacity, while the remaining participants indicated they had served as a peer mentor (6), teacher-student mentor (4), and induction teacher mentor (3).

Part I: Technology Mentoring Program Content

This section will describe the results of Part I: Technology Mentoring Program Content by section. The six sections include Section 1: Overview and Preparation; Section 2: Program Goals and Objectives; Section 3: Recruitment and Selection Process; Section 4: Training; Section 5: Evaluation Process; and Section 6: Supplemental Documents.

Section 1: Overview and Preparation. There were six items in this section which sought to obtain responses to the detail of information in the Technology Mentoring

Program; advisory committee member responsibilities and roles; distribution of information; incentives; and program timeline. Table 13 contains the number of responses to Section 1 by item and rating.

Table 13

Section 1: Overview and Preparation

	Rating				
Questionnaire Item	1	2	3	4	5
(Insufficient ---------- Sufficient) 1. The amount of detail provided in the Technology Mentoring Program is				2	9
(Unclear ---------- Very Clear) 2. The Advisory Committee responsibilities are				2	9
(Unclear ---------- Very Clear) 3. The Advisory Committee member roles are				1	10
(Unclear ---------- Very Clear) 4. The distribution of program information is			1		10
(Inappropriate ---------- Appropriate) 5. The program incentives are	1	1	1	1	7
(Inappropriate ---------- Appropriate) 6. The suggested timeline is		1	1	3	6

All of the participants felt the amount of detail provided in the program was sufficient, indicating the more detail provided the more effective it will be to implement the program. The participants (11) felt the Advisory Committee responsibilities and roles were clear to very clear, indicating the information provided was well understood. Ten of the participants felt the distribution of program information was very clear and one felt the distribution information was somewhat clear. This is an indication that the suggested distribution items are feasible for the program. Eight of the participants felt the recommended incentives were appropriate items for the program, while three felt the

recommended items were less than appropriate. Indicating incentives are important items for the program. Nine of the participants felt the suggested timeline of activities were appropriate and two felt the activities were somewhat to less than appropriate. This is an indication that a suggested timeline of activities is helpful for the implementation of the program. The participants had the option of providing additional comments for each item. Comments from the participants in response to program incentives (item 5) included, "There isn't much of an incentive to participate;" "Where will funding come from to support incentives?" and "I believe you need less expensive incentives." The majority of participants responded in the positive areas, indicating the content and the amount of content provided in the overview and preparation section of the program was deemed sufficient and appropriate.

Section 2: Program Goals and Objectives. The participants responded to four items regarding program goals; objectives; a table containing information about the objectives; and activities listed to support objectives. Table 14 contains the responses to Section 2: Program Goals & Objectives.

Table 14

Section 2: Program Goals & Objectives

	Rating				
Questionnaire Item	1	2	3	4	5
(Unclear ---------- Very Clear) 1. The program goals are				2	9
(Unclear ---------- Very Clear) 2. The program objectives are				2	9
(Unclear ---------- Very Clear) 3. The information displayed in the Meeting the Objectives table on page 10 is				2	9
(Inappropriate ---------- Appropriate) 4. The activities listed to meet the objectives seem			2	2	7

The participants (11) felt the goals and objectives were clear, indicating the list of goals and objectives are vital to the success of the technology mentoring program. All of the participants felt the information displayed in the *Meeting the Objectives* table was

clear. Two of the participants felt the activities listed to meet the objectives were not as appropriate as the nine who felt the activities were appropriate, indicating the suggested list of activities seemed vital to the implementation of the technology mentoring program. Participants provided additional comments for item 4, “Activities are varied to meet different skill levels;” “Don’t suggest specific software like Webquest;” and “Too wide-ranging, suggest you remove the more basic options and replace with more sophisticated uses of technology.”

Section 3: Recruitment and Selection Process. There were eight items in this section. The items solicited responses pertaining to job description of program coordinator; mentor and mentee characteristics; mentor and mentee selection criteria; information displayed in mentor and mentee recruitment flyers; and mentor and mentee expectations. Table 15 contains the responses to the items in Section 3.

Table 15

Section 3: Recruitment and Selection Process

	Rating				
Questionnaire Item	1	2	3	4	5
(Not Useful ---------- Very Useful) 1. The Program Coordinator Job Description is				1	8
(Inappropriate ---------- Appropriate) 2. The Mentor characteristics used during the selection process seem					11
(Inappropriate ---------- Appropriate) 3. The Mentee characteristics used during the selection process seem					11
(Inappropriate ---------- Appropriate) 4. The Mentor Selection Criteria items seem				1	10
(Inappropriate ---------- Appropriate) 5. The Mentee Selection Criteria items seem				1	10
(Inappropriate ---------- Appropriate) 6. The information within the Mentors Recruitment flyer on page 32 seem			1	1	9
(Inappropriate ---------- Appropriate) 7. The information within the Mentee Recruitment flyer on page 33 seem				2	9
(Inappropriate ---------- Appropriate) 8. The Mentor and Mentee expectations seem			1	1	9

Nine of the participants indicated the job description for the program coordinator ranged from useful to very useful; two of the participants did not provide responses to this item. The responses obtained indicate the importance for a program coordinator. The participants (11) found the mentor and mentee characteristics used during the selection process to be appropriate; indicating specific characteristics are important for the selection of mentor and mentees. Eleven participants felt the recommended selection criteria items used for both the mentor and mentee seemed appropriate; indicating the importance of the selection criteria for mentor and mentees. One participant found the information contained in the recruitment flyers for mentors and mentees to be somewhat appropriate while the majority (10) found it to be appropriate. This is an indication that

the attention to detail on announcements and flyers are vital to the success of the program. Ten of the participants felt the mentor and mentee expectations seemed appropriate, indicating expectations must be established for the program. Participants provided additional comments to several of the items in Section 3; these comments are displayed in Table 16.

Table 16

Section 3 Items and Comments

Questionnaire Item	**Comments**
# 1	I question the assertion that the coordinator should attend national conferences when funding may not be available to do so.
# 6	How advanced would the mentor need to be?
# 7	I suggest greater detail about the program be included on the flyer.
# 8	I don't understand the purpose of the mentor log. Maintaining an activity log seems overly bureaucratic.

Section 4: Training. Participants' responses to four items were recorded. The items included a description of the mentor training session; topics covered in the session; description of mentor and mentee initial training; and the scheduling outline for the training. Table 17 contains the responses to the items in Section 4.

Table 17

Section 4: Training

	Rating				
Questionnaire Item	1	2	3	4	5
(Unclear ---------- Very Clear) 1. The description of the Mentor Training session seems				1	10
(Inappropriate ---------- Appropriate) 2. The Mentor Training Session topics seem			1	2	8
(Unclear ---------- Very Clear) 3. The description of the Mentor/Mentee Initial Training seems			1	1	9
(Inappropriate ---------- Appropriate) 4. The Mentor/Mentee Initial Training Session Scheduling Outline seems			1	2	8

One of the eleven participants thought the description of the Mentor Training session was clear while the remaining felt it was very clear, indicating there was sufficient detail about the training session provided. One participant felt the selection of topics for the Mentor Training Session was somewhat clear, while the remaining (10) felt the topics were very clear. The participants (10) also thought the description of the Mentor/Mentee Initial Training seemed clear to very clear, while one participant thought the description was somewhat clear; this is an indication that the information was well understood. The majority of the participants (10) felt the scheduling outline for the Mentor/Mentee Initial Training Session was appropriate, while one thought it was somewhat appropriate. Indicating the outlined sessions was appropriate for the program. Table 18 contains additional comments that participants shared about items 2 and 4.

Table 18

Section 4 Items and Comments

Questionnaire Item	Comments
# 2	Focus seems to be all on administrative responsibilities.
# 4	Suggest more emphasis on value/benefits of mentoring, effective mentoring techniques, and vision of long term results.

Section 5: Evaluation Process. Four items were contained in this section. These items addressed the items used to evaluate the program; the Mentor/Mentee Log Sheet; the content within the Instructional Materials Evidence Sheet; and the Mentoring Feedback Form. The responses to these items are found in Table 19.

Table 19

Section 5: Evaluation Process

	Rating				
Questionnaire Item	1	2	3	4	5
(Inappropriate ---------- Appropriate) 1. The items used to evaluate the program seem			1	3	7
(Not Useful ---------- Very Useful) 2. The Mentor/Mentee Log Sheet on page 25 seems	1		1		9
(Not Useful ---------- Very Useful) 3. The content within the Instructional Materials Evidence Sheet on page 26 seems					11
(Not Useful ---------- Very Useful) 4. The Mentoring Feedback Form on page 24 seem		1		1	9

Ten of the participants felt the items used to evaluate the program seemed appropriate and one felt the evaluation of the program was somewhat appropriate, indicating the evaluation of the program seemed beneficial. The Mentor/Mentee Log Sheet was found to be somewhat useful to very useful by 10 of participants, while one found the log sheets not useful for the program. The majority of participants (11) felt the Instructional Materials Evidence Sheet was very useful, indicating the Materials Evidence Sheet is a valuable source for evaluating the program. Ten of the participants thought the Mentoring Feedback Form seemed useful to very useful, while one participant thought the form was less than useful. Overall, the positive responses indicated the recommended items used to evaluate the technology mentoring program were sufficient tools for evaluation. Comments obtained from this section are displayed in Table 20.

Table 20

Section 5 items and comments

Questionnaire Item	Comments
# 1	No student input? Lots of paperwork required. I would add an evaluation from the school administrator regarding his/her perception of the overall value of the program.
# 4	Would like to see more emphasis on what they got out of the program in terms of extending effective use of technology in teaching and learning.

Section 6: Supplemental Documents. This section will describe the results pertaining to the documents used to evaluate the Technology Mentoring Program. The responses to this one item are displayed in Table 21.

Table 21

Section 6: Supplemental Documents

	Rating				
Questionnaire Item	1	2	3	4	5
(Inappropriate ---------- Appropriate) 1. The documents contained in this section as a whole seem				2	9

All of the participants felt the supplemental documents were appropriately placed in its own section of the booklet. There was one comment recorded for this item in the comments section, “This is a good idea to place all the forms and evaluation documents in one place.”

Part II: Feasibility of Mentoring Program

This section contained three open-ended items to solicit participants’ responses about the feasibility of the Technology Mentoring Program in K-12 instructional environments. Seven participants responded to item 1, *How effective would this proposed Technology Mentoring Program be in your school environment? Why?* Table 22 displays the theme and occurrences that emerged from the results of the effectiveness of a technology mentoring program.

Table 22

Emerging themes for program effectiveness

Occurrences	Theme
4	1. Very effective
4	2. Help teachers learn technology
2	3. More incentives needed
2	4. Teachers will support program
2	5. Time is demanding

The responses indicated the program would be a very effective one and will support teachers' use of technology in the classroom. Additional comments were made indicating teachers might not have the time to participate in the program due to the demands currently placed on classroom teachers; but felt that teachers would generally support this Technology Mentoring Program.

Two participants responded to open-ended item 2, *What additional suggestions or recommendations can you provide to improve this technology mentoring program?* One participant suggested emphasis is placed on the utilization of newer and more innovative technology, while the other response was geared towards obtaining evidence that the instructional technology is actually being used in the classroom.

Item 3 contained the open-ended question, *Are there any other specific issues you would like to make us aware of regarding this proposed Technology Mentoring Program?* There were two responses to this question. One response indicated the "mentor's role needs more defining and was concerned that the mentor was putting as much time as the Mentee." The final response to this item was for the researcher, "are you available to implement this program for us?"

Revisions

There were no significant revisions recommended or suggested that would impact the development of the final product. Impact revisions are those revisions deemed most important for improving the performance of the individuals planning to implement the Technology Mentoring Program (Tessmer, 1993). Therefore, the responses collected do not warrant significant changes be made to the final product; however, minor revisions

were made based on feedback from the participants. The revisions addressed (a) funding resources for the program; (b) incentives; (c) sophisticated uses of technology; and (d) the administrator's evaluation of the program. Revisions made are as follows:

1. Participants expressed concern about the availability of funding resources to support the program. To address this concern the researcher added a statement addressing funding resources as part of the Technology Mentoring Advisory Committee's responsibility in Section 1: Overview & Preparation. The bulleted statement reads: *Identify funding resources to support the program*. The same statement was also added to the Committee Member Roles for the school administrator and program coordinator.
2. Incentives were another item of concern for participants. A statement addressing the types of incentives was added to Section 1: Overview & Preparation under the Program Incentives section. The statement reads: *Incentives should be based upon the availability of resources at the particular school*.
3. Another item of concern referred to the sophisticated uses of technology. A statement was added to Section 2: Program Goals and Objectives to address this concern. The statement reads: *The specific technology that will be used for training and incorporated into the program should be congruent with the school's technology goals and resources. A needs assessment may be useful in identifying the types of technology and training teachers are interested in receiving*.
4. Input from the administrator as part of the evaluation process was another concern. A form was generated to address the administrator's evaluation of the program and was inserted in Section 6: Supplemental Documents. The form is titled, Administrator Evaluation Form. Detail information about the form was also added to Section 5: Evaluation Process.

Summary

The results from this study were expected to produce valuable information that can be used to effectively create a technology mentoring program as a strategy for on-

going staff development. The final document is a Technology Mentoring Program (Appendix I) designed as a reference guide to provide procedural steps for the development of a technology mentoring program.

CHAPTER SIX

Discussion

The purpose of this study was to develop a new innovation in the form of a technology mentoring program based on Rogers' diffusion theory (1995), to aid K-12 teachers' use of technology in the classroom. A review of literature suggests that many teachers are apprehensive about using technology in the teaching and learning process (McCannon & Crews, 2000; Williams & Kingham, 2003); while increased technology training and in-service support were found to be effective tools for encouraging teacher use of technology (Ertmer & Hruskocy, 1999). Teachers assisting teachers or mentoring with technology training was also deemed an effective staff development strategy (Chuang, Thompson, & Schmidt, 2003; Kittler, 1994). Mentoring has been utilized in diverse capacities where more experienced individuals assist less experienced individuals with developing skills and knowledge (Klasen & Clutterbuck, 2002). This form of staff development tends to provide the one-on-one training and assistance required of teachers to successfully accomplish desired goals. However, there is a lack of evidence of a step-by-step guide for developing a technology mentoring program that incorporates diffusion components (Rogers, 1995) designed to guarantee the acceptance of such a program. As a result, a developmental research approach was used to produce a theory-based procedural guide for the purpose of creating a technology mentoring program to support teacher technology training. A group of K-12 teachers, technology coordinators, higher education faculty, and administrators evaluated the feasibility of the program for future implementation.

While the program was positively received by the evaluators, the results indicate that some of the challenges to implementing the technology mentoring program are going to be related to the provision of incentives; the types of incentives used; administration of the program; the amount of paperwork involved; and how administrators are going to evaluate the program. The evaluators felt the program incorporated the indicated attributes of the diffusion of innovations.

The use of incentives to promote teacher participation in the technology mentoring program was deemed important by the participants. This is consistent with Rogers (1995), when he suggests that incentives and the types of incentives used can

speed the diffusion process of a new innovation. The administration of the program is an integral part of the implementation process and requires the leadership of an individual with well-defined characteristics. Based on the characteristics Rogers uses to categorize early adopters, the program coordinator will more than likely emerge from this group. The participants were in agreement that the evaluation of the program should be conducted using a variety of formats and that it be an on-going process (Odell, 1992; Whittaker & Cartwright, 2000). The inclusion of the school administrator's evaluation of the program helps to ensure support systems are in place; this is consistent with researchers who suggest the involvement of administrators increases the teachers' decision to use technology in the classroom (Coffland, 2000; Ritchie & Wiburg, 1994; Weber, 1996; Ronnkvist, Dexter, & Anderson, 2000). Documentation of program activities and outcomes will provide the tools needed to substantiate whether or not the program is worth continuing.

Decisions about the program and the above mentioned items will be the primary concern of the advisory committee. This group will be an important element in that they will be making decisions about what specific technologies to use and at what level, based on the specific needs of the school or school system; they will determine the selection procedures for the coordinator of the program; they will determine how the program will be evaluated and which tools will be used for the assessment; and they will decide the timeline for the program.

The program is a feasible staff development strategy that can be used to encourage teachers to use technology in the classroom. The success of the program will be dependent upon administrative support and the on-going staff development provided by the technology mentoring program. By incorporating the diffusion components inherently throughout its development, a technology mentoring program can be successfully diffused and accepted as a staff development strategy.

Contribution of Study

Studies have shown that teachers desire the need for opportunities where technology training is conducted on-site by those who understand technology use and the classroom application of technology (Coley, Cradley, & Engel, 1997; Poole & Moran, 1998; Ronnkvist, Dexter, & Anderson, 2000). This study proposes a product that can be

diffused within any K-12 instructional environment to encourage teacher technology use. By employing on-site teachers as technology mentors, teachers will have access to on-going staff development and training. This study adds to the current literature by describing and analyzing the developmental process for a theory-based program that can be diffused within an existing school system.

The study extends teacher technology training through the development of a new innovation that helps facilitate the transfer of technology skills and knowledge to the classroom. This program includes staff development activities such as modeling, demonstration, practice, coaching, and follow-up activities that help with the transfer of skills and knowledge. The inclusion of these types of activities provides for an effective staff development strategy that encourages teacher technology usage (Bradshaw, 2002; Joyce & Showers, 1995).

This study described the development of a procedural guide used to create a technology mentoring program. Using the characteristics for developmental research where a description, analysis, and evaluation are applied to the final product (Richey, Klein, & Nelson, 2004); a procedural guide emerged that included the basic elements associated with mentoring. A description of the technology mentoring program adds to the current list of developmental research products and will serve as a basis for the development of other non-instructional items.

The development of a procedural guide that details and describes the elements needed for a technology mentoring program is offered as a solution that addresses technology training. Instructional designers are encouraged to conduct needs assessments to determine what problems exist and then based upon what has been learned, find solutions to solving the problem (Dick, Carey, & Carey, 2001). A review of current literature provided the evidence that there was a need for additional staff development strategies that could be used to promote teacher technology training (Brand, 1998; Cooper, 1998). This step-by-step guide incorporated mentoring and diffusion components to provide a program to support teacher training.

This study also extends mentoring literature by offering a systematically developed technology mentoring program that utilizes on-site teachers as mentors providing on-going staff development as an extension of mentoring literature. On-site

teachers as technology mentors encourage meaningful relationships when mentors and mentees are already familiar with the school culture (Meckel & Rolland, 2000). The inclusion of on-site teachers in the development process of the program promotes continued technology training for teachers.

Another contribution of the study is the extension of the diffusion of innovation process by systematically aligning the components with mentoring. The diffusion components have been used in a variety of settings to promote the adoption of a new innovation (Farquhar & Surry, 1994; Rogers, 1995; Surry & Ely, 2002) and in this study; the components were inherently used throughout the development process to produce a theory-based product that can be used to develop a technology mentoring program.

In conclusion, the contributions of this study address the need for increase teacher technology use in the teaching and learning process. The development of the technology mentoring program fuses the components researchers have identified as meaningful elements needed to increase technology use by teachers. The inclusion of teachers mentoring teachers and on-going technology support conducted on-site is also addressed by this program. Based upon the evaluators' consensus, the implementation of this program is feasible as a staff development strategy.

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Appendix A

Institutional Review Board Form

Virginia Tech
VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Institutional Review Board

Dr. David M. Moore
IRB (Human Subjects)Chair
Assistant Vice President for Research Compliance
CVM Phase II- Duckpond Dr., Blacksburg, VA 24061-0442
Office: 540/231-4991; FAX: 540/231-6033
email: moored@vt.edu

DATE: June 11, 2004

MEMORANDUM

TO: Barbara Lockee Teaching and Learning 0313
Barbra Mosley EDCI

FROM: David Moore

SUBJECT: **IRB Exempt Approval:** "Development of a technology mentoring program "
IRB # 04-310

I have reviewed your request to the IRB for exemption for the above referenced project. I concur that the research falls within the exempt status. Approval is granted effective as of June 11, 2004.

cc: File
Department Reviewer Bonnie Billingsly T&L 0313

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Appendix B

Technology Mentoring Program
Questionnaire

Please use the Technology Mentoring Program booklet to complete this questionnaire.

Use this questionnaire to evaluate the Technology Mentoring Program. The questionnaire is divided into three sections: ***Technology Mentoring Content***, ***Feasibility of Mentoring Program***, and ***Demographics***. Please provide your best response to the items in each section.

Part I - Technology Mentoring Program Content

Using the Likert scale where 1 is the lowest and 5 is the highest, **circle** the most appropriate response for each item. Include any comments regarding a particular item in the space provided.

Section 1: Overview and Preparation

1. The amount of detail provided in the Technology Mentoring Program is
   Insufficient 1 2 3 4 5 Sufficient
Comments: _____
_____
_____

2. The Advisory Committee responsibilities are
   Unclear 1 2 3 4 5 Very Clear
Comments: _____
_____
_____

3. The Advisory Committee member roles are
   Unclear 1 2 3 4 5 Very Clear
Comments: _____
_____
_____

4. The distribution of program information is
   Unclear 1 2 3 4 5 Very Clear
Comments: _____
_____
_____

5. The program incentives are

Inappropriate 1 2 3 4 5 Appropriate

Comments: _____

_____

_____

6. The suggested timeline is

Inappropriate 1 2 3 4 5 Appropriate

Comments: _____

_____

_____

Section 2: Program Goals & Objectives

1. The program goals are

Unclear 1 2 3 4 5 Very Clear

Comments: _____

_____

_____

2. The program objectives are

Unclear 1 2 3 4 5 Very Clear

Comments: _____

_____

_____

3. The information displayed in the ***Meeting the Objectives*** table on page 10 is

Unclear 1 2 3 4 5 Very Clear

Comments: _____

_____

_____

4. The activities listed to meet the objectives seem

Inappropriate 1 2 3 4 5 Appropriate

Comments: _____

_____

_____

Section 3: Recruitment and Selection Process

1. The Program Coordinator Job Description is

Not useful 1 2 3 4 5 Very Useful

Comments: _____

_____

_____

2. The Mentor characteristics used during the selection process seem

Inappropriate 1 2 3 4 5 Appropriate

Comments: _____

_____

_____

3. The Mentee characteristics used during the selection process seem

Inappropriate 1 2 3 4 5 Appropriate

Comments: _____

_____

_____

4. The Mentor Selection Criteria items seem

Inappropriate 1 2 3 4 5 Appropriate

Comments: _____

_____

_____

5. The Mentee Selection Criteria items seem

Inappropriate 1 2 3 4 5 Appropriate

Comments: _____

_____

_____

6. The information within the Mentors Recruitment flyer on page 32 seem

Inappropriate 1 2 3 4 5 Appropriate

Comments: _____

_____

_____

7. The information within the Mentees Recruitment flyer on page 33 seem

Inappropriate 1 2 3 4 5 Appropriate

Comments: _____

_____

_____

8. The Mentor and Mentee expectations seem

Inappropriate 1 2 3 4 5 Appropriate

Comments: _____

_____

_____

Section 4: Training

1. The description of the Mentor Training session seems

Unclear 1 2 3 4 5 Very Clear

Comments: _____

_____

_____

2. The Mentor Training Session topics seem

Inappropriate 1 2 3 4 5 Appropriate

Comments: _____

_____

_____

3. The description of the Mentor/Mentee Initial Training seems

Unclear 1 2 3 4 5 Very Clear

Comments: _____

_____

_____

4. The Mentor/Mentee Initial Training Session Scheduling Outline seems

Inappropriate 1 2 3 4 5 Appropriate

Comments: _____

_____

_____

Section 5: Evaluation Process

1. The items used to evaluate the program seem

Inappropriate 1 2 3 4 5 Appropriate

Comments: _____

_____

_____

2. The Mentor/Mentee Log Sheet on page 25 seems

Not helpful 1 2 3 4 5 Very Helpful

Comments: _____

_____

_____

3. The content within the Instructional Materials Evidence Sheet on page 26 seems

Not useful 1 2 3 4 5 Very Useful

Comments: _____

_____

_____

4. The Mentoring Feedback Form on page 24 seem

Not useful 1 2 3 4 5 Very Useful

Comments: _____

_____

_____

Section 6: Supplemental Documents

1. The documents contained in this section as a whole seem

Inappropriate 1 2 3 4 5 Appropriate

Comments: _____

_____

_____

Part II - Feasibility of Mentoring Program

Please provide your response to the following questions:

1. How effective would this proposed Technology Mentoring Program be in your school environment? Why?

_____
_____
_____
_____
_____
_____

2. What additional suggestions or recommendations can you provide to improve this technology mentoring program?

_____
_____
_____
_____
_____
_____

3. Are there any other specific issues you would like to make us aware of regarding this proposed Technology Mentoring Program?

_____
_____
_____
_____
_____
_____

Part III - Demographics

Please provide your response to the following items by placing an "X" in the appropriate box.

1. What is your current role? Select all that apply.
   - ☐ Teacher
   - ☐ Administrator
   - ☐ Technology Coordinator
   - ☐ Other (please specify): _____

2. How long have you been an education professional?
   - ☐ Less than 5 years
   - ☐ 5 – 10 years
   - ☐ 11 – 15 years
   - ☐ 16 – 20 years
   - ☐ More than 20 years

3. In what capacity have you served as a mentor? Select all that apply.
   - ☐ None
   - ☐ Peer mentor
   - ☐ Teacher-student mentor
   - ☐ Induction teacher mentor
   - ☐ Other (please specify): _____

4. Gender:
   - ☐ Male
   - ☐ Female

5. Ethnicity
   - ☐ African-American
   - ☐ Caucasian
   - ☐ Asian
   - ☐ Native American
   - ☐ Hispanic
   - ☐ Other (specify): _____

6. Age
   - ☐ 20 - 29 years
   - ☐ 30 - 39 years
   - ☐ 40 - 49 years
   - ☐ 50 – 59 years
   - ☐ 60 years or more

Thank you for completing this questionnaire!!!

Appendix C

Section I: Overview & Preparation

The following procedures and activities are used to implement a Technology Mentoring Program for K-12 instructional environments. This program seeks to pair experienced technology using-teachers with novice technology-using teachers in a mentoring type relationship.

Description of the Program
This program is open to all K-12 teachers and will be activated for one academic school year. Training will be provided to these K-12 teachers on how to develop technology-rich materials and how to integrate the use of technology into the teaching and learning process. A variety of activities will be completed by both the mentors and mentees.

Technology Mentoring Advisory Committee
To ensure the success of the Technology Mentoring Program, there must exist a committee of representatives who will be included in the decision-making process for the implementation of the program. This committee will take on the responsibility for the management of the Technology Mentoring Program.

The committee's responsibilities will include but not be limited to the following:

- Establish goals and objectives for the program;
- Establish the selection and reporting procedures for the program coordinator;
- Establish the selection and reporting procedures for the mentors and mentees;
- Monitor and evaluate the growth of the program; and
- Oversee the overall management of the program.

The committee will consist of the following members:

- School administrator (Principal or designated representative)
- Program coordinator
- On-site technology representative
- Teachers (at least two)
    - These teachers maybe former mentors and mentees; or
    - Teachers with experience as advanced technology users

Committee Member Roles
The following roles have been established for each primary committee member.

The school administrator will:

- Identify and select the program coordinator;
- Appoint the on-site technology representative to the committee;
- Identify and appoint two other teachers to the committee; and
- Provide assistance to the program coordinator in implementing the program successfully and effectively.

Once identified and selected the program coordinator will:

- Serve as the site coordinator for the program;
- Oversee all aspects of the Technology Mentoring Program (e.g., training support, distribution of information, collaborations, etc.);
- Manage and coordinate relationships with schools, training facilities, institutions of higher education, etc.;
- Recruitment and selection of mentors and mentees;
- Coordinate all staff development activities; and
- Oversee the program evaluation and activities.

The on-site technology representative will assist the program coordinator by providing:

- Technical assistance;
- Training support;
- Preparation of training schedules and activities; and
- Other needed support for the implementation of the program.

The two teachers selected as members of the Advisory Committee can be former technology mentors and/or mentees from other programs with experiences in mentoring others. The teacher's role will include providing assistance and support to increase the effectiveness of the Technology Mentoring Program.

Distribution of Program Information

All aspects of the Technology Mentoring Program must be communicated to all stakeholders to ensure knowledge and understanding of the program. The use of mass media and interpersonal channels will be used to distribute information. Utilizing a variety of communication channels help to ensure that all stakeholders are aware of the program and has access to pertinent information.

The program coordinator will monitor the distribution of information using the following formats:

- Newsletters
- Brochures
- Web pages
- Flyers
- Face-to-face interactions
- Electronic communications (e.g., email, chats, bulletin boards, etc.)
- Announcements
- Scheduled meetings

Program Incentives
To encourage program participation, the following items will be available to mentors and mentees at the end of the one-year program. Mentors and mentees may select one item from the following list:

- Scanner
- External speakers
- Digital camera
- Software (school supported)
- Printer
- External zip drive
- Jump drive/Thumb drive

Program Timeline
The following timeline will be used by the Program Coordinator to keep track of program activities:

Activity	Date
Hire Program Coordinator	Feb 2005
Recruit & Select Mentors	May 2005
Recruit & Select Mentees	May 2005
Send Notification of Selection	June 2005
Mentor Training Session	June 2005
Mentor/Mentee Initial Training Session	Jun/Jul 2005
Collect Mentor/Mentee Action Plan	Jul/Aug 2005
Technology Workshop	Oct 2005
Collect Log Sheets (8 wks)	Oct 2005
Collect Log Sheets (16 wks) Collect Evidence Sheet	Dec 2005
Technology Workshop	Feb 2006
Collect Log Sheets (8 wks)	Mar 2006
Collect Log Sheets (16 wks) Collect Evidence Sheet	May 2006
Distribute Program Evaluation Tools Feedback Form	May 2006
Final Report	Jun/Jul 2006

Appendix D

Section 2: Program Goals and Objectives

The Technology Mentoring Program is designed to serve as a staff development strategy that contributes to the development of technological skills. The program will utilize experienced technology-using teachers (mentors) to assist novice technology-using teachers (mentees) with the development of instructional materials to support the teaching and learning process.

Upon the completion and participation in the Technology Mentoring Program the mentors and mentees will:

- Develop at least two technology-rich instructional materials to enhance the teaching and learning process;
- Use at least one form of technology to communicate and collaborate with peers, parents, and others to nurture student learning; and
- Identify and use technology resources to enhance classroom instruction.

Meeting the Objectives

The following table displays the objectives, approaches for meeting the objective, measures used to access the program and the responsibility of primary personnel.

Objective	**How?**	**Measured?**	**Responsibility**
1. Develop at least two technology-rich instructional materials to enhance the teaching and learning process.	Staff Development Workshops ▪ MS PowerPoint ▪ MS Word ▪ MS Excel ▪ HyperStudio ▪ Web Page development	Evidence of products created	Program coordinator will schedule all activities to support the program. Mentors will receive training on several software programs and will share knowledge and skills with Mentees to develop materials.
2. Use at least one form of technology to communicate and collaborate with peers, parents, and others.	Staff Development Workshops ▪ Intro to Electronic Communications ▪ Web Page development	Evidence of communication exchange	Program coordinator will schedule all activities to support the program. Mentors and Mentees will receive training.
3. Identify and use at least three technology resources to enhance classroom instruction.	Conference Attendance (local, state or national) Vendor demonstrations	Evidence of resources collected	Mentors and Mentees will be allowed to attend demonstrations, conferences, etc.

Activities to Meet Objectives
The mentor and mentee will work collaboratively to decide which activities will be used to satisfy each objective.

Objective 1: Develop at least two technology-rich instructional materials to enhance the teaching and learning process.

These suggested activities can be used to satisfy this objective:

1. Use a Web Page application to create a simple web page to distribute information.
2. Use MS PowerPoint to create a presentation.
3. Use a multimedia application such as HyperStudio to create an interactive lesson.
4. Develop lesson plans using MS Word templates to support classroom instruction.

Objective 2: Use at least one form of technology to communicate and collaborate with peers, parents, and others to nurture student learning.

These suggested activities can be used to satisfy this objective:

1. Use MS Word to create a classroom newsletter to distribute information to students, parents, community, etc.
2. Use a Web Page application to create a simple web page to distribute information.
3. Subscribe to at least two professional organizations of interest.
4. Use an email account to communicate with peers, parents, and others.

Objective 3: Identify and use at least three technology resources to enhance classroom instruction.

These suggested activities can be used to satisfy this objective:

1. Create a bookmarks list to highlight various technology resources of interest.
2. Use the Reading First program to promote effective reading.
3. Use MarcoPolo: Internet Content for the Classroom to support a unit of instruction.
4. Design a WebQuest activity to integrate the web with student learning.

The program coordinator will distribute these activities during the ***Mentor/Mentee Initial Training*** session. Additional information about the initial training session is located in **Section 4: Training**.

Appendix E

Section 3: Recruitment and Selection Procedures

A sample job description highlighting the primary skills and responsibilities of the program coordinator and the written criteria for the selection of mentors and mentees are included in this section.

Program Coordinator
The Program Coordinator will oversee the development and implementation of the Technology Mentoring Program. This individual ensures program quality and performance related to mentor/mentee selection, evaluation, communication distribution, training support, and collaborative activities.

The on-site technology representative can be suggested to serve as the program coordinator; however, compensation for time and efforts must be coordinated per the Human Resource Office or other designated offices.

The following is a sample ***Program Coordinator Job Description***:

Program Coordinator
Job Description

The Program Coordinator will report to the Principal or designated representative and will carry out the responsibilities of the position as highlighted below:

- Serve as the facilitator for the Technology Mentor Program
- Develop and manage relationships among all stakeholders
- Coordinate ongoing training support and activities
- Oversee program evaluation
- Plan and coordinate staff development activities to support technology mentoring
- Work collaboratively with other agencies to ensure well-defined staff development
- Oversee the mentor and mentee recruitment process
- Oversee the distribution of program information (communications)
- Attend regional/national conferences to increase knowledge of mentoring program and best practices
- Manage and coordinate relationships with schools, training facilities, institutions of higher education, etc.
- Complete other duties and activities as needed

(Note: Additional information regarding qualifications and compensation can be provided by the local Human Resource Office or other designated offices).

Mentor/Mentee Characteristics
The success of the mentoring program will be dependent upon the relationship established between the mentor and mentee. As part of the selection criteria procedures, the Advisory Committee established a desired list of characteristics and qualities that mentors and mentees must bring to the relationship.

The Program Coordinator will use this list of characteristics and qualities in the selection process. Questions addressing these qualities are embedded in the ***Mentor and Mentee Application*** (see Section 6: **Supplemental Documents**) as well as included in the ***Mentor/Mentee Recruitment*** flyers. The list of characteristics and qualities include:

Mentor	**Mentee**
Respect for others	Desire to work towards professional goals
Strong communication skills	Ability to accept help from others
Knowledgeable in technology use	Eager to learn and use technology skills
Ability to encourage, motivate & develop others	Eager to cooperate
Willingness to share skills, ideas, and resources	Positive attitude

Mentor Selection Criteria
The following criteria list will be used by the program coordinator to select volunteer mentors for the program. The ***Mentor Application*** (see **Section 6: Supplemental Document**) includes questions that address the basic selection requirements.

The program coordinator will align the responses from the ***Mentor Application*** to the selection criteria to identify a mentor.

Mentor Selection Criteria	
Technological competence	• **An individual who currently applies technology in instructional classroom practices and seek opportunities for growth and training.** • **Or who is currently participating in the technology mentoring program**
Strong interpersonal skills	• **Demonstrate the ability to communicate and influence other teachers in the school.**
Tolerance for ambiguity	• **Ability to adapt to change**

Mentee Selection Criteria
The following criteria list is used by the program coordinator to select volunteer mentees for the program. The ***Mentee Application*** (see **Section 6: Supplemental Document**) includes questions that address these basic selection requirements.

The program coordinator carefully aligns the responses from the ***Mentee Application*** to the selection criteria.

Mentee Selection Criteria	
Limited or Non-users of technology	• **Individuals who are using technology on a limited basis or not at all for classroom practices.**
Desire to integrate technology	• **Willing to make an effort to gain technology proficiency.**

Recruitment of Mentors
The mentors for the Technology Mentoring Program are volunteer teachers who are interested in helping other teachers enhance their technology skills. A ***Mentor Recruitment*** flyer was created to solicit volunteers to serve as mentors (see **Section 6: Supplemental Documents**). The flyer will be posted throughout the school, announced during faculty/staff meetings, and posted to the school's web site.

Recruitment of Mentees
The mentees are volunteer teachers who are interested in developing technology skills to enhance the teaching and learning process. A ***Mentee Recruitment*** flyer was created to solicit volunteers to serve as mentees (see **Section 6: Supplemental Documents**). The flyer will be posted throughout the school, announced during faculty/staff meetings, and posted to the school's web site.

Mentor and Mentee Expectations

After selection to participate, the program expectations are distributed to the mentor and mentee at the ***Mentor/Mentee Initial Training session*** (see **Section 4: Training**). These expectations include but are not limited to the following:

Mentor

- Provide on-going technology support to mentee
- Meet with mentees at least one hour per week
- Attend the Mentor/Mentee Initial Training session
- Introduce, demonstrate and teach a technological skill to the mentee
- Attend at least two technology staff development training sessions per year
- Collaboratively create useful instructional materials
- Maintain a log of activities
- Commit to the program for one academic school year
- Participate in the evaluation process

Mentee

- Meet with mentors at least one hour per week
- Attend the Mentor/Mentee Initial Training session
- Attend at least two technology staff development training sessions per year
- Collaboratively create useful instructional materials
- Maintain a log of activities
- Commit to the program for one academic school year
- Participate in the evaluation process

Appendix F

Section 4: Training

Training will provide opportunities for teachers to obtain hands-on experiences using technology to develop instructional materials for use in the classroom. The training support efforts will utilize much of the current staff development activities in-place for each school system. In addition, training opportunities available through partnerships and collaborations will be utilized. The program coordinator and the on-site technology representative will prepare training schedules of activities for distribution to mentors and mentees.

Mentor Training

Mentors must attend the one day ***Mentor Training Session*** during the summer break and must attend the ***Mentor/Mentee Initial Training session***. In addition, they must attend at least two additional technology staff development sessions per year.

Mentor Training Session Topics

The one day training session will focus on the development of effective mentoring skills and will include the following topics:

- Technology Mentoring Program Goals and Outcomes
- Effective Mentoring Skills
- Understanding the role of the mentor
- Communication Skills
- Building Relationships

Mentor/Mentee Initial Training Session

The initial training session will serve as the first meeting where a mentor is matched with a mentee. The match will be made using the responses from the ***Mentor and Mentee Applications***. This four hour session is designed to introduce the mentors and mentees to program procedures and expectations. The initial training session will occur upon the completion of the **Mentor Training Session** (summer or August).

Mentor/Mentee Initial Training Session
Scheduling Outline

The program coordinator will preside over the initial training session. The scheduling outline will consist of the following topics:

Scheduling Outline

I. Personnel Introductions (15 minutes)
   a. Introduction of all personnel in attendance

II. Program Procedures & Expectations (1 ½ hrs)
   a. Overview of the Technology Mentoring Program
   b. Program Expectations & Commitment

III. Match Pairs & Planning Activities (2 hrs)
   a. Distribute all necessary forms
      i. Mentor/Mentee Action Plan
      ii. Activities to Meet Objectives
      iii. Mentor/Mentee Log Sheets
      iv. Instructional Materials Evidence Sheet
   b. Mentor/Mentee Collaborations
      i. Work collaborative on activities
   c. Collect completed forms at end of session
      i. Signed Mentor/Mentee Action Plan

IV. Closure/Questions and Comments (15 minutes)
   a. Schedule next meeting
      i. Midway semester meeting

The coordinator will begin the training session with introductions of all attending personnel, followed by an overview of the Technology Mentoring Program procedures and expectations. Afterwards, the mentor and mentee will be matched and given materials to use during their involvement with the program.

The mentor and mentee will complete the Mentor/Mentee Action Plan (see Section 6: Supplemental Documents) during this training session. The partners will work together to prepare this written document to identify the activities they plan to complete as a team.

Appendix G

Section 5: Evaluation Process

The Technology Mentoring Program must have on-going evaluation measures in place throughout the program to help validate the programs' success. The following items will be used to evaluate the program:

- Mentor/Mentee log sheets;
- Instructional Materials Evidence Sheet; and
- The Mentoring Feedback Form.

The program coordinator will initiate and complete the evaluation process of the program. A final report upon completion of the one-year program will be submitted to the Advisory Committee for review.

Mentor/Mentee Log Sheet
The purpose of the log sheets is to document the various activities accomplished by the mentor and mentee. The program coordinator will distribute the log sheets at the Initial Training session. The mentor and mentee will each receive a copy of the log sheets; they will be expected to annotate the number of contact hours and activity accomplished weekly.

After the eighth week of contact, the forms will be collected by the program coordinator; this will mark the midway point for the semester. The next collection will take place at the end of the semester. A copy of the **Mentor/Mentee Log Sheet** is located in ***Section 6: Supplemental Documents)***.

Instructional Materials Evidence Sheet
Examples of instructional materials created collaboratively will be documented by the mentor/mentee team in the ***Instructional Materials Evidence Sheet*** (see **Section 6: Supplemental Documents**). For each objective listed, the mentor and mentee will identify or list the specific item used to satisfy the objective, along with the date the item was completed. At the end of each semester the ***Instructional Materials Evidence Sheet*** will be submitted to the program coordinator.

Mentoring Feedback Form
The ***Mentoring Feedback Form*** (see **Section 6: Supplemental Documents**) is used to obtain feedback from mentors and mentees about their perception of the program. The program coordinator will distribute the form to each mentor and mentee at the end of the year program. The mentor and mentee will return the completed form to the program coordinator.

Appendix H

Section 6: Supplemental Documents

This section contains documents used to supplement the Technology Mentoring Program. The following documents are:

- Mentoring Feedback Form
- Technology Mentor/Mentee Log Sheets
- Instructional Materials Evidence Sheet
- Technology Mentor Application
- Technology Mentee Application
- Mentor/Mentee Action Plan
- Mentors Recruitment Flyer
- Mentees Recruitment Flyer
- Initial Training Session for Mentors & Mentees Flyer

Mentoring Feedback Form

Evaluation Process

The purpose of this form is to collect valuable information to support the evaluation process of the Technology Mentoring Program. Reponses from both the mentor and mentee will be collected via this form.

Please use the space below to write your responses to the following items:

1. What did you find most useful or enjoyable about the Technology Mentoring Program?

   _____

   _____

   _____

2. What did you find least useful or enjoyable about the Technology Mentoring Program?

   _____

   _____

   _____

3. How can improvements be made to the Technology Mentoring program to best meet your staff development goals and objectives?

   _____

   _____

   _____

4. Would you like to return as a Technology Mentor or Mentee for the next academic year?

   _____

Additional Comments:

_____

_____

_____

_____

Please return this form to the Technology Mentoring Program Coordinator!

Technology Mentor/Mentee Log Sheet

Evaluation Process

Name of Mentor: _____
Email: _____
Phone: _____

Name of Mentee: _____
Email: _____
Phone: _____

Week	Date	Description of Activity	Contact Hrs
1			
2			
3			
4			
5			
6			
7			
8			

Total Number of Contact Hours _____

Please return this form to the Technology Mentoring Program Coordinator after completing eight weeks of contact.

Instructional Materials Evidence Sheet

Mentee Name: _____
Mentor Name: _____

Provide evidence to support objectives. See the attached list of *Activities to Meet Objectives* for ideas.

Objective	Evidence	Date Completed
1. Develop at least two technology-rich instructional materials to enhance the teaching and learning process. [Examples: PowerPoint presentations, Classroom web page, WebQuests, etc.]		
		How often used?
2. Use at least one form of technology to communicate and collaborate with peers, parents, and others. [Examples: Classroom newsletter, use email, subscribe to professional organizations, etc.]		
		Date started
3. Identify and use at least three technology resources to enhance classroom instruction. [Examples: Create bookmark lists, Use Reading First, Use MarcoPolo, etc.]		

Please return this form to the Technology Mentoring Program Coordinator

Page 1 of 2

Activities to Meet Objectives

Objective 1: Develop at least two technology-rich instructional materials to enhance the teaching and learning process.

These suggested activities can be used to satisfy this objective:

1. Use a Web Page application to create a simple web page to distribute information.
2. Use MS PowerPoint to create a presentation.
3. Use a multimedia application such as HyperStudio to create an interactive lesson.
4. Develop lesson plans using MS Word templates to support classroom instruction.

Objective 2: Use at least one form of technology to communicate and collaborate with peers, parents, and others to nurture student learning.

These suggested activities can be used to satisfy this objective:

1. Use MS Word to create a classroom newsletter to distribute information to students, parents, community, etc.
2. Use a Web Page application to create a simple web page to distribute information.
3. Subscribe to at least two professional organizations of interest.
4. Use an email account to communicate with peers, parents, and others.

Objective 3: Identify and use at least three technology resources to enhance classroom instruction.

These suggested activities can be used to satisfy this objective:

1. Create a bookmarks list to highlight various technology resources of interest.
2. Use the ***Reading First*** program to promote effective reading.
3. Use ***MarcoPolo: Internet Content for the Classroom*** to support a unit of instruction.
4. Design a ***WebQuest*** activity to integrate the web with student learning.

Technology Mentor Application

Selection Process

Name: _____ Date: _____
Street Address: _____
City: _____ State: _____
Zip: _____
Phone: _____ Email: _____
Your Current Position: _____

Principal's Name: _____
School: _____

Please answer the following questions:

1. Why do you want to become a technology mentor? _____
   _____

2. Cite at least two ways you apply technology in instructional classroom practices.
   _____
   _____

3. Do you currently participate in a technology mentoring program? If yes, state the location where you are mentoring and how long you have been a technology mentor.
   _____
   _____

4. List three qualities or skills you feel you have that would benefit teachers who are seeking to integrate technology into their classroom practices.
   _____
   _____

Please return this form to the Technology Mentoring Program Coordinator!

Technology Mentee Application

Selection Process

Name: _____Date: _____
Street Address: _____
City: _____ State: _____
Zip: _____
Phone: _____ Email: _____
Your Current Position: _____

Principal's Name: _____
School: _____

Please answer the following questions:

1. Why do you want to become a technology mentor? _____
   _____

2. Are you willing to work with a mentor to gain technology proficiency? _____

3. What types of activities would you like the technology mentor to assist you with?
   _____
   _____
   _____

4. List at least three qualities or skills you possess. _____
   _____
   _____

Please return this form to the Technology Mentoring Program Coordinator!

Mentor/Mentee Action Plan

Training

Mentor Name: _____
Mentee Name: _____

Using the "**Activities to Meet Objectives Form**" (see attached), select the activities you will complete collaboratively to satisfy the program goals/objectives.

Objective 1: Develop at least two technology-rich instructional materials to enhance the teaching and learning process.

a. _____

b. _____

Objective 2: Use at least one form of technology to communicate and collaborate with peers, parents, and others to nurture student learning.

a. _____

Objective 3: Identify and locate at least three technology resources to enhance classroom instruction.

a. _____

b. _____

c. _____

Projected Timeline: Use this space to list specific steps and/or tasks you and your partner plan to perform to accomplish your activities. If additional space is needed, use the reverse side of this page to complete your responses.

For example, by the end of the _____ (Fall or Spring) semester, we will do the following:

This form will become the contract between you and your partner. The Program Coordinator will collect this form at the end of the Initial Training Session. A copy of this form will be forwarded to you within two days.

Signatures

Mentor Signature: _____Mentee Signature: _____
Technology Mentor Program Coordinator: _____
Date: _____

The following documents are in support of

Recruitment and Training

Mentors Recruitment Flyer

Mentees Recruitment Flyer

Initial Training Session for Mentors and Mentees Announcement

Technology Mentoring Program

Now Accepting Applications
For
Mentors

Do you exhibit these qualities?

Motivator?

Respect others?

Share ideas?

Strong communication skills?

Technology user?

YES?

We need you!!!

Information and application is available from the main office
Application Deadline **May 2nd**

Advanced technology skills are ***Not*** required

For Additional Information
Please contact the Program Coordinator at
540-777-7777

Technology Mentoring Program

Now Accepting Applications
For
Mentees

Eager to improve technology skills?

Willing to collaborate?

Have a positive attitude?

YES?

This program is for you!!!

Information and application is available from the main office
Application Deadline May 10th

For Additional Information
Please contact the Program Coordinator at
540-777-7777

Training Session for Mentors & Mentees
Announcement

Technology Mentoring Program Training Session

For

Who: Mentor & Mentee Program Participants

When: 8:00 a.m. – 12:00 noon

Wednesday, Jul 15th

Where: IALR Conference Room 2

Danville, VA

Lunch will be served

Email the Program Coordinator to Register:

2weekly@ialr.edu

Appendix I

Collective Technology Mentoring Program

Technology Mentoring Program

Table of Contents

The program components for the development of a K-12 Technology Mentoring Program are addressed in this booklet. The booklet is organized into the following sections:

Section 1: Overview and Preparation
This section provides an overview of the Technology Mentoring Program, the structure needed for implementation, and the distribution of information.

Section 2: Program Goals and Objectives
This section identifies the goals/ objectives and activities used for the Technology Mentoring Program.

Section 3: Recruitment and Selection Process
This section includes written criteria for the recruitment and selection of primary personnel (i.e., mentors, mentees, and program coordinator).

Section 4: Training
This section addresses the training elements for mentors and mentees.

Section 5: Evaluation Process
This section identifies ways to evaluate the Technology Mentoring Program.

Section 6: Supplemental Documents
This section contains documents used to support the Technology Mentoring Program.

Section I: Overview & Preparation

The following procedures and activities are used to implement a Technology Mentoring Program for K-12 instructional environments. This program seeks to pair experienced technology using-teachers with novice technology-using teachers in a mentoring type relationship.

Description of the Program
This program is open to all K-12 teachers and will be activated for one academic school year. Training will be provided to these K-12 teachers on how to develop technology-rich materials and how to integrate the use of technology into the teaching and learning process. A variety of activities will be completed by both the mentors and mentees.

Technology Mentoring Advisory Committee
To ensure the success of the Technology Mentoring Program, there must exist a committee of representatives who will be included in the decision-making process for the implementation of the program. This committee will take on the responsibility for the management of the Technology Mentoring Program.

The committee's responsibilities will include but not be limited to the following:

- Identify funding resources to support the program;
- Establish goals and objectives for the program;
- Establish the selection and reporting procedures for the program coordinator;
- Establish the selection and reporting procedures for the mentors and mentees;
- Monitor and evaluate the growth of the program; and
- Oversee the overall management of the program.

The committee will consist of the following members:

- School administrator (Principal or designated representative)
- Program coordinator
- On-site technology representative
- Teachers (at least two)
    - These teachers maybe former mentors and mentees; or
    - Teachers with experience as advanced technology users

Committee Member Roles
The following roles have been established for each primary committee member.

The school administrator will:

- Identify funding resources to support the program;
- Identify and select the program coordinator;
- Appoint the on-site technology representative to the committee;
- Identify and appoint two other teachers to the committee; and
- Provide assistance to the program coordinator in implementing the program successfully and effectively.

Once identified and selected the program coordinator will:

- Serve as the site coordinator for the program;
- Oversee all aspects of the Technology Mentoring Program (e.g., training support, distribution of information, collaborations, etc.);
- Identify funding resources to support the program;
- Manage and coordinate relationships with schools, training facilities, institutions of higher education, etc.;
- Recruitment and selection of mentors and mentees;
- Coordinate all staff development activities; and
- Oversee the program evaluation and activities.

The on-site technology representative will assist the program coordinator by providing:

- Technical assistance;
- Training support;
- Preparation of training schedules and activities; and
- Other needed support for the implementation of the program.

The two teachers selected as members of the Advisory Committee can be former technology mentors and/or mentees from other programs with experiences in mentoring others. The teacher's role will include providing assistance and support to increase the effectiveness of the Technology Mentoring Program.

Distribution of Program Information

All aspects of the Technology Mentoring Program must be communicated to all stakeholders to ensure knowledge and understanding of the program. The use of mass media and interpersonal channels will be used to distribute information. Utilizing a variety of communication channels help to ensure that all stakeholders are aware of the program and has access to pertinent information.

The program coordinator will monitor the distribution of information using the following formats:

- Newsletters
- Brochures
- Web pages
- Flyers
- Face-to-face interactions
- Electronic communications (e.g., email, chats, bulletin boards, etc.)
- Announcements
- Scheduled meetings

Program Incentives
To encourage program participation, the following items will be available to mentors and mentees at the end of the one-year program. Mentors and mentees may select one item from the following list:

- Scanner
- External speakers
- Digital camera
- Software (school supported)
- Printer
- External zip drive
- Jump drive/Thumb drive

(Incentives should be based upon the availability of resources at the particular school.)

Program Timeline
The following timeline will be used by the Program Coordinator to keep track of program activities:

Activity	**Date**
Hire Program Coordinator	Feb 2005
Recruit & Select Mentors	May 2005
Recruit & Select Mentees	May 2005
Send Notification of Selection	June 2005
Mentor Training Session	June 2005
Mentor/Mentee Initial Training Session	Jun/Jul 2005
Collect Mentor/Mentee Action Plan	Jul/Aug 2005
Technology Workshop	Oct 2005
Collect Log Sheets (8 wks)	Oct 2005
Collect Log Sheets (16 wks) Collect Evidence Sheet	Dec 2005
Technology Workshop	Feb 2006
Collect Log Sheets (8 wks)	Mar 2006
Collect Log Sheets (16 wks) Collect Evidence Sheet	May 2006
Distribute Program Evaluation Tools Feedback Form	May 2006
Final Report	Jun/Jul 2006

Section 2: Program Goals and Objectives

The Technology Mentoring Program is designed to serve as a staff development strategy that contributes to the development of technological skills. The program will utilize experienced technology-using teachers (mentors) to assist novice technology-using teachers (mentees) with the development of instructional materials to support the teaching and learning process.

Upon the completion and participation in the Technology Mentoring Program the mentors and mentees will:

- Develop at least two technology-rich instructional materials to enhance the teaching and learning process;
- Use at least one form of technology to communicate and collaborate with peers, parents, and others to nurture student learning; and
- Identify and use technology resources to enhance classroom instruction.

The specific technology that will be used for training and incorporated into the program should be congruent with the school's technology goals and resources. A needs assessment may be useful in identifying the types of technology and training teachers are interested in receiving.

Meeting the Objectives

The following table displays the objectives, approaches for meeting the objective, measures used to access the program and the responsibility of primary personnel.

Objective	How?	Measured?	Responsibility
1. Develop at least two technology-rich instructional materials to enhance the teaching and learning process.	Staff Development Workshops ▪ MS PowerPoint ▪ MS Word ▪ MS Excel ▪ HyperStudio ▪ Web Page development	Evidence of products created	Program coordinator will schedule all activities to support the program. Mentors will receive training on several software programs and will share knowledge and skills with Mentees to develop materials.
2. Use at least one form of technology to communicate and collaborate with peers, parents, and others.	Staff Development Workshops ▪ Intro to Electronic Communications ▪ Web Page development	Evidence of communication exchange	Program coordinator will schedule all activities to support the program. Mentors and Mentees will receive training.
3. Identify and use at least three technology resources to enhance classroom instruction.	Conference Attendance (local, state or national) Vendor demonstrations	Evidence of resources collected	Mentors and Mentees will be allowed to attend demonstrations, conferences, etc.

Activities to Meet Objectives
The mentor and mentee will work collaboratively to decide which activities will be used to satisfy each objective.

> Objective 1: Develop at least two technology-rich instructional materials to enhance the teaching and learning process.

These suggested activities can be used to satisfy this objective:

1. Use a Web Page application to create a simple web page to distribute information.
2. Use MS PowerPoint to create a presentation.
3. Use a multimedia application such as HyperStudio to create an interactive lesson.
4. Develop lesson plans using MS Word templates to support classroom instruction.

> Objective 2: Use at least one form of technology to communicate and collaborate with peers, parents, and others to nurture student learning.

These suggested activities can be used to satisfy this objective:

1. Use MS Word to create a classroom newsletter to distribute information to students, parents, community, etc.
2. Use a Web Page application to create a simple web page to distribute information.
3. Subscribe to at least two professional organizations of interest.
4. Use an email account to communicate with peers, parents, and others.

> Objective 3: Identify and use at least three technology resources to enhance classroom instruction.

These suggested activities can be used to satisfy this objective:

1. Create a bookmarks list to highlight various technology resources of interest.
2. Use the Reading First program to promote effective reading.
3. Use MarcoPolo: Internet Content for the Classroom to support a unit of instruction.
4. Design a WebQuest activity to integrate the web with student learning.

The program coordinator will distribute these activities during the ***Mentor/Mentee Initial Training*** session. Additional information about the initial training session is located in **Section 4: Training**.

Section 3: Recruitment and Selection Procedures

A sample job description highlighting the primary skills and responsibilities of the program coordinator and the written criteria for the selection of mentors and mentees are included in this section.

Program Coordinator
The Program Coordinator will oversee the development and implementation of the Technology Mentoring Program. This individual ensures program quality and performance related to mentor/mentee selection, evaluation, communication distribution, training support, and collaborative activities.

The on-site technology representative can be suggested to serve as the program coordinator; however, compensation for time and efforts must be coordinated per the Human Resource Office or other designated offices.

The following is a sample ***Program Coordinator Job Description***:

Program Coordinator
Job Description

The Program Coordinator will report to the Principal or designated representative and will carry out the responsibilities of the position as highlighted below:

- Serve as the facilitator for the Technology Mentor Program
- Develop and manage relationships among all stakeholders
- Coordinate ongoing training support and activities
- Oversee program evaluation
- Plan and coordinate staff development activities to support technology mentoring
- Work collaboratively with other agencies to ensure well-defined staff development
- Oversee the mentor and mentee recruitment process
- Oversee the distribution of program information (communications)
- Attend regional/national conferences to increase knowledge of mentoring program and best practices
- Manage and coordinate relationships with schools, training facilities, institutions of higher education, etc.
- Complete other duties and activities as needed

(Note: Additional information regarding qualifications and compensation can be provided by the local Human Resource Office or other designated offices).

Mentor/Mentee Characteristics
The success of the mentoring program will be dependent upon the relationship established between the mentor and mentee. As part of the selection criteria procedures, the Advisory Committee established a desired list of characteristics and qualities that mentors and mentees must bring to the relationship.

The Program Coordinator will use this list of characteristics and qualities in the selection process. Questions addressing these qualities are embedded in the ***Mentor and Mentee Application*** (see Section 6: **Supplemental Documents**) as well as included in the ***Mentor/Mentee Recruitment*** flyers. The list of characteristics and qualities include:

Mentor	**Mentee**
Respect for others	Desire to work towards professional goals
Strong communication skills	Ability to accept help from others
Knowledgeable in technology use	Eager to learn and use technology skills
Ability to encourage, motivate & develop others	Eager to cooperate
Willingness to share skills, ideas, and resources	Positive attitude

Mentor Selection Criteria
The following criteria list will be used by the program coordinator to select volunteer mentors for the program. The ***Mentor Application*** (see **Section 6: Supplemental Document**) includes questions that address the basic selection requirements.

The program coordinator will align the responses from the ***Mentor Application*** to the selection criteria to identify a mentor.

Mentor Selection Criteria	
Technological competence	• **An individual who currently applies technology in instructional classroom practices and seek opportunities for growth and training.** • **Or who is currently participating in the technology mentoring program**
Strong interpersonal skills	• **Demonstrate the ability to communicate and influence other teachers in the school.**
Tolerance for ambiguity	• **Ability to adapt to change**

Mentee Selection Criteria
The following criteria list is used by the program coordinator to select volunteer mentees for the program. The ***Mentee Application*** (see **Section 6: Supplemental Document**) includes questions that address these basic selection requirements.

The program coordinator carefully aligns the responses from the ***Mentee Application*** to the selection criteria.

Mentee Selection Criteria	
Limited or Non-users of technology	• **Individuals who are using technology on a limited basis or not at all for classroom practices.**
Desire to integrate technology	• **Willing to make an effort to gain technology proficiency.**

Recruitment of Mentors
The mentors for the Technology Mentoring Program are volunteer teachers who are interested in helping other teachers enhance their technology skills. A ***Mentor Recruitment*** flyer was created to solicit volunteers to serve as mentors (see **Section 6: Supplemental Documents**). The flyer will be posted throughout the school, announced during faculty/staff meetings, and posted to the school's web site.

Recruitment of Mentees
The mentees are volunteer teachers who are interested in developing technology skills to enhance the teaching and learning process. A ***Mentee Recruitment*** flyer was created to solicit volunteers to serve as mentees (see **Section 6: Supplemental Documents**). The flyer will be posted throughout the school, announced during faculty/staff meetings, and posted to the school's web site.

Mentor and Mentee Expectations

After selection to participate, the program expectations are distributed to the mentor and mentee at the ***Mentor/Mentee Initial Training session*** (see **Section 4: Training**). These expectations include but are not limited to the following:

Mentor

- Provide on-going technology support to mentee
- Meet with mentees at least one hour per week
- Attend the Mentor/Mentee Initial Training session
- Introduce, demonstrate and teach a technological skill to the mentee
- Attend at least two technology staff development training sessions per year
- Collaboratively create useful instructional materials
- Maintain a log of activities
- Commit to the program for one academic school year
- Participate in the evaluation process

Mentee

- Meet with mentors at least one hour per week
- Attend the Mentor/Mentee Initial Training session
- Attend at least two technology staff development training sessions per year
- Collaboratively create useful instructional materials
- Maintain a log of activities
- Commit to the program for one academic school year
- Participate in the evaluation process

Section 4: Training

Training will provide opportunities for teachers to obtain hands-on experiences using technology to develop instructional materials for use in the classroom. The training support efforts will utilize much of the current staff development activities in-place for each school system. In addition, training opportunities available through partnerships and collaborations will be utilized. The program coordinator and the on-site technology representative will prepare training schedules of activities for distribution to mentors and mentees.

Mentor Training

Mentors must attend the one day ***Mentor Training Session*** during the summer break and must attend the ***Mentor/Mentee Initial Training session***. In addition, they must attend at least two additional technology staff development sessions per year.

Mentor Training Session Topics

The one day training session will focus on the development of effective mentoring skills and will include the following topics:

- Technology Mentoring Program Goals and Outcomes
- Effective Mentoring Skills
- Understanding the role of the mentor
- Communication Skills
- Building Relationships

Mentor/Mentee Initial Training Session

The initial training session will serve as the first meeting where a mentor is matched with a mentee. The match will be made using the responses from the ***Mentor and Mentee Applications***. This four hour session is designed to introduce the mentors and mentees to program procedures and expectations. The initial training session will occur upon the completion of the **Mentor Training Session** (summer or August).

Mentor/Mentee Initial Training Session
Scheduling Outline

The program coordinator will preside over the initial training session. The scheduling outline will consist of the following topics:

Scheduling Outline

I. Personnel Introductions (15 minutes)
   a. Introduction of all personnel in attendance

II. Program Procedures & Expectations (1 ½ hrs)
   a. Overview of the Technology Mentoring Program
   b. Program Expectations & Commitment

III. Match Pairs & Planning Activities (2 hrs)
   a. Distribute all necessary forms
      i. Mentor/Mentee Action Plan
      ii. Activities to Meet Objectives
      iii. Mentor/Mentee Log Sheets
      iv. Instructional Materials Evidence Sheet
   b. Mentor/Mentee Collaborations
      i. Work collaborative on activities
   c. Collect completed forms at end of session
      i. Signed Mentor/Mentee Action Plan

IV. Closure/Questions and Comments (15 minutes)
   a. Schedule next meeting
      i. Midway semester meeting

The coordinator will begin the training session with introductions of all attending personnel, followed by an overview of the Technology Mentoring Program procedures and expectations. Afterwards, the mentor and mentee will be matched and given materials to use during their involvement with the program.

The mentor and mentee will complete the Mentor/Mentee Action Plan (see Section 6: Supplemental Documents) during this training session. The partners will work together to prepare this written document to identify the activities they plan to complete as a team.

Section 5: Evaluation Process

The Technology Mentoring Program must have on-going evaluation measures in place throughout the program to help validate the programs' success. The following items will be used to evaluate the program:

- Mentor/Mentee log sheets;
- Instructional Materials Evidence Sheet;
- Administrator Evaluation Form; and
- The Mentoring Feedback Form.

The program coordinator will initiate and complete the evaluation process of the program. A final report upon completion of the one-year program will be submitted to the Advisory Committee for review.

Mentor/Mentee Log Sheet
The purpose of the log sheets is to document the various activities accomplished by the mentor and mentee. The program coordinator will distribute the log sheets at the Initial Training session. The mentor and mentee will each receive a copy of the log sheets; they will be expected to annotate the number of contact hours and activity accomplished weekly.

After the eighth week of contact, the forms will be collected by the program coordinator; this will mark the midway point for the semester. The next collection will take place at the end of the semester. A copy of the **Mentor/Mentee Log Sheet** is located in ***Section 6: Supplemental Documents)***.

Instructional Materials Evidence Sheet
Examples of instructional materials created collaboratively will be documented by the mentor/mentee team in the ***Instructional Materials Evidence Sheet*** (see **Section 6: Supplemental Documents**). For each objective listed, the mentor and mentee will identify or list the specific item used to satisfy the objective, along with the date the item was completed. At the end of each semester the ***Instructional Materials Evidence Sheet*** will be submitted to the program coordinator.

Administrator Evaluation Form
The ***Administrator Evaluation Form*** (see **Section 6: Supplemental Documents**) is used to obtain feedback from the school's administrator about the feasibility of resources used to support the program; whether or not the outcomes warranted the resources used to support the program; provide input about the use of technology in the program; and to obtain input about the teachers' response to the program. The administrator is also encouraged to provide any additional information that can be used to improve the program.

Mentoring Feedback Form
The ***Mentoring Feedback Form*** (see **Section 6: Supplemental Documents**) is used to obtain feedback from mentors and mentees about their perception of the program. The

program coordinator will distribute the form to each mentor and mentee at the end of the year program. The mentor and mentee will return the completed form to the program coordinator.

Section 6: Supplemental Documents

This section contains documents used to supplement the Technology Mentoring Program. The following documents are:

- Mentoring Feedback Form
- Technology Mentor/Mentee Log Sheets
- Instructional Materials Evidence Sheet
- Administrator Evaluation Form
- Technology Mentor Application
- Technology Mentee Application
- Mentor/Mentee Action Plan
- Mentors Recruitment Flyer
- Mentees Recruitment Flyer
- Initial Training Session for Mentors & Mentees Flyer

Mentoring Feedback Form

Evaluation Process

The purpose of this form is to collect valuable information to support the evaluation process of the Technology Mentoring Program. Reponses from both the mentor and mentee will be collected via this form.

Please use the space below to write your responses to the following items:

1. What did you find most useful or enjoyable about the Technology Mentoring Program?

   _____

   _____

   _____

2. What did you find least useful or enjoyable about the Technology Mentoring Program?

   _____

   _____

   _____

3. How can improvements be made to the Technology Mentoring program to best meet your staff development goals and objectives?

   _____

   _____

   _____

4. Would you like to return as a Technology Mentor or Mentee for the next academic year?

   _____

Additional Comments:

_____

_____

_____

_____

Please return this form to the Technology Mentoring Program Coordinator!

Technology Mentor/Mentee Log Sheet

Evaluation Process

Name of Mentor: _____
Email: _____
Phone: _____

Name of Mentee: _____
Email: _____
Phone: _____

Week	Date	Description of Activity	Contact Hrs
1			
2			
3			
4			
5			
6			
7			
8			

Total Number of Contact Hours _____

Please return this form to the Technology Mentoring Program Coordinator after completing eight weeks of contact.

Instructional Materials Evidence Sheet

Mentee Name: _____
Mentor Name: _____

Provide evidence to support objectives. See the attached list of *Activities to Meet Objectives* for ideas.

Objective	Evidence	Date Completed
1. Develop at least two technology-rich instructional materials to enhance the teaching and learning process. [Examples: PowerPoint presentations, Classroom web page, WebQuests, etc.]		
		How often used?
2. Use at least one form of technology to communicate and collaborate with peers, parents, and others. [Examples: Classroom newsletter, use email, subscribe to professional organizations, etc.]		
		Date started
3. Identify and use at least three technology resources to enhance classroom instruction. [Examples: Create bookmark lists, Use Reading First, Use MarcoPolo, etc.]		

Please return this form to the Technology Mentoring Program Coordinator

Activities to Meet Objectives

Objective 1: Develop at least two technology-rich instructional materials to enhance the teaching and learning process.

These suggested activities can be used to satisfy this objective:

1. Use a Web Page application to create a simple web page to distribute information.
2. Use MS PowerPoint to create a presentation.
3. Use a multimedia application such as HyperStudio to create an interactive lesson.
4. Develop lesson plans using MS Word templates to support classroom instruction.

Objective 2: Use at least one form of technology to communicate and collaborate with peers, parents, and others to nurture student learning.

These suggested activities can be used to satisfy this objective:

1. Use MS Word to create a classroom newsletter to distribute information to students, parents, community, etc.
2. Use a Web Page application to create a simple web page to distribute information.
3. Subscribe to at least two professional organizations of interest.
4. Use an email account to communicate with peers, parents, and others.

Objective 3: Identify and use at least three technology resources to enhance classroom instruction.

These suggested activities can be used to satisfy this objective:

1. Create a bookmarks list to highlight various technology resources of interest.
2. Use the ***Reading First*** program to promote effective reading.
3. Use ***MarcoPolo: Internet Content for the Classroom*** to support a unit of instruction.
4. Design a ***WebQuest*** activity to integrate the web with student learning.

Administrator Evaluation Form

1. Were the resources required by the program feasible?

_____

_____

_____

2. Did the outcomes warrant the resources required for the program?

_____

_____

_____

3. Has technology use been impacted by the program?

_____

_____

_____

4. What has been the teachers' response to the program?

_____

_____

_____

Additional Comments: _____

_____

_____

_____

Please return this form to the Technology Mentoring Program Coordinator

Technology Mentor Application

Selection Process

Name: _____ Date: _____
Street Address: _____
City: _____ State: _____
Zip: _____
Phone: _____ Email: _____
Your Current Position: _____

Principal's Name: _____
School: _____

Please answer the following questions:

1. Why do you want to become a technology mentor? _____
   _____

2. Cite at least two ways you apply technology in instructional classroom practices.
   _____
   _____

3. Do you currently participate in a technology mentoring program? If yes, state the location where you are mentoring and how long you have been a technology mentor.
   _____
   _____

4. List three qualities or skills you feel you have that would benefit teachers who are seeking to integrate technology into their classroom practices.
   _____
   _____

Please return this form to the Technology Mentoring Program Coordinator!

Technology Mentee Application

Selection Process

Name: _____Date: _____
Street Address: _____
City: _____ State: _____
Zip: _____
Phone: _____ Email: _____
Your Current Position: _____

Principal's Name: _____
School: _____

Please answer the following questions:

1. Why do you want to become a technology mentor? _____
   _____

2. Are you willing to work with a mentor to gain technology proficiency? _____

3. What types of activities would you like the technology mentor to assist you with?
   _____
   _____
   _____

4. List at least three qualities or skills you possess. _____
   _____
   _____

Please return this form to the Technology Mentoring Program Coordinator!

Mentor/Mentee Action Plan

Training

Mentor Name: _____
Mentee Name: _____

Using the "**Activities to Meet Objectives Form**" (see attached), select the activities you will complete collaboratively to satisfy the program goals/objectives.

Objective 1: Develop at least two technology-rich instructional materials to enhance the teaching and learning process.

a. _____

b. _____

Objective 2: Use at least one form of technology to communicate and collaborate with peers, parents, and others to nurture student learning.

a. _____

Objective 3: Identify and locate at least three technology resources to enhance classroom instruction.

a. _____

b. _____

c. _____

Projected Timeline: Use this space to list specific steps and/or tasks you and your partner plan to perform to accomplish your activities. If additional space is needed, use the reverse side of this page to complete your responses.

For example, by the end of the _____ (Fall or Spring) semester, we will do the following:

This form will become the contract between you and your partner. The Program Coordinator will collect this form at the end of the Initial Training Session. A copy of this form will be forwarded to you within two days.

Signatures

Mentor Signature: _____Mentee Signature: _____
Technology Mentor Program Coordinator: _____
Date: _____

The following documents are in support of

Recruitment and Training

Mentors Recruitment Flyer

Mentees Recruitment Flyer

Initial Training Session for Mentors and Mentees Announcement

Technology Mentoring Program

Now Accepting Applications
For
Mentors

Do you exhibit these qualities?

Motivator?

Respect others?

Share ideas?

Strong communication skills?

Technology user?

YES?

We need you!!!

Information and application is available from the main office
Application Deadline **May 2nd**

Advanced technology skills are ***Not*** required

For Additional Information
Please contact the Program Coordinator at
540-777-7777

Technology Mentoring Program

Now Accepting Applications
For
Mentees

Eager to improve technology skills?

Willing to collaborate?

Have a positive attitude?

YES?

This program is for you!!!

Information and application is available from the main office
Application Deadline May 10th

For Additional Information
Please contact the Program Coordinator at
540-777-7777

Training Session for Mentors & Mentees
Announcement

Technology Mentoring Program Training Session

For

Who: Mentor & Mentee Program Participants

When: 8:00 a.m. – 12:00 noon

Wednesday, Jul 15th

Where: IALR Conference Room 2

Danville, VA

Lunch will be served

Email the Program Coordinator to Register:

2weekly@ialr.edu

Vitae

2303 Killarny Dr
Greensboro, NC 27406
Phone: 336.299.6537
Email: barbramosley@aol.com

Barbra F. Mosley

EDUCATION:

Virginia Polytechnic Institute and State University (Virginia Tech)
Blacksburg, VA
Ph.D. – Curriculum & Instruction - Instructional Technology, Feb 2005

North Carolina A&T State University, Greensboro, NC
M.S. - Educational Media, May 1987

Former United States Air Force Officer (CAPTAIN-rank last held)
Active dates, June 1977 to Oct 1985

North Carolina A&T State University, Greensboro, NC
B.A. - History, May 1976

PROFESSIONAL EXPERIENCE:

2004 Jan – Present

North Carolina A&T State University, School of Technology, Greensboro, NC 27411
Adjunct Instructor – Jan 2004 – Present
Teach ECT101 – Microcomputer Applications. This course is designed to provide students with basic computer skills as required in a typical business environment. Students demonstrated proficiency using MS Office products, web page design, and various emerging technologies. Create and modify web pages for all departments within the School of Technology.

Teach ECT 201 – Introduction to Programming. This course focuses on the basic application of HTML through Advanced HTML in the field of Electronics, Computer & Information Technology.

2004 Jul – 2004 Aug

North Carolina A&T State University, School of Technology, Greensboro, NC 27411
Summer Institute
Instructor – SMET Summer Program (Science, Mathematics, Engineering and Technology)
Taught computer workshops utilizing a variety of software applications (e.g., MS PowerPoint, Word, Excel, and MS FrontPage). Students developed and displayed web pages of coursework created.

2001 Aug – 2003 Dec – Graduate Assistant, Virginia Tech, Blacksburg, VA 24061

Graduate Assistant: Aug 2003 – Dec 2003
Worked under the direction of Dr. Jane Falls, Director, Informational Technology Services Unit, College of Liberal Arts and Human Sciences. Designed and conducted computer workshops to assist faculty and staff with the use of a variety of software applications and hardware. Conduct presentations to educational practitioners on computer hardware and software components. Served as a PALM consultant for the Teacher Education program.

Graduate Assistant: Jan 2003 – May 2003
Worked under the direction of Dr. Jane Falls, Director, Informational Technology Services Unit, College of Human Resources and Education. Responsible for troubleshooting and problem-solving hardware and software problems for faculty and staff. Design and conduct computer workshops to assist faculty and staff with the use of a variety of software applications and hardware. Conduct presentations to educational practitioners on computer hardware and software components.

Graduate Assistant: Aug 2002 – Dec 2002
Worked under the direction of Dr. John Burton, Chairman, Department of Teaching and Learning, College of Human Resources and Education. Responsible for providing technical assistance and support to faculty/staff/students associated with the college. Troubleshooting network, hardware/software problems, include setting up new computer equipment/devices, installation of operating systems and software applications for faculty and staff. Conducted computer workshops that supported the use of emerging technologies.

Graduate Assistant: Jan 2002 – May 2002
Graduate Assistant, working under the direction of Dr. Ken Potter, Coordinator, Instructional Technology Master's of Arts Distance Education Program. Primary grader for several of the online technology courses. Provided immediate feedback to distant education students to ensure understanding of content related materials. Collaborated with staff to revise and produce updated instructional modules for distant learners in a timely manner.

Graduate Assistant: Aug 2001 – Dec 2001
Worked under the direction of Dr. John Burton, Chairman, Department of Teaching and Learning, College of Human Resources and Education. Responsible for troubleshooting and problem solving hardware and software problems for faculty and staff. Provide technical and software assistance to students utilizing the computer labs. Managed and maintained the Video Production Lab.

2001 Jun & 2002 Jun
North Carolina Agricultural and Technical State University, Greensboro, NC
Summer 2001 and Summer 2002
Instructor – SMET Summer Program (Science, Mathematics, Engineering and Technology). Taught a five-week course using a variety of software applications (MS PowerPoint, Word, Excel, Access). Students were also taught to utilize web page design software to display coursework.

2000 Jan – 2001 May
North Carolina A&T State University, School of Technology, Greensboro, NC 27411
Adjunct Instructor – Jan 2000 – May 2001
Taught several sections of ECT101-Technical Computers I. This course was designed to provide students with basic computer skills as required in a typical business environment.

Greensboro College, Computer Science, Greensboro, NC 27401-1875
Adjunct Instructor - Aug 1998 - May 2000
Taught several sections of a computer course designed to provide students with basic computer applications skills.

1996 Jun – 2000 May
Royal Educational Services, 2303 Killarny Dr, Greensboro, NC 27406
Owner/Consultant/Facilitator - Jun 1996 - May 2000
Provided contractual services to clients on the use of technology in the workplace. Conducted computer workshops and personal training on the use of software applications.

1999 Jan – 1999 Mar
Guilford Technical Community College (GTCC), Continuing Education, Jamestown, NC 27282
Part-Time Instructor - Jan 1999 - Mar 1999

Taught computer application courses to non-traditional students.

1996 Dec – 1998 Jun

Bennett College, Dept of Curriculum & Instruction, Greensboro, NC 27401
Instructional Technology Specialist - Dec 1996 - Jun 1998
Managed the Instructional Technology Services Lab. Team-taught instructional technology courses for preservice teachers. Designed and conducted technology workshops for faculty/staff/students. Responsibilities included: troubleshooting network, hardware/software problems, including the setup of computers and equipment. Provided technical assistance to faculty and staff regarding the implementation of technology for classroom use. Implemented the state mandated technology competency skills test for teacher education majors.

1993 Feb – 1996 Dec

North Carolina A&T State University, School of Education, Greensboro, NC 27411
Educational Media Specialist/Technologist - Feb 1993 - Dec 1996
Managed the instructional technology computer lab, provided instructional services and training to faculty/staff/students. Taught undergraduate and graduate technology courses.

1992 Apr – 1992 Sept

UNC-Center for Public Television, Office of Educative Services, Research Triangle Park, NC
Instructional Television Utilization Specialist - Apr 1992 – Sept 1992
Coordinated the Sesame Street (PEP) Preschool Education Program. Trained daycare providers throughout the state of North Carolina on the use of the Sesame Street educational program. Received recognition for implementation of an effective training strategy.

1989 Jun – 1991 Sept

Yokota Air Base, JAPAN, Office of Education Services
Education Specialist - Jun 1989 - Sept 1991
Provided educational guidance and counseling for military members and their significant others. Developed a computerized counseling tool to minimize time spent with individuals.

1989 Jan – 1989 Jun

Camp Zama Army Installation, JAPAN, Office of Public Affairs & Relations
Director, Radio & Television Studio - Jan 1989 - June 1989
Managed and maintained the radio and television facility which supported the entire military community at Camp Zama. Supervised military and civilian personnel. Assigned and appointed personnel to support the public affairs office in the Pacific Asian division.

1988 Aug – 1988 Dec

Yokota, JAPAN, Department of Defense Schools (DODS)
Substitute Teacher – Aug 1988 – Dec 1988
Taught several classes for middle and high school students.

1987 Jan – 1987 May

Veterans Readjustment Center, Greensboro, NC
Veterans Graduate Assistant - Jan 1987 - May 1987
Provided counseling services for personnel. Conducted workshops on computer use and resume writing.

1986 Sept – 1986 Dec

Wesley Long Community Hospital, Office of Education Services, Greensboro, NC
Educational Media Intern - Sept 1986 - Dec 1986
Maintained the closed circuit television system and provided technical assistance to ensure daily transmission of the television signal. Televised closed circuit programs of the various surgeries performed in the hospital for training purposes.

1986 Jan – 1986 Aug
Ogden City Schools, Ogden, UT
Substitute Teacher - Jan 1986 - Aug 1986
Taught several classes for middle and high school students.

MILITARY POSITIONS:

1984 Nov – 1985 Oct
Hill Air Force Base, UT
Detachment Commander - Aerospace Audiovisual Squadron - Nov 1984 - Oct 1985

1982 Jun – 1984 Nov
Hill Air Force Base, UT
Television Producer/Director - Jun 1982 - Nov 1984

1981 Oct – 1982 Jun
Norton Air Force Base, CA
Motion Picture Editorial Division, Branch Chief - Oct 1981 - Jun 1982

1977 Oct – 1981 Oct
Norton Air Force Base, CA
Motion Picture Producer/Director - Oct 1977 to Oct 1981

TECHNICAL EXPERTISE:

Telecommunications: Excellent working knowledge accessing the Internet, designed, created and maintained Web pages.
Hardware: IBM/IBM-compatible personal computers and Macintosh, Scanners, LCD projection panels, Laserdisc players, Dot Matrix, LaserWriter, Inkjet printers, Video Cameras, and Television editors.
Communications: Excellent written and oral communication skills, working knowledge of television editing and multimedia presentation technology delivery systems.
Software Applications: MS Office, PageMaker, ClarisWorks, HTML, PageMill, Adobe Photoshop, HyperCard, WordPerfect, Dreamweaver, MS Publisher, Claris Homepage, and HyperStudio.

INSTRUCTIONAL TECHNOLOGY BACKGROUND:

Instructional Design: Designed materials and implemented instructional strategies to enhance learning within both educational and workplace environments. Design and develop training aides/instructional materials to assist faculty with implementing computer technology in the classroom. Evaluate and recommend computer software and hardware for faculty, staff and student usage.
Instructional Delivery and Support: Delivered basic through intermediate level computer instruction and seminars for faculty, staff and students in developing computer skills to enhance classroom instruction. Conducted training workshops to provide faculty, staff and students with the most cost effective products for use in training environments. Initiated and coordinated follow-up activities to stimulate and encourage continued usage of technology.

MULTIMEDIA INTEGRATION BACKGROUND:

Management: Managed and supervised all aspects of a radio/television facility to create an effective and productive working environment. Organized and facilitated training for all personnel. Developed and created training programs to enhance personnel skills in the use of state-of-the-art technology.
Multimedia Productions: Designed, produced, and directed audiovisual/television productions (i.e., multimedia presentations, public service announcements, photographic/slide productions) for agencies seeking to increase productivity and awareness through the development of creative presentations.

PROFESSIONAL BACKGROUND:

Human Services: Counseled military personnel and dependents on educational needs and vocational opportunities. Developed a computerized database to adequately minimize the volume of personnel seeking assistance on a monthly basis.

Substitute Teacher: Experience developing and implementing supplemental teaching aides for courses in English, History, Health & Physical Education, Geography, Social Studies and Mathematics. Prepared and coordinated workshops for teachers to develop skills in the utilization of video and slide-tape productions in the classroom.

PUBLICATIONS:

Edwards, G., & Mosley, B. (1998). If I teach...with technology, they will learn! But what? *Proceedings of the 9th International Conference of the Society for Information Technology and Teacher Education*, 676-679.

Edwards, G., & Mosley, B. (1996). Make it real and personal - KISS! (**K**eep **I**ncorporating **S**ensible **S**tatistics), *Tenth National Conference for Computers on Campus Annual.*

Mosley, B., & Edwards, G. (1995). Skill development for maneuvering on the information highway, *1995 National Educational Computing Conference (NECC) on Emerging Technologies: Lifelong Learning Annual*, 17-18. (ERIC Document Reproduction Service No. ED 385269)

PRESENTATIONS:

Falls, J., & Mosley, B. *Handheld computers in the classroom: Part I*. Classroom demonstration of Palm handheld computer peripherals and their use in K-12 instructional environments. Presented at the Virginia Society for Technology in Education (VSTE), Roanoke, VA. March 14 – 16, 2004.

Mosley, B., & Falls, J. *Handheld computers in the classroom: Part II*. An interactive exploration of handheld computer software and its use in the classroom. Presented at the Virginia Society for Technology in Education (VSTE), Roanoke, VA. March 14 – 16, 2004.

Edwards, G., & Mosley, B. *If I Teach ... With Technology, They Will Learn! But What?*
A paper documenting students' attitudes towards technology. Paper presented at the Society for Information Technology and Teacher Education Conference (SITE), Washington, D.C., March 10-14, 1998.

Edwards, G., & Mosley, B. *Make It Real and Personal! KISS!!! (Keep Incorporating Sensible Statistics).* An interactive session on classroom strategies for teaching basic statistics to pre-service and in-service teachers presented at the Tenth National Conference for Computers on Campus, Myrtle Beach, South Carolina, November 10-13, 1996.

Edwards, G., & Mosley, B. *BEHOLD! Something Old, Something New, Something Borrowed, Different View ... Helping Teachers Teach With Technology.* Instructional project accepted as an alternate presentation for the National Educational Computing Conference (NECC) in Minneapolis, Minnesota. (June 1996)

Edwards, G., & Mosley, B. *A New Face in the Classroom.* Classroom demonstration presented at the Kentucky Education Technology Conference (KETC'96) in Louisville, Kentucky on February 29 - March 3, 1996.

Mosley, B., & Edwards, G. *Skill Development for Maneuvering on the Information Highway.* Classroom demonstration presented at the 1995 National Educational Computing Conference (NECC) on Emerging Technologies: Lifelong Learning, Baltimore, Maryland, June17-19, 1995. (ERIC Document Reproduction Service No. ED 385269)

GRANTS:

Mosley, B. & Edwards, G. (November 1995). *Surfing the Net*, for $400. Granted by: North Carolina Agricultural and Technical State University Student Industry Cluster to conduct research for using the information resources available via the World Wide Web.

Edwards, G. & Mosley, B. (October 1994). *In Search of a Priceless Commodity -- Information*, for $1,000.00. Granted by North Carolina Agricultural and Technical State University Student Industry Cluster to conduct research for developing and applying relevant computer skills to various workplace environment.

CERTIFICATIONS:

- Microsoft Office User Specialist (MOUS) ……MS Word, MS PowerPoint, & MS Excel

PROFESSIONAL AFFILIATIONS:

- Association for Educational Communications and Technology (AECT)
- International Society For Technology in Education (ISTE)
- Association for the Advancement of Computing in Education (AACE)
- Eastern Educational Research Association (EERA)
- Kappa Delta Pi International Honor Society in Education
- Phi Sigma Theta National Honor Society

PROFESSIONAL AND COMMUNITY SERVICE:

Committees: Community Technology Center Steering Committee; Vance H. Chavis Lifelong Learning Branch Library, Greensboro, NC. September 1996 to Present.

Published Poet: Many Voices/Many Lands International Poetry Anthology, February 1989