BUSINESS EDUCATION TEACHERS PREPAREDNESS TO INTEGRATE TECHNOLOGY INTO THE CURRICULUM

by

BRYANT S. BRAZEAL

(Under the Direction of Myra N. Womble)

ABSTRACT

As the global society has become more technologically advanced, the need to integrate technology into the curriculum by secondary school teachers has become increasingly more important. Business education teachers, with a unique curriculum focus on technology, and the preparation of secondary school students for the workplace, have an opportunity to become leaders and champions of technology integration. However, to become successful technology integrationist business education teachers must be afforded with opportunities to develop technology integration skills in both the preservice teacher preparation and professional development training programs. Understanding how business education teachers perceive technology-related preservice teacher preparation and professional development training is a key component of their decision to integrate technology into the curriculum. Accordingly, the purpose of this study was to describe high school business education teachers' perceptions about their preparedness to integrate technology into the curriculum.

Qualitative research methods were used to obtain data from ten high school business education teachers in a Southeastern US metropolitan area. Data analysis was performed using

the constant comparative method. Data were analyzed, sorted and coded into categories and themes pertaining to the research questions for this study.

Three themes emerged for the first research question, which addressed business education teachers' perceptions of five specific categories of technologies as instructional tools. The themes were: (a) real-life experiences, (b) relevancy of learned technology, and (c) assumed proficiency. For the second research question, addressing business education teachers' perception of their technology-related preservice teacher preparation and professional development, two themes emerged from the data analysis. The themes were: (a) pedagogical foundations and (b) continuing education.

It was concluded that business education teachers' perceived their technology-related preservice teacher preparation and professional development training as having not prepared them to integrate technology into the curriculum. However, as Hughes (2004) reported, to become technology integrationists, business education teachers must possess the ability to understand, consider, and choose to use technologies only when that technology uniquely enhances the curriculum, instruction, and students' learning.

INDEX WORDS: Technology Integration, Technology, Preservice Teacher Preparation, Professional Development Training, Vocational Education, Business Education, Career and Technical Education, Technology Innovation

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BRYANT S. BRAZEAL

B.S., The University of Georgia, 1990

M.Ed, The University of Georgia, 1993

A Dissertation Submitted to the Graduate Faculty of The University of Georgia in Partial Fulfillment of the Requirements for the Degree

DOCTOR OF EDUCATION

ATHENS, GEORGIA

2007

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BRYANT S. BRAZEAL

Major Professor: Myra N. Womble

Committee: Elaine Adams
Karen H. Jones
Jay W. Rojewski
Clifton Smith

Electronic Version Approved:

Maureen Grasso
Dean of the Graduate School
The University of Georgia
December 2007

DEDICATION

In memory of my grandfather, Reverend Charles Prentice Brown, Sr. His words of encouragement and admonition "to go to college" never left me; I miss you Papa. To my grandmother, Mrs. Ludie Pearl Brown, I couldn't asked for a better "Grandma"; I love you. To the memory of Grandpa Rev, Eugene Dudley Brazeal, Sr. and the late Cora Brazeal, you will always be a part of me.

ACKNOWLEDGEMENTS

To my partner, Dr. Ian C. Barrett, EdD, I humbly, gratefully, and lovingly acknowledge you as the person who stood by me throughout this whole process. I could never have completed this journey without your love and support. To my committee chair, Dr. Myra N. Womble, thank you for listening to me and encouraging me to stay on course. To my parents who always encouraged me and referred to me as their child who likes to go to school, your love and support over these long years of education have made me stronger, wiser and a better person. To my dear friends, Kevin Westray, Van Rountree, Marvin Lackey, Phil Stowers, Jerry Hutchins, Jimmy Johnston, Renee Montford, and Tony Dunn, you always had a word of encouragement; I celebrate you and our continued friendship. To my committee members, Dr. Elaine Adams, Dr. Karen Jones, Dr. Jay Rojewski, and Dr. Clifton Smith, thank you, thank you, thank you.

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Introduction

In 1999, the U.S. Department of Labor reported that Americans were living in a time that few could have imagined a half-century earlier. In the late 1990s Americans were living in what would be referred to as a new economy; an American economy that was powered by technology, fueled by information, and driven by knowledge (U.S. Department of Labor, 1999). As America entered the twenty first century, the American population had a multitude of opportunities on its side. At the close of the twentieth century, the American economy was the strongest in a generation, perhaps in history. Additionally, the U.S. Department of Labor reported that unemployment was at a 30 year low, powered by an American economy that created more than nineteen million jobs during the presidency of Bill Clinton. During the economically prosperous times of the Clinton presidential era, the United States' national budget deficit changed from a sea of red ink to operating in the black. The U.S. Department of Labor further reported that working Americans were rewarded with higher wages and businesses experienced higher productivity as well. All of these positive economic indicators occurred while keeping the inflation rate in check. With all of those great accomplishments, other questions still remained, such as, "What will the workforce and workplace look like half a century from now?"

Technology's Impact on Society

The U.S. Department of Labor's (1999) report "Futurework: trends and challenges for the twenty first century," found that the use of computers and the Internet in American workplaces

will become more pervasive and the workplace functions performed by computers will increase as well. The report indicated that technology's influence will extend beyond new equipment and speedier communication channels, and that technology will influence the type of work and skills required of the workforce.

Another contributing factor to technology's influence on the American workforce in the late 1990s was increased global competition. Increased global competition affected not only the type of work that was being done in the American workplace, but it also created demand for new, highly-skilled jobs, thereby, decreasing the demand for low-skilled workers (U.S. Department of Labor, 1999). The impact of globalization on all Americans is projected to continue to grow in the future as more of the American economy is involved in producing exports or competing with imports. The U.S. Department of Labor (1999) further identified that technological innovations were also a contributing factor to the high rates of worker productivity experienced in the late 1990s. The technological innovations of the late 1990s fundamentally changed the world of work. In the workplaces of the late 1990s and into the twenty first century came the proliferation of special types of software and hardware, such as voice-recognition software and adaptive computer keyboards that enabled workers who would otherwise be left behind by technology to participate in the technological work environment. The U.S. Department of Labor (1991) declared that, "Technology today is everywhere, demanding high levels of competence in selecting and using appropriate technology, visualizing operations, using technology to monitor tasks, and maintaining and troubleshooting complex equipment."

No one today can avoid technology as it has permeated through every aspect of life, from the American home to the workplace (U.S. Department of Labor, 1991). Those unable to use technology to their benefit face a lifetime of menial work. There was once a time where the only

skills required of a worker were a strong back, the willingness to work, and a secondary school education, however, with the technological changes that occurred in the 1990s, workers will need a well-developed mind, a passion to learn, and the ability to put knowledge to work; these will be the keys to successful careers in the future. The U.S. Department of Labor (1999) found that technologies, globalization, and the information revolution have worked in unison, increasing the demand for a technologically adept American workforce.

With the continued rapid evolution of technology, the cycle of job growth, which includes eliminating obsolete jobs and creating jobs, will also continue into the foreseeable future (U.S. Department of Labor, 1999). The technology jobs created today require a workforce that is highly skilled, often requiring years of training and experience to qualify for the jobs. Employers have the expectation that workers in these job fields will be users of technology, such as office productivity software, automated billing and accounting systems and automated scheduling software according to the U.S. Department of Labor. Employers are no longer satisfied with workers whose skill set is limited to being good with figures and being detail-oriented. How will America ensure that current and future workers are educated and trained with the skills they need to succeed in the twenty first century workplace? Additionally, how will America ensure that those with lower educational levels are not left behind by the technological economy (U.S. Department of Labor)?

Technology in Career and Technical Education

Hendricks (2004) reported that classroom practice in the real world has become increasingly incongruent with the lived experiences of students and teachers. Policy dictates, packaged curricula, and the commercialization of the classroom, along with high stakes testing have objectified students. Students in today's secondary school classroom were raised in a world

filled with technology and generally are not cognizant of a world prior to technology's impact. Students are well versed and completely comfortable with negotiating in a technology filled society. Students have been utilizing technology since before they started kindergarten, whether it was the games they played or Internet sites they logged on to. Hendricks also found that technology makes possible a reconfiguring of school; a refocusing of everyday life, and the use of tools and techniques of technology expands the field of education. Technology is revolutionary phenomenon within today's secondary school classrooms.

As we move further into the twenty first century, workers will need to be better educated and trained to respond to the changes in job knowledge and the skill requirements of existing jobs. Life-long learning, a hallmark of career and technical education must become one of the pillars of the twenty first century economy (U.S. Department of Labor, 2003). The U.S. Department of Labor also found that education that prepares students for learning in this complex, technological, computer-centric society will be more meaningful to students and, ultimately, should result in a workforce that is more prepared for the technologically challenging careers of the future. A powerful vision of public education is critical for closing the gap between how students live and how they learn in school. Students who have access to technology and computers outside school will find schools without computer access and an integration of technology into their coursework, to be antiquated and irrelevant to their world. Students without computers at home and in the classrooms may ultimately find themselves relegated to the periphery of the twenty first century workplace. For these reasons, twenty first century skills, education, and training must be a local, state, and national priority (U.S. Department of Education, 2003).

Beginning in the early 1990s, workplaces required broader skills than ever before from workers. In response, there has been an intense pressure on all providers of workforce education and training to enhance the competitiveness of America's workforce (Holton & Trott, 1996). Holton and Trott also reported that in response to the globalization of the United States economy, businesses have gone through several iterations of right-sizing and downsizing initiatives in order to remain competitive and economically viable in the global marketplace. The quickening pace of technological innovations and the advent of computers on every desktop, combined with the demands for higher quality goods and services, have made some jobs and skills obsolete overnight. Business and industry have realized that their workforce must be better educated and technically trained, if the organization is to survive. (Rojewski, 2002) found that globalization of business markets has resulted in substantial increases in competition for labor and goods. Competition is particularly keen for highly skilled workers, though not exclusively in computer and technology-related areas. The largest labor needs are for persons with innovative and creative methods for (a) producing new products and services, or (b) promoting and marketing these new goods and services to consumers.

Rojewski (2002) reported that career and technical education occupies a unique position and an opportunity to influence change in terms of support, preparation, and guidance in the areas of people's lives likely to be affected by changes in the new economy. However, to be relevant, career and technology professionals must critically examine and modernize their underlying assumptions about the world of work and family life, and be willing to reconcile "the way we've always done things" with emerging directions of the economy and needs of the workforce. To do otherwise, it seems, is to quickly relegate career and technical education to a footnote in the history of public education in the U.S.

Career and technical educators must increasingly offer a full range of workforce preparation programs, from entry-level preparation to making the oldest employee more productive (Holton & Trott, 1996). The establishment of a fully integrated system of work performance enhancing institutions and providers will require that bridges be built that are only beginning to emerge. By linking preparation for work to continuing education, preparation for work becomes one of the anchors for an integrated continuum of workforce development programs. The synergy created should strengthen entry programs and enhance the economic competitiveness of graduates according to Holton and Trott. Holton and Trott also reported that this linkage is consistent with other calls for new relationships between education and work. The most pervasive comes for the U.S. Department of Labor report entitled "Secretary's Commission on Achieving Necessary Skills," more commonly known as the SCANS report. The report issued a resounding call for a more integrated system of institutions and systems called *learning a living* system, and pointed to the direct integration and dialogue between the world of work and educators.

The career and technical education system has moved from a period when highly job specific career and technical job training was in vogue, to a demand for workers based on preparation in an occupational family that may include appropriate general education components (Holton & Trott, 1996). Holton and Trott also found that business needs a more flexible, adaptable, and highly skilled worker to adapt to increasingly sophisticated technologies. This demand goes well with career and technical education's desire to maximize options and is consistent with the broader and more inclusive career and technical education curriculum.

Because students live in a world with unlimited access to information, it is critically important for schools and teachers to frame the content and context of their programs to include

the appropriate skills and knowledge that will allow the student to be successful. Teachers can use examples, applications and settings from students' lives, communities and modern workplaces to frame academic content (U.S. Department of Labor, 2003). Teachers can also expand the classroom by bringing in outside experts from the community. Technology makes it possible to bring the world into the classroom and get students out into the world with virtual outreach and excursions into the physical world. Technology also makes it possible to change the dynamic between students and teachers, allowing students to pursue topics in depth, and at times, become experts in charge of their own learning. In these ways, students can see the connection between their schoolwork and their lives outside the classroom, now and in the future. Moreover, this type of learning has led to higher academic achievement, lower dropout rates, better attendance and better college preparation. By teaching in a twenty first century context and using relevant content, educators can create a balanced education for students that reflect both national and local needs posits the U.S. Department of Labor. Harkins (2002) stated that career and technology must realize that the future of its profession is to become an umbrella paradigm for software-supported high performance and continuous innovation, in what are increasingly borderless interactions among living, learning and working contexts.

Technology and Preservice Teacher Preparation

Miller (1997) reported that while there is increased attention to the need to prepare new teachers to use technology effectively, most new teachers have limited knowledge of how technology can be successfully integrated into the curriculum. McIsaac and Vrasidas (2001) found that most pre-service teachers teach in the same manner in which they were taught. Therefore, teacher education programs should structure the learning environment so that modeling of appropriate uses of technology occurs as a part of the preservice teacher preparation

program. It is important that the teacher is an expert in technology-based learning so that when a preservice teacher becomes a classroom teacher, he or she can model this type of learning behavior to students. Technology rich environments allow preservice teachers to experience the real-life scenarios of classroom teaching, construct multiple perspectives, and reflect on their practice. McIsaac and Vrasidas posits that to effectively use computer software as a instructional tool, educators must not only be afforded opportunities to learn about technology integration in preservice teacher education programs, there must also be effective professional development training available to teachers that allow educators time to develop, master, and reflect on technology-based teaching approaches.

Technology and Professional Development

McIsaac and Vrasidas (2001) suggested that from an educational policy perspective, it is important to allow teachers paid time to participate in professional development activities. The report indicated that 82% of secondary school teachers in the United States cited the lack of release time for training as the most important barrier to integrating technology as a part of the curriculum. Dooley, Martinez, and Metcalf (1999) reported that through preservice teacher preparation and professional development, teachers gain the skills, knowledge and attitude to be successful with integrating technology. Teachers must not only have professional development training on integrating technology, but also on how technology can become part of their training and teaching repertoire.

Mouza (2002–2003) reported that professional development is a critical component in the effective use of technology in the classroom. The report found that in 1998, only 36% of teachers stated that they had received between 1 to 5 hours of technology training. Additionally, one-third of respondents indicated that they had received no technology training at all. While

professional development opportunities in the use of technology are not always readily available, the study indicated that skill based technology training had made a positive difference for the teachers who received the training. Teachers who received skill-based training felt more confident using technology, made more use of technology in the classrooms, and were more willing to experiment than teachers who did not receive technology training. In addition, Mouza also found that teachers who received technology training were much more prepared to integrate technology as part of the curriculum.

Technology and Business Education

Scott (2002) found that until the middle of the 20th century, high school business education curriculum focused almost exclusively on preparing students for a particular occupation. This singular focus has been replaced by a dual focus of preparing some students for the world of work and preparing all students to function effectively in the business world. Stated in its simplest terms, business education is the education for and about business. In the case of business education, the words for and about business are major components, as those terms refer to the two distinct and complementary roles of the business education curriculum. The *for* business component of business education refers to the training of students for an occupation, while the *about* business component refers to the general business or personal use education for all students.

Throughout the changes in the workplace and the changing nature of the workers, the business education curriculum has repeatedly changed to meet the needs of society (Scott, 2002). Scott also found that during the latter half of the twentieth century, the education for business largely focused on occupational intelligence and job training. Occupational intelligence is defined as building skills that allow workers to gain a sense of self-satisfaction and fulfillment

with their work. Job training is defined as building the skill set necessary to become a productive worker. Business education teachers have felt very comfortable providing both of these two key components in response to the rapidly changing technological advances experienced during the latter part of the twentieth century. Scott also posits that the rapid pace of technological change has resulted in significant changes to the business education curriculum and what should be taught in the classroom. The dominant business education subjects of keyboarding, shorthand, and accounting have given way to a more advanced curriculum that now includes computer applications software, computer hardware, networks, the Internet, and e-commerce. The education *about* business requires a somewhat different content and experience base than the education *for* business. Additionally, Scott suggested that business education teachers often do not feel adequately prepared by their educational programs to teach and enhance student learning in both occupational intelligence and job-training.

Kizzier (1995) found that high school business education teachers have served as both pioneers and leaders in teaching students technology. Business education teachers prepare students with the competencies to productively use business hardware and software. Kizzier also found that business education teachers have done an excellent job of teaching students how to use office productivity software such as word processing, spreadsheet, database, graphics, desktop publishing, and other software packages. However, Kizzier suggested that business education teachers have struggled to add relevant competencies to the curriculum that reflect the ever-changing nature of technology.

In addition to teaching students about technology, business education teachers have begun to use technology as an instructional tool (Kizzier, 1995). Those business education teachers integrate technology as an instructional tool in one of two ways: (1) students use the

technology as a vehicle to learn skills and concepts beyond the technology itself, or (2) the teacher uses technology to compliment classroom lectures. When students use the Internet to facilitate academic research, the students are also learning how to use the web without the benefit of formal instruction. Business education teachers can benefit from this informal instruction by using the students knowledge of the Internet as a means to facilitate teaching a concept according to Kizzier.

In contrast to Kizzier (1995), Kotrlik and Redmann (2004) found that high school business education teachers were using advanced levels of technology integration in the curriculum. Kotrlik and Redmann found that the phases of technology integration in which high school business education teachers are most active are in exploration of the potential of integrating technology in the teaching and learning process and in adopting technology for regular use in instruction. Additionally, Kotrlik and Redmann reported that high school business education teachers have substantially more strength in the adoption phase and are stronger in the exploration and advanced integration phases than other career and technical education teachers.

Miller (1997) conducted a quantitative study that sampled high school business education teachers as well as other career and technical education teachers, about their use of computer software packages as a resource tool in the courses that they taught during a specific academic year. The computer software packages studied were: (a) productivity software, defined as word processing, spreadsheet, database management, and integrated software, (b) graphic applications, defined as presentation and desktop publishing software, (c) interactive technologies, defined as authoring software, multimedia, and CD-ROM, (d) telecommunications resources, defined as the Internet, electronic mail, commercial on-line services, and electronic bulletin boards, and (e) computer-assisted instruction, defined as simulations and games, drill and practice, tutorials and

discipline-specific programs. The list of computer software was meant to focus on the ability of teachers to utilize and integrate a wide variety of educational technology applications to enhance student learning and to increase teacher productivity.

Miller's (1997) findings indicated that the total computer software usage by high school business education teachers was not significantly different than the other participants. The findings for business education teachers were surprising given the general perception that the business education curriculum would be utilizing computers and software packages at a higher rate than that of other teachers. Another significant finding of the study was that when business education teachers did integrate technology in the curriculum, the most typical use of computer software was often limited to office productivity software such as word processing. Miller's study was quantitative and measured the levels of use of specific software and computer technologies. This qualitative study focused solely on high school business education teachers' perceptions of integrating technology into the curriculum. Additionally, this qualitative study was concerned perceptions of technology integration, not the actual levels of use of technology by the participants.

Definition of Technology Integration

Kotrlik and Redmann (2004) defined technology integration as "employing the internet, computers, CD-ROMs, interactive media, satellites, teleconferencing, and other technological means in instruction to support, enhance, inspire, and create learning." Dugger (1999) defined educational technology as that "which involves using technological developments, such as computers, audiovisual equipment, and mass media to aid in teaching all subjects and is concerned with creating the optimum teaching and learning environment through the use of technology. Kizzier (1995) defined technology integration as an instructional tool that is used in

one of two ways: (a) students use the technology as a vehicle to learn skills and concepts beyond the technology itself, or (b) the teacher uses technology to compliment classroom lectures. Kotrlik and Redmann's definition of technology integration was used for this study. Additionally interview questions nine through thirteen in, Appendix A, defined the types of technologies used for this study.

Purpose of Study

The purpose of this qualitative study was to describe high school business education teachers' perceptions about their preparedness to integrate technology into the curriculum. The study explored high school business education teachers' perceptions about their knowledge and skills gained (preparedness) resulting from their (a) technology-related preservice teacher preparation and, (b) technology-related professional development. For this study, preservice teacher preparation was defined as formal training that lead to teacher certification. The phenomenological approach was used to guide this study of business education teachers selected from one metropolitan public school system in the southeastern United States. The specific categories technologies included productivity software, graphic applications, interactive technologies, telecommunications resources, and computer-assisted applications. This was not an intervention study and although some business education teacher perceptions about technology, levels technology integration, or technology use may have increased or decreased, those outcomes were not the focus of this study.

Research Questions

This study addressed the following research questions:

1. How do business education teachers describe their perceptions using five specific categories of technologies as instructional tools?

    a. Productivity Software
    b. Graphic Applications
    c. Interactive Technologies
    d. Telecommunication Resources
    e. Computer-Assisted Applications

2. How do business education teachers describe their technology-related preservice education preparation and professional development experiences?

Conceptual Framework

Crawley, Fine, and Sugar (2004) found that comprehensive technology adoption and integration can be an overwhelming task for most public secondary schools and teachers. The field of dreams syndrome, otherwise known as the build it and they will come syndrome, is too often applied in educational settings without success. As of 2002, Crawley, Fine and Sugar reported that although 92% of public school had computer access, only about one-third of teachers reported being well prepared or very well prepared to integrate technology for instructional use. A critical component in meeting teachers' technology integration needs is responding to how adopt and diffuse technology.

Rogers (1995) defined diffusion as the process by which an innovation is communicated through certain channels over time among the members of a social system. Diffusion is a special type of communication, in that the messages are concerned with new innovations. Communication is the process in which participants create and share information with one another in order to reach a mutual understanding. The newness of the innovation in the message

content gives diffusion its special character. The newness implies that there is a degree of uncertainty involved in diffusion. Diffusion is a kind of social change, defined as the process by which alteration occurs in the structure and function of a social system. When new ideas are invented, diffused, and are adopted or rejected, leading to certain consequences, social change occurs. Rogers indicates there are four main elements of diffusion: (a) innovation, (b) communication channels, (c) time, and (d) the social system.

A technological innovation usually has at least some degree of benefit for its potential adopters. This advantage is not always readily evident, at least not to the intended adopters. The adopters are often uncertain that a technological innovation represents a superior alternative to the previous practice that the innovation seeks to replace. A technological innovation creates an uncertainty about what is the expected outcome in the minds of potential adopters, as well as representing an opportunity for reduced uncertainty, meaning that the technological innovation may solve the adopters issue (Rogers, 1995).

Dooley et al. (1999) reported that in order for the educational environment to institute change, it is imperative that school personnel understand the diffusion process and its implication for the success or failure of innovations. If teachers see the benefit of a technological innovation, such as the use of technology integration as integral to an existing curriculum, the teachers will begin to overcome their resistance to technology. Hope (1997) found that the most technologically innovative solutions to practical problems and the best packages of materials could have no effect on educational practice if they are not diffused to the level of the practitioner. In light of the fact that few of America's 2.8 million teachers integrate technology in their teaching, it is safe to say that diffusion has not occurred in the educational environment according to Hope. Additionally, Hope suggested that without the proper diffusion of a

technological innovation, it is possible that technology will follow in the footsteps of other well intentioned innovations that never became integrated into the curriculum.

Rogers (1995) indicated that technological innovation creates an uncertainty about what is the expected outcome in the minds of potential adopters. Hope (1997) suggested that teachers refrain from integrating technology in the classroom because technology causes them to question their existence as educators. For teachers to integrate technology into the curriculum, they must see it not as a challenge to professional roles, but as a tool that will make their work easier. Most teachers are concerned about what technology integration will mean to them personally and professionally. Teachers need to have sufficient opportunities to practice integrating technology into the curriculum, and they need technical assistance when they have questions or problems. Hope posits that if the proper support and resource structures are not in place, then teachers will be more resistant to integrating technology into the curriculum.

Delimitations

When the American Vocation Association was formed in 1926, it had six sections: agricultural education, commercial education, home economics education, industrial education, part-time schools and vocational rehabilitation. At its 75th annual convention, the Association of Career and Technical Education (2002), which evolved from the American Vocational Association, identified its umbrella of programs as career and technical education; this included business education. The other eleven divisions reported were: administration, adult workforce development, agricultural education, family and consumer sciences education, guidance, health occupations education, marketing education, new and related services, special needs, technology education and trade and industrial education. Alfeld, Kowske, and Stone (2004) reported that business education is most frequently referred to as one of the career and technical education

programs in secondary schools. Also, the Georgia Department of Education (2007) includes business education as part of its career, technical and agricultural division. The Georgia Department of Education's curriculum framework references identified the following business education programs: accounting, financial services, office systems and support services, and information technology. Hoachlander (2005) also indicates that vocational education is now more commonly called career and technical education. For this study, Alfeld et. al (2004), the Georgia Department of Education (2007) and Hoachlander (2005) provided the link between career and technical education and business education.

This qualitative study was limited to the perceptions of business education teachers in one metropolitan public school system in the Southeastern U.S. The results of the study cannot be generalized to other career and technical education programs or other populations other than those participants included in the study. Yin (2003) stated that qualitative studies are generalizable to theoretical propositions and not to populations or universes. The goal of the qualitative study was not to expand analytical generalization of theories or to enumerate statistical generalization to other populations.

Significance

Kizzier (1995) reported that teachers are offered a tremendous opportunity as well as a challenge to discover ways to effectively employ the vast array of complex technologies into the curriculum. Given their unique history in technological leadership, high school business education teachers play a vital role in applying these technologies to help springboard education further into the twenty first century. Kizzier also found three impacts to high school business education teachers with regard to using technology as an instructional tool. First, with the shift from teacher-directed to student-directed learning, a new type of teacher will be needed in

business education; a teacher who is not only technologically literate, but also trained to design and effectively integrate technology such as multimedia and distance education. Second, high school business education teachers should use their unique background in technology to facilitate effective and creative uses of technology across the curriculum. Third, Kizzier indicated that with their background of leadership in using, planning, and implementing technology, high school business education teachers will play a key role in technological planning and implementation for secondary and post-secondary institutions.

Current changes in teacher beliefs and practices indicate that high school business education teachers are finding more creative ways of integrating technology to meet students' educational needs. Widespread integration of technology allows students to explore and practice advanced skills; work and learn in more interactive, collaborative, and multidisciplinary ways, and demonstrate their learning through performance-based projects. As funding has increased for technology, technology-related professional development has increased (Harkin, 2002; Jurist, 1999). This increase in professional development opportunities, along with increased assistance from technology specialists will enable business education teachers to grow in their roles as learning facilitators and ensure that all students are well educated. Business education research has examined technology integration in instructional delivery methods and found that students generally respond favorably to the integration of technology in the curriculum (Harkins, 2002; Jurist, 1999). Kizzier (1995) indicated that the challenge and opportunity for business education teachers is to use their unique technological background and leadership skills to facilitate the change process related to technology integration into the curriculum.

Findings from this study provided a thorough description of high school business education teacher's experiences that contributed to their preparedness to integrate technology

into the curriculum. This type of information will be useful for designing and improving on instruction for integrating technology in preservice teacher preparation programs and professional development training.

CHAPTER 2

Literature Review

Technology is just a tool. In terms of getting the kids working together and motivating them, the teacher is the most important classroom element; however, nothing inspires as much hope and as much fear as computer technology (Walker & White, 2002). The goal of technological literacy has general acceptance in the education profession, however, no consistent plan has emerged for organizing technology education across states and local school districts (Erekson & Shumway, 2006). Barzilai and Frank (2006) reported that we live in a society that increasingly depends upon technology. Citizens who understand and are comfortable with the concepts and workings of modern technology are better able to participate fully in society and in the global marketplace.

A report by the Office of Technology Assessment or OTA (1995) stated that a central question for educators has always been "how can this help my students?" This critical question should remain key to educators even as technology and the use of technology begins to permeate the classroom. The report also indicated that while there has been considerable research on student outcomes related to the use of technology, teachers are also affected by technology. Helping teachers integrate technology, may be the most important step to helping students. Furthermore, the report indicated that while helping teachers may be the most important step toward helping students, there is almost no hard data on the impacts of technology on teachers. Judson (2006) indicated that few would argue that technology will continue to become even more embedded in the classroom learning experience. Teachers have a myriad of methods from

integrating technology, from allowing students full access to available classroom technology, to limiting technology's integration and maintaining tight control over the curriculum and instructional methods.

Judson (2006) found that the existing literature is missing evaluative data that comes from observation of classroom teachers and their integration of technology the teaching and learning process. Correlating observations of how classroom teachers integrate technology into the curriculum and understanding those teachers perception about the nature instruction and their attitudes about technology, has not been sufficiently examined in the literature. Judson also stated that it is important to note that technology integration should not be considered a panacea for instructional reform. The integration of technology into the classroom curriculum should be viewed as an enabling tool for student learning and a means of creating unique interpretations.

Hadley and Sheingold (1993) reported that there hasn't been substantial research on impact of technology integration and classroom teachers. Their study indicated that existing data on teachers and technology integration was primarily focused on teachers who were considered enthusiastic, pioneering, or accomplished users of technology. The results of the survey instrument used by Hadley and Sheingold indicated that it took the average teacher five to six years to develop a comfort level with integrating technology into the curriculum. However, after integrating technology into the curriculum, the teachers reported more flexibility with instructional methods and increased comfort level with integrating technology-related applications.

The media, the legislature, and researchers have all given some degree of attention to the general issues of teacher preparation. However, the task of improving teacher preparation is significant (McCaslin & Parks, 2002). Ferrini-Mundi, Floden and Wilson (2001) found that

there is a positive connection between how well a teacher is prepared in their subject matter and their effectiveness as a classroom teacher. However, their study indicated very little definitive research has been conducted on the kinds of preservice, subject matter teacher preparation that occurs at the post-secondary level. Ferrini-Mundi et al., posits that little research has been conducted on what makes a good career and technical education teacher and how that teacher contributes to the academic and technical achievement of their students. Additionally, there is not a significant body of scholarly research regarding what business education teachers do in the classroom. Finally, there is little in the literature regarding what constitutes an effective business education teacher preparation program. Evans and Gunter (2004) reported that additional studies should focus on what can be done to expose preservice teachers to a wider array of technology applications and technology rich student-teaching field experiences. Furthermore, Evans and Gunter suggested that researchers would benefit from investigating ways to increase the number of college of education faculty members that integrate technology into preservice teachers' content courses.

McCaslin and Parks (2002) indicated that a central theme of education is to prepare students to continue to improve the society in which they live. A society's education program must be aligned to its political, social, and economic way of life. For business education programs, which have a stated goal of educating students for the workplace, it is especially true that the curriculum is aligned with the needs of the society. Kotrlik and Redmann (2004) reported that the business education field must further its research efforts to help teachers and schools integrate technology at all levels. Some suggested areas of additional research included: (a) examining various factors to determine their impact on learning in a technology support learning environment, (b) evaluating the benefits of specific technologies, (c) the effects of

learner types of technology integration, (d) interdisciplinary activities, and (e) examining the barriers to technology integration. Lewis (1997) posited that research on technology should examine the experiences of beginning teachers and exemplary teachers. The research would seek to understand just what teachers of technology do in their classrooms', the practical and professional knowledge they draw upon, and the contextual factors that impact how the teachers teach, needs to be examined. How students perceive technology, whether technology adds benefits to the classroom experience, and whether students perceive technology and computers as the same were also suggested as additional research according to Lewis.

Evans and Gunter (2004) suggested that additional research should focus on preservice technology-related preservice teacher preparation, the technology proficiency of preservice teachers, and what barriers prevent preservice teachers from perceiving themselves as equipped to integrate technology into their future classrooms. McCaslin and Parks (2002) also suggested that additional research could identify some optimal approaches for teacher training, in both preservice teacher preparation and in-service teachers, in a technology environment. The types of questions that could be addressed by such additional research on technology integration include: (a) what should the future structure of teacher education look like? (b) What is the appropriate level of technology integration for preservice business education teacher programs? (c) How does proficiency with technology impact a teacher's ability integrate technology? (d) What impacts do philosophical, political, and other local realities have on technology integration and how should these realities be addressed? Lewis (1997) suggested that technology is transforming the environment beyond the broad front of occupation for which career and technical education programs are preparing their students. However, technological change

remains a relatively unexplored area of inquiry in business education research and it barely informs theories on the curriculum in the field.

Technology's Impact on Classroom Teachers

Kotrlik and Redmann (2004) defined technology integration as "Employing the internet, computers, CD-ROMs, interactive media, satellites, teleconferencing, and other technological means in instruction to support, enhance, inspire and create learning." Ziegel (2004) found that the use of technology in education was slowly shifting from use as a tool for technology's sake to a separate set of curricular learning goals necessary for a variety of competencies. However, the lack of teacher confidence in integrating technology has either halted or resulted in less than optimal use of technology. Ziegel posits that technology integration in the classroom can mean that teachers need training in a variety of competencies. Teachers who have not previously used technology may need technical training. Teachers may also need to learn how to design the type of lessons that capitalize on the benefits of technology integration. Teachers must learn to integrate technology only in instances where technology is the tool that best supports the learning goal. Okojie-Boulder, Okojie, and Olinzock (2006) stated that the problem of technology integration has become a perennial one. While a multitude of excuses are offered for the lack of technology integration in the curriculum, Okojie-Boulder et. al stated, it is important to note that the degree of successful technology integration could be dependent in part on teachers' ability to explore the relationship between pedagogy and technology.

The Office of Technology Assessment (1995) stated that all teachers should be confident users of technology, when and where it is appropriate. Walker and White (2002) found that in many classrooms, computers have begun to transcend their original purpose of aiding in instruction and have become the actual instruction. Some instructional methodology courses

focus solely on computers as the only necessary technology-related instructional tool. As a result, the expectation for technology integration fails to extend beyond basic computer literacy. However, Walker and White found that in the computer literacy model, teachers who integrated computers into the curriculum facilitated basic knowledge in electronic mail, the computerized library catalog, word-processing software, and the Internet.

The Office of Technology Assessment (1995) reported that most classrooms teachers were accomplished at the art of handling the many tasks related to teaching without technology. However, some teachers who have integrated technology into the curriculum found technology to be more useful then they could ever have imagined. Teachers who had integrated technology into the curriculum reported that technology had enabled them to meet instructional goals, as well as pursue new goals altogether. Some classroom teachers found that by integrating technology into the curriculum it allowed them to teach in entirely different ways. In a survey conducted by the Center for Technology in Education in 1990, many teachers reported that by using computer technology, they expected more of their students (72%) and could present more complex material (63%). Additionally, some of the respondents to the survey indicated greater individualization in their teaching (61%) and facilitated more independent student work (65%). Teachers in the Office of Technology Assessment study reported that the use of technology integration in the classroom allowed them to give greater attention to individual students. Furthermore, 52% of the respondents indicated that integrating technology into the classroom enabled them to spend less time lecturing and more time working with individual students and small groups. One of the participants of the study responded on the benefits of the technology integration as follows:

> "My lectures are shorter on the topics covered by the software. I let the students set their own individual pace, and take responsibility for their own learning. It gives me more time to float around the classroom and interact with the students on an individual basis (Office of Technology Assessment, 1995)."

In addition to increased personal productivity, the Office of Technology Assessment (1995) found that technology integration helped support teachers professional development and enabled them to learn and improve their teaching skills. The Office of Technology Assessment reported that teachers, just like other users of technology, fell along a bell curve of proficiency with technology. Some teachers could be classified as visionaries and innovators of technology, while other teachers who are skeptical of change and are hesitant to embrace technology.

Kotrlik and Redmann (2004) reported that technology training, self-perceived teaching effectiveness, and the availability of technology contributed to a teacher's decision to learn about and integrate technology into the learning and instructional process. They suggested that before business education teachers can integrate technology into the curriculum, multiple limiting factors must be addressed, including technology anxiety and perceived barriers, as well as other impediments to experimenting with technology integration in the teaching and learning process. Additionally, Kotrlik and Redmann posits that other factors can contribute to the lack of technology integration in the classroom, including lack of support for technology-related professional development, the lack of available technology within the school, and the teachers' perceived effectiveness with using technology as an instructional tool.

Student's and teacher's role in the use technology, how technology fits in the curriculum, and what teachers should know, how they should learn, how they assess the impact of technology, need to be re-examined within business education (Kotrlik & Redmann, 2004).

Kotrlik and Redmann found that teacher anxiety over the use of technology has an influence on the integration of technology into the classroom curriculum. The placement of technology into classrooms without adequate teacher preservice teacher preparation or professional produced high levels of anxiety among business education teachers.

Kotrlik and Redmann (2004) found that the relationship of technology integration to teachers' perceived teaching effectiveness had not been directly addressed in the literature. Bandura (2000) posits that, "Unless people believe that they can produce desired effects and forestall undesired ones by their actions, they have little incentive to act." Therefore, business education teachers self-perceived effectiveness with integrating technology may be either directly or indirectly related to how those teachers perceive their instructional effectiveness.

Kotrlik and Redmann (2004) found that technology integration models exist that have been used to examine how education has responded to the technology. Dwyer, Ringstaff and Sandholtz (1997) used a model that examined the evolutionary process that teachers go through as they become proficient in the use of technology. The five phases of the model include: (a) Entry – teachers adapt to changes in the physical created by technology, (b) Adoption – teachers make use of technology support text-based instruction, (c) Adaptation – teachers integrate the use of word processing and databases into the teaching process, (d) Appropriation – teachers change their personal attitudes toward technology, and (e) Invention – teachers have mastered the technology and create novel learning environments. Russell (1995) identified a model of technology integration that includes six stages: (a) awareness, (b) learning the process, (c) understanding the application, (d) familiarity and confidence, (e) adaptation to other contexts, and (f) creative applications to new contexts.

Additionally, Russell (1995) proposed a third model related to the concept of diffusion of innovations. Diffusion is a special type of communication, in that the messages are concerned with new innovations. Rogers indicates there are four main elements of diffusion: (a) innovation, (b) communication channels, (c) time and (d) the social system.

A technological innovation usually has at least some degree of benefit for its potential adopters (Rogers, 1995). Rogers found that this advantage is not always readily evident, at least not to the intended adopters. The adopters are often uncertain that an innovation represents a superior alternative to the previous practice that the innovation seeks to replace. A technological innovation creates an uncertainty about what is the expected outcome in the minds of potential adopters, as well as representing an opportunity for reduced uncertainty, meaning that the technological innovation may solve the adopter's issue.

Dooley, Martinez and Metcalf (1999) reported that in order for the educational environment to institute change, it is imperative that school personnel understand the diffusion process and its implication for the success or failure of technology integration. If teachers see the benefit of a technological innovation and technology integration as part of an existing curriculum, teachers will begin to overcome their resistance to technology.

Business education teachers are very active in utilizing in exploring the potential of technology integration in the curriculum and in examining the adoption of technology as an instructional tool according to Kotrlik and Redmann (2004). However, business education teachers have been slow to embrace technology experimentation or advance technology integration in the curriculum. Kotrlik and Redmann posits that business education teachers have substantially stronger in the exploration in advanced technology integration, while other career

and technical education programs and have demonstrated more willingness to experiment with technology integration.

The Office of Technology Assessment (1995) reported that instructional goals, a teacher experience with technology, the subject matter, available technology resources and support, and the needs of the students were additional factors that can impact a teacher's willingness to integrate technology into the curriculum. Some teachers integrate technology using the traditional "drill and practice" method utilizing supplement tutorials to reinforce facts and contents. Other teachers use integrate technology to support more student-focused approaches to instruction, where the student conducts his/her own scientific inquiry or project or engages in collaborative activities, and the teacher assumes the role of facilitator or coach. These types of teachers are identified enthusiastic technology users and view technology as a valuable resource to compliment their instruction.

The most critical resource to the successful integration of technology into the curriculum is the teacher (Office of Technology Assessment, 1995). Additionally, the Office of Technology Assessment reported that in order for students to become comfortable and effective users of technology, teachers must first make wise and informed decisions about how to integrate technology into the curriculum. However, as teachers begin to understand the impact of technology on the curriculum and begin to embrace their role as teacher and technology guide, teachers must also admit to themselves and their students that do not have all of the answers with regard to using technology. Teachers must assume the role of technology learner, technology user, and technology integrator alongside their students, forging a reciprocal technology learning environment.

Effective integration of technology into the curriculum is influenced by many factors, which ultimately determine whether new instructional practices are adopted and maintained over time (Office of Technology Assessment, 1995). Further, the Office of Technology Assessment found that other factors that affect whether teachers use technology resources include policies that encourage teacher experimentation, teacher collaboration, monetary and recognition incentives, administrative leadership support, and public and political understanding and endorsement of the importance of technology as a learning and instructional tool.

Barnes (2005) reported that to a large extent, teachers have adopted a wait and see approach to technology integration and are expecting curriculum direction, professional development, and the provision of resources to integrate technology. These teachers are now at the edge of knowledge of understanding of the content and philosophy of technology integration in the curriculum. Teachers' failure to implement new, technology rich curriculum, could jeopardize the long-term viability of their subject content area if there is no clear vision of how to integrate technology into the curriculum.

Career and Technical Education, Technology, and Legislation

Career and technical education took on new significance with the passing of the Morrill Act (1862) that established the United States land grant college system and provided opportunities for students to be educated in agriculture and mechanical trades. States and the public were concerned about providing the appropriate types of training to produce a skilled workforce, and as a result several organizations whose primary focus was to prepare workers came into existence. The National Association for the Promotion of Industrial Education, based in New York, and the Vocational Education Association of the Middle West, which ultimately

became part of the American Vocational Education, were both created as a result of the interest in preparing an educated and skilled workforce (McCaslin & Parks, 2002).

McCaslin and Parks (2002) reported that in 1914 a congressional committee on National Aid to Vocational Education was established with the goal of studying the needs of the workforce and reporting its findings to the United States Congress. The findings of the commission resulted in passage of the Smith-Hughes (1917) Act, the first federally legislated act to promote vocational education in public schools in the United States. The Smith-Hughes Act was the first federal legislation that provided specific funding to train teachers; the Vocational Education Act (1963) included federal funding to specifically train business and office education teachers.

As a result of multiple vocational education federal legislative funding acts passed during the early and middle parts of the twentieth century, there has been a reform movement in preservice career and technical education programs. Integration of academic and career and technical education instruction, designing meaningful authentic assessment techniques, advancing student learning, integrating technology, collaborative teaching techniques, monitoring of the societal changes, and development of leadership skills, have been important focus areas. The diverse students in career and technical must perform at higher levels of academic and technical efficiency, which in turn, results in a need for career and technical education teachers to become proficient integrators of technology (Bruening, Dhital, Hodges, Liu, Scanlon & Shao, 2001).

McCaslin and Parks (2002) reported school boards, state education agencies, and the federal government, have all mandated, supported, or strongly encouraged an accelerated integration of technology in career and technical education programs. The report indicated steps

that should be implemented at the federal, state and local level to produce high quality career and technical education teachers, knowledgeable of subject content, and equipped with high levels of technical and academic skills.

McCaslin & Parks (2002) suggested that congress should amend the Carl D. Perkins Vocational-Technical Education Act of 1998 to include: (a) providing undergraduate scholarships for high quality career and technical education students, (b) provide funds to support technology upgrades to career and technical education classrooms, buildings, and technology-enabled equipment, and (c) provide internships in business and industry for career and technical education teachers. McCaslin and Parks also stated that the U.S. Department of Education, Office of Vocational and Adult Education, should sponsor conferences and forums that address the concerns and issues of career and technical teacher education. Second, states should implement a host of items, including: (a) providing monetary funds for teachers to seek new and innovative ways of improving academic and technical knowledge and skills, (b) career and technical teacher education programs should include knowledge and skills training on current topics such the integration of academic and technical skills, and (c) colleges and universities should include information on integrating technology in the career and technical teacher education programs. Finally, at the local level, school boards and industry should include adopt policies that include: (a) providing quality time and financial assistance for professional development training, (b) funding for career and technical education teachers to experiment with innovative ways of improving students' academic and technical knowledge and skills, and (c) form partnerships with business and industry and ask for advise on the technical and academic skills that employees need (McCaslin & Parks, 2002).

Further examination of technology integration requirements at the state level in 1995 found that only seven of the fifty states required or recommended integrating into the curriculum. However, the mechanism that teachers in the seven states employed to integrate technology into the curriculum was not identified in the report findings. In fact, some of the seven states equated technology integration in their policies as simply mandating courses about computers rather than assisting teaches to learn to teach with a range of technologies (Office of Technology Assessment, 1995). Hootstein, Rezba, and Savitt (2000) reported that the State of Virginia required teacher licensure programs to guarantee that preservice teachers are technology literate. Preservice teachers must demonstrate the ability to operate and integrate technology in the classroom. McCaslin and Parks (2002) also reported that major policy initiatives related to career and technical education have included, setting high standards, increasing the courses required for graduation, and establishing high stakes student achievement testing. Although, the preparation of teachers is critical in helping students achieve at higher levels, relatively little has been done to improve the quality of preservice teacher education with respect to technology integration. Furthermore, even less attention has been given to career and technical education teachers, who are challenged with the responsibilities of teaching both technical and academic skills to their students.

Technology Implications for Career and Technical Education

The impact of technology on career and technical education has not been limited to student assessment. Technology has permeated its way into the instructional process as an instructional tool, both from the standpoint of a teaching tool and a learning process that facilitates self-paced student learning and tutorial assistance (Brown, 1998).

Lewis (1997) suggested that the highest priority of information for the labor market was information related to the changing workplace, which occupations were becoming obsolete, how the educational requirements were changing, and most importantly, how technology was affecting jobs. Historically, career and technical education teachers have had the primary responsibility of teaching and training students to enter into and succeed in the workplace. This goal involves equipping students with essential knowledge and work related skills to meet the demands of the contemporary workplace (McCaslin & Parks, 2002).

However, career and technical education teachers are faced with rapidly changing expectations and teaching demands that make the teachers of the twentieth century obsolete. Career and technical education of the twentieth century were immersed in a technological revolution that required ongoing curriculum changes. The expectations for career and technical teachers in the twentieth century were very different from those in the early part of the twentieth century. Career and technical education teachers of the twenty first century will need to continue to evolve their skills, instructional techniques, and curriculum to respond to the needs of workplace and society (McCaslin & Parks, 2002).

Bunn and Stewart (1998) reported that career and technical educators are being asked to reform their programs to provide workplace preparation that reaches the ever higher standards required for entry-level skilled workers. Career and technical education reform has grown from a call for greater accountability and concern about the condition of the American economy as it faces the challenges of productivity and marketplace globalization. In a rapidly changing technological society, it is imperative that the leaders from business and industry, education, and labor, collaborate with career and technical educators to ensure that students and entry-level workers are prepared with relevant entry-level skills. Education must provide the kinds of skills

and training students need to become successful employees. Therefore, it is imperative that career and technical education teachers possess the appropriate knowledge of a technology-related workplace.

All teachers, not just career and technical education teachers, should be confident integrators of technology when and where it is appropriate (Office of Technology Assessment, 1995). Kotrlik and Redmann (2004) stated technology integration by career and technical education teachers included, using technology for classroom instruction, using computer applications, using practice drills, requiring research using the internet, requiring students to use technology to solve problems and analyze data, requiring students to conduct research using CD-ROMs, assigning students to produce multimedia reports and projects, and assigning students to correspond with others over the internet. The Office of Technology Assessment (1995) reported that teacher's who can confidently and effectively integrate technology in the curriculum, often find their role as classroom teacher also changes as well. One teacher echoed the opinion of many when she said: "I've gone from being the 'sage on the stage' to the 'guide on the side.'"

Career and technical education must be responsive to the constant changing workplace. New innovations in various fields should be incorporated into the career and technical education programs to ensure the teachers are knowledgeable and students are prepared to compete for jobs and achieve their potential (Lewis, 1997). To meet this important goal, career and technical education teachers are expected to integrate technology in the curriculum. Career and technical education teachers must integrate technology so that it supports instruction and enables students to use technology as important tool to meet technology information and learning needs (Kotrlik & Redmann, 2004).

The National Education Association (2003) stated a position paper on technology in schools, that students should learn about, understand and use technology, which can enrich their lives, expand academic opportunities and provide critical employment skills for entering the workplace of a global economy. The Office of Technology Assessment (1995) found that no single "best practice" technology medium has been identified with regard to integrating technology into the curriculum. Some teachers have explored using computer applications, other teachers have opted for utilizing video equipment as an instruments of technology integration. While other teachers reported being enthusiastic about instructional and professional applications of telecommunications technologies, which allows students to communicate with other classrooms via web-conferencing and satellite technology.

Teachers reported that technology can assist them with individualized student instruction as one strategy for integrating technology into the curriculum. Classroom teachers reported integrating technology learning systems such as, computer and software applications to correspond to classroom instruction and lectures. Students can work on technology implemented drill and practice software until reaching a level of mastery, at his or her own pace. Additionally, teachers have reported using technology as a tool for setting up activities in which students work collaboratively in teams, drawing upon each others strengths and weaknesses, and using technology to solve complex problems. Teachers organized students into teams of researchers, graphic designers, project managers, and programmers, allowing the students to build their technical skills while analyzing the problem. Teachers, just like all other professionals, tend to integrate technology when they can see how it will help them become productive or do their jobs more professionally. For career and technical education teachers, word processing is a major activity in secondary schools computer education classrooms. It was

reported in the Office of Technology Assessment (1995) that high school were still primarily a place to learn how to use word processing software, rather than a place where teachers have students do word processing in order to achieve other academic goals. This is even more likely for other applications, such as spreadsheets and database programs, which have been less integrated as an instructional tool than word processing. However, with the wide range of available technologies, teachers can solve a myriad of education problems, meet a variety of curriculum learning goals, and serve a diverse student population. In addition, technology offers teachers the tools to accomplish administrative tasks and enhances their own professional development (Office of Technology Assessment, 1995).

Becker (1993) found that the advise of experts in the area of educational technology has changed from the use of computers to teach BASIC programming, integrated learning tutorials, generic computer applications such as word processing, to activities integrated with existing curricula, to student-developed multimedia presentations, to telecommunications based learning communities, such as the popular WebCT technology used on many college campuses.

However, as Brand (2005) reported, in the end, in today's demanding economy, career and technical education will rise or fall based on its ability prepare young people with academic skills that lead to life-long learning and credentials.

Technology Implications on Business Education

Andriole (2006) reported that the gap between what teachers teach and what they do is widening. However, there are steps that can be taken to narrow the gap and respond to where business technology is going and the expectations of students in technology programs. The underlying issues are philosophical and include lofty statements such, "what are the roles and responsibilities of early twenty first century technology educators?"

Business teachers have served as both pioneers and leaders in teaching students technology (Kizzier, 1995). Kizzier also reported that business education teachers prepare students with the competencies to productively use current business hardware and software. Business education teachers have done an excellent job of teaching students how to use office productivity software such as word processing, spreadsheet, database, graphics, desktop publishing, and other software packages. However, Kizzier posits that business education teachers have struggled to add relevant competencies to the curriculum that reflect the changing nature of technology. In addition to teaching technology, business education teachers should also integrate technology as a teaching tool. Technology as a teaching tool is used in one of two ways: (a) students use the technology as a vehicle to learn skills and concepts beyond the technology itself, or (b) the teacher uses technology to enhance or support teaching. When students use the Internet to facilitate research, those students are also learning how to use the web without the benefit of formal instruction. Furthermore, Kizzier suggested that business education teachers can benefit from this informal training by using the students knowledge of the Internet as means to facilitate teaching a concept.

Simply stated, business education is education for and about business. At its core, business education reflects that portion of the curriculum that provides business related career and technical education for selected students, while also reflecting the portion of the curriculum that provides general business related or personal-use education for all students. The rapid pace of technological change during the last twenty years of the twentieth century radically changed the nature of business education. Business education has adapted from an era when its primary focus was on teaching typing, shorthand, and accounting as staples of the curriculum. In today's technology focused society and school environments, keyboarding, computer applications

software, computer hardware, networks and the Internet are the new components of the business education curriculum. To address the technology needs of the business education curriculum, preservice teacher education programs need to be restructured to ensure that graduates possess sufficient content knowledge and firsthand experiences in both the diverse functional areas of business and the methodology of teaching business subjects. Maintaining a curriculum that keeps pace with technological changes will allow business educators to better provide education and training that meets the needs of the twenty first century and help the business community of the United States remain globally competitive (Scott, 2002).

Business education teachers, who are the presumed leaders with respect to integrating technology in secondary school curriculum, have been reported as less of a technology integrator than other career and technical education programs. Miller (1997) found that the total computer usage by business education teachers was shown as similar to other career and technical education teachers. However, Miller also reported that business education teachers are significant technology integrators of productivity software, such as word processing, spreadsheet applications, database management applications, and integrated software applications. Miller's findings suggest that business education teachers, while utilizing traditional, familiar types of computer resources at high levels, were not integrating newer technologies into the curriculum at a more rapid pace than other career and technical education programs.

Kortecamp and Steeves (2002) reported that teacher educators are particularly interested in what research on technology reveals about its value in promoting learning. A growing body of research reveals that the effectiveness of technology integration in the curriculum depends on the goals of instruction, characteristics of learners, the design of the software, and technology implementation decisions made by educators. Technology integration in business education

curriculum must be based on its ability to support, rather than determine desired student outcome. Kortecamp and Steeves indicated that the educational goal ought to be uncovering what technology should be doing and how business education teachers should be integrating technology to prepare students who are independent and mindful thinkers and who are able to solve complex problems. Scott (2002) reports that by committing to both the occupational intelligence and job-training components of the business education curriculum, business education teachers can strengthen their discipline. By maintaining a balanced curriculum, business education teachers will be able to implement appropriate instructional strategies and meet the educational goals of their students and the workplace.

Technology integration will continue to be an integral part of the business education curriculum and has caused course changes at all levels of education, from secondary schools through post-secondary levels. Course contents needs to be continually reviewed and evaluated to ensure the content is meeting the needs of students who will be going into the workforce or continuing their education. The challenge is for business education teachers to keep current and be comfortable with their role as facilitators of learning (Jaderstrom, 1995).

Rankin (1995) found that when reviewing the typical business education teacher undergraduate program, a dilemma appears. What is the best delivery system for a new preservice business education technology-oriented curriculum? Can technology be infused into the preservice teacher preparation coursework and make it relevant? What would be included in a preservice teacher preparation course addressing advanced technology? With limited funding, how can business education preservice teacher preparation programs access the latest computer and software and stay up to date with the latest technologies? McIsaac and Vrasidas (2001) reported that to have successful technology integration in schools, preservice teacher education

programs play an important role. Technology-related preservice teacher preparation on technology integration should provide teachers with a solid understanding of the various technologies, the benefits, and the constraints. Preservice teacher preparation programs should not be based on training for technology literacy; however, the programs should prepare teachers to integrate technologies to construct, represent, and share knowledge in authentic contexts. McIsaac and Vrasidas reported that preservice teachers should not only be taught about technology, but rather to use and integrate technology into the curriculum. Providing preservice teachers with an opportunity to make instructional decisions like experts, to understand how to choose the appropriate instructional media, understanding how to structure learning activities for students and employing sound pedagogical strategies in real-life contexts assists preservice teachers to become confident integrators of technology.

With the limited amount of time in a preservice business education teacher program, proficiency in specific technologies at the expense of learning a wide variety of technologies would not be wise. In the rapidly changing technological world, preservice business education teachers will need to understand how to identify relevant performance objectives for students, acquire technologies that meets the needs of business and education, and utilize teaching methodology that make it possible for students to learn how to learn with new technologies in the future (Rankin, 1995).

Technology Impacts on Preservice Teacher Education

There is little argument among leaders in the field of educational technology that teacher training institutions are not adequately preparing preservice teachers to be effective and proficient users and integrators of technology (Brinkerhoff, Brush, Glazewski, Igoe, Ku, & Smith, 2002). Ely (1996) stated that although the United States Department of Education and the

National Association of Education have stressed the importance of incorporating technology in preservice teacher education programs. Ely indicated that preservice teachers perceived themselves as not sufficiently prepared to use integrate technology into the classroom curriculum. Arnold, Dysard, and Rowley (2005) stated that many schools, colleges, and departments of education across the United States were re-evaluating the technology training component of their preservice teacher education programs.

Bruening et. al (2001) cited integrating academic and career and technical instruction, designing authentic assessment measures, advancing student learning, integrating technology, collaborative teaching, constantly monitoring change, and developing leadership, as components on preservice teacher education programs. The Office of Technology Assessment (1995) also reported that most teachers have not had sufficient preservice training to prepare them to integrate technology into the curriculum. The Office of Technology Assessment also found that a majority of teachers reported feeling inadequately trained to use technology resources, particularly computer-based technologies. Although many teachers see the value of students learning about computers and other technologies, teachers reported an unawareness of the technology resources that could enable them to complete the everyday tasks of their profession. Evans and Gunter (2004) reported that 97.5% of preservice teachers in their study felt that it was important to integrate technology in the curriculum. However, when asked about their technology training, only 70% felt that they had sufficient training on how to integrate technology into the curriculum. Conversely, 55% of the preservice reported that the technology relate courses they took as part of their preservice teacher preparation program were sufficient to teach the needed technology skills.

Evans and Gunter (2004) found that preservice teachers typically teach by modeling the instructional techniques used by college of education faculty. Gunter and Sivo (2003) found that college of education faculty members must be willing to integrate technology into their instruction, so that preservice teachers can fully understand the influence that technology has on education. However, Hootstein, Rezba and Savitt (2000) indicated that it is difficult to modify a preservice teacher education program. Given the other responsibilities of the faculty, encouraging them to develop technology skills and devote time, effort, and resources to infuse technology into preservice teacher preparation courses would be difficult.

The Office of Technology Assessment (1995) reported that technology is not central to the preservice teacher education programs at most colleges of education in the United States. Therefore, most of the new graduates from colleges of education are not aware of meaningful instruction techniques on how to integrate technology into the curriculum. Most of the technology instruction at colleges of education teaches students about technology as a separate discipline and does not focus on how to integrate technology into the curriculum as an instructional tool. The Office of Technology Assessment indicated that the majority of teacher education faculty did not model technology integration to accomplish objectives in the courses they teach preservice teachers, nor do they teach students how to use technology as an instructional tool. Teacher education faculty seldom asked their students to create lessons using technology or practice teaching with technological tools.

However, the importance of technology in teacher preparation is gaining momentum. In 1994, at least eighteen states required training in technology integration for all teachers seeking certification (Office of Technology Assessment, 1995). Although, these eighteen states do not represent the majority of the fifty states, there was an improvement from 1987 when only 12

states required technology training to receive teacher certification. States have chosen to implement a wide array of approaches to allowing preservice teachers to meet the technology requirement for certification. For example, in 1994, California required a one semester course, New Jersey and Texas required a three credit course, and Kansas and Wyoming required a one unit course. Whereas, the state of Washington preservice teacher technology requirement only indicated that teachers must have a general knowledge of technological developments. In the state of Michigan, the legislation mandated that teachers have a working knowledge of modern technology and the use of computers and that the student must demonstrate their knowledge to the school board or district where they would be employed before engaging in student teaching. In Idaho, teachers have been required to develop skills to use computer technology, which included word processing, database management, and general instructional use according to the Office of Technology Assessment.

The Office of Technology Assessment (1995) reported that the issue between state and federal legislation and preservice teacher technology training can be contributed to the lack of understanding between colleges of education and secondary school education curriculum requirements. Additionally, many teacher education faculty members were not aware of all the technology requirements for teacher certification in their states. College of education faculty rarely work with other agencies, such as school districts or state agencies, on projects related to technology integration according to reports survey results. According to the Office of Technology Assessment, the same study found that some collaborative partnerships among universities, schools, districts, regional education agencies, and state education agencies have shown great promise. The University of Virginia partnered with the Virginia state education agency to create Virginia's first Public Education Network. California State University's

telecommunication system launched a collaborative, statewide secondary education professional development program supporting free telecommunication training for preservice teachers. Additionally, the teacher education faculty at the University of South Florida and the University of Central Florida created technology training and professional development projects in collaboration with the Florida state education agency. The Texas Education Agency funded and supported a grant program that provides technology-related professional development. Bronack and Hornung (2004) reported that developing technology proficient teachers is not a small task; doing so involves changes in attitudes of educators, education agencies, increased access to technology rich K-12 schools, and positive attitudes of preservice teachers.

Among the many demands on teacher education faculty, preparing students to integrate technology as an instructional tool may seem like an additional burden. However, states and professional organizations are increasingly recommending or requiring that all new teachers be competent in the use of technology. Additionally, emerging evidence suggests that technology can make several positive contributions to the overall preservice experience (Office of Technology Assessment, 1995).

Johnston, Mergendoller, Rockman, and Willis (1994) reported that colleges of education where technology is an integral part of the preservice teacher preparation program, there was an overall enhancement of the teacher preparation experience. Their findings demonstrated that technology can capture the reality of the classroom by using a video camera to record a classroom session to be used classroom discussions. Johnston et. al also found that technology can also facilitate access to and communication with additional resources, such as experts in the field or informational databases on CD-ROM available to teacher education students and faculty

on the same network. Additionally, technology can support and enhance traditional approaches to teacher-developed curriculum materials and instructional practices.

The Office of Technology Assessment (1995) stated that regardless of whether the non-teacher education faculty model the use of technology in their courses, it is imperative that colleges and schools of education provide preservice teachers with "modeling" techniques to use technology as an instruction tool. The study also found that although a majority of colleges of education surveyed offered a course in information technology, which was defined as educational computing, educational media, or instructional technology, only slightly more than fifty percent of the programs required their students to take the course. Evans and Gunter (2004) reported that in addition to self-contained technology courses, preservice teachers need the opportunity to extend technology integration into core courses and field experiences. The amount of success that preservice teachers have integrating technology into the curriculum is not only dependent upon skill, but it is also dependent upon learning effective technology integration strategies and developing positive attitudes toward the use of technology.

Evans and Gunter (2004) reported that to prepare futures teachers for a technology driven society, colleges of education must produce technology proficient teachers, which involves a change in attitude of educators, increased access to technology rich secondary schools, and creating positive attitudes on the part of preservice teachers. The Office of Technology Assessment found that preservice teacher education students must see technology used by their instructors, observe uses of technological tools in classrooms, and practice teaching with technologies, if they are to effectively integrate technology in their own teaching. In those colleges of education where technology is an integral part of the teacher preparation program, anecdotal evidence suggests that students will adopt the use of technology in instruction if they

see preservice teacher education faculty members using technology in their instruction. Evans and Gunter (2004) stated that the more technology experiences preservice teachers are provided with, the less resistant to technology they will be as a classroom teacher.

Researchers do not dispute the inherent value of technology and developing appropriate technology-related skills as part of preservice teacher preparation. Additionally, there is agreement that preservice teachers must learn to become proficient users and integrators of technology (Bielefeldt, 2001). Curriculum for preservice teachers should emphasize the exploration, integration, and evaluation of technology in core subjects. However, many preservice teacher training programs do not provide the comprehensive instruction that preservice teachers need to become proficient at integrating technology (Evans & Gunter, 2004). Bielefeldt and Moursund (1999) found that although technology may available to preservice teachers onsite during their student teaching field experiences, most of the student teachers did not routinely learn to integrate technology during his or her student teaching experience. Furthermore, most the student teachers in the study were not supervised by college of education faculty members who could advise them on how to integrate technology in the curriculum.

Watson (2006) posits that teacher's lack of technology preparedness begins at the preservice level. Brinkerhoff, Brush, Glazewski, Igoe, Ku, and Smith (2002) indicated that one of these methods involves the integration of technology with undergraduate methods courses, which provides students with knowledge, experiences and instructional techniques to become proficient users and integrators of technology into the curriculum are valuable for preservice teacher preparation programs.

Fields, Neiderhauser, and Salem (1999) reported that preservice technology courses have the potential to fill a more central role in a teacher education program. A technology course can

provide context for future teachers to examine instructional practices. Preservice technology courses can assist future teachers make informed technology decisions, examining how different types of technologies can support learning goals, how technology can be selected to meet instructional goals, and how to evaluate new technologies in the context of student learning. Hare, Howard, and Pope (2002) also found that there is gap between what colleges of education teach preservice teachers about technology and the expectations about how preservice teaches will integrate technology into the curriculum. This gap is easily seen between the knowledge and skills preservice teachers have acquired through their required technology courses, and the knowledge and skills they are expected to possess to successfully integrate technology into their classroom.

As our society has become highly technology oriented, its growth has been continuous and rapid. The way business is conducted, the methods of communication, and everyday life, have all been impacted by technology. Businesses are demanding that potential workers be both educated and technology competent. However, a critical question is, "Are preservice teachers being adequately prepared in technology-related skills in order to prepare classroom students with the technology skills they are expected to have upon graduation (Evans & Gunter, 2004)? While technology courses can instruct students on technology skills, preservice teachers who do not have an opportunity to observe effective use of technology in the classroom and use it under the guidance and facilitation of faculty instruction, will likely graduate with limited professional skills and lack of an understanding of integrating technology as tool in education (Vannatta, 2000).

Technology Impacts on Professional Development

Wells (2007) defined professional development as going beyond training with an implication on learning skills, and encompassing formal and informal means of helping teachers to not only learn new skills, but also develop and explore new and advanced understandings of content and resources. This includes support for teachers as they encounter the challenges that come with practicing and evolving their proficiency with technology. Additionally, Holland (2001) states that the primary focus of professional development in technology has been to provide teachers with knowledge and skills about the technology available for use in their classroom and about specific skills and instructional techniques. However, this type of traditional approach to professional development should move beyond developing skills to supporting teachers' development as professionals involved in technology decision-making, inquiry and technology leadership in the classrooms. Providing teachers with professional development that addresses their particular needs in terms of knowledge and use of technology requires support for teachers' self-directive and collaborative efforts to integrate technology into their classroom practice.

Holland (2001) posits that technology-related professional development lends itself to the support to teachers, it allows the classroom teachers to become knowledgeable participants in technology-related school reform, which change the ways that schools are structured and allow for innovative instructional practices. Innovative instructional techniques have more to do with teachers being sophisticated in the use of technology for their own research, planning, and management, and in working collaboratively with other educators to plan, use, and integrate technology into the curriculum. Innovative teachers will use technology to gain access to and have a voice in the larger professional community of discourse. Jones, McKinney, Quinn, and

Strudler (1999) suggested that preparation for technology integration in schools would best be viewed as the initial phase of a continuum that requires ongoing professional development and support. Without adequate support, even well prepared first year teachers are unlikely to undertake significant integration of technology into the curriculum. Ziegel (2004) stated that professional development should be planned and designed with an understanding of the relationships and skills of the teachers in a given school. For instance, technology-related professional development could include basic computing, specific software programs, or fixing basic hardware problems.

It is generally accepted that as teachers gain experience with computer technology the integration of this type of technology becomes part of the teaching and learning process (Abrami, Venkatesh, & Wozney, 2006). As the use computers in schools has grown, there has also been an increased need to integrate technology into the curriculum a manner that is reusable and helps students grow and learn more. The speed of the technological changes has left teachers feeling unprepared and anxious about integrating technology into the curriculum. Good professional development would help increase teachers proficiency toward integrating technology into the curriculum (Watson, 2006). One of the impacts of technology on career and technical education has been in the area of professional development (McCaslin & Parks, 2002). Brown (1998) posits that collaboration between teachers is an important strategy for professional development. Collaboration between teachers facilitates sharing of knowledge about technology integration. Professional development allows career and technical teachers to enhance their own technology skills and subsequently use these skills to integrate the technology into the curriculum. Bonk, Ehman, and Yamagata-Lynch (2005) stated the most successful technology-related professional development programs focused on common factors underlying teaching strategies and methods

related to technology integration proven effective by other instructors. There is a growing need for cohorts of teachers in schools to generate and share professional development plans in groups while working on innovative ideas to integrate technology into the curriculum.

However, to become proficient and efficient integrators of technology, teachers need more than just training about how to work machines and technical support. In order for teachers to fully integrate technology into the curriculum, professional development must include hands-on learning, time to experiment, easy access to equipment, and ready access to support personnel who help them understand how to integrate technology proficiently in their teaching and learning practices (Office of Technology Assessment, 1995).

As school districts and education agencies develop technology-related professional development training, it is important to recognize that technology tools require time to master. Technology-related hardware and software application are complex and constant changing, therefore, time must be allotted in professional development training to understand how to integrate technology to facilitate work and curriculum related goals (Office of Technology Assessment, 1995). However, classroom teachers are often not afforded enough professional development time to become proficient integrators of technology. Even the most accomplished technology using teachers, who are highly motivated, rated the lack of time among the most problematic barriers to integrating technology into the curriculum (National Commission on Time and Learning, 1994).

The Office of Technology Assessment (1995) reported that teachers have diverse opinions with regards to technology integration, its benefits, and how, or even if, to integrate technology into the curriculum. Some teachers expressed an eagerness to experiment with innovative ideas, even at the risk of failure. While other teachers are hesitant integrators of

technology, and have a limited interest, energy, or desire to experiment with technology. If viewed the prism of a bell-curve analysis, the vast majority of teachers fall somewhere in between the extremes of the innovative, early adopters and the resistant, late adopters of technology.

The Office of Technology Assessment (1995) found that when teachers were asked what would help them become more proficient integrators of technology, the need for more knowledge about how to use various technologies was expressed by the respondents. Teachers who want to integrate technology also may find that educating themselves enough to be able to use a particular piece of technology requires a considerable investment of time and may not succeed in making the teacher a proficient integrator of technology. Additionally, finding and integrating technology into the curriculum can be difficult without a fairly comprehensive knowledge of available technologies (Office of Technology Assessment, 1995).

Typically, formal professional development sessions in the uses and mechanics of technologies provide only the basic knowledge that gives teachers an impetus to further experiment. More technology and more use of technology will not be sufficient to assure that teachers will become successful integrators of technology. Supporting teachers in their efforts to integrate technology throughout their teaching is central if technology is to become a truly effective educational resource; yet true integration is difficult, time-consuming, and a resource intensive endeavor (Office of Technology Assessment, 1995). Sheingold (1990) states that "…the challenge to integrating technology into schools and classrooms is much more human than it is technological…it is not fundamentally about helping people to operate machines. Rather it is about helping people, primarily teachers, integrate technology into their teaching as tools of a profession that is being redefined through the incorporation process." It is a point

worth remembering if professional development in technology is to be supported. Vannatta (2000) suggested that professional development should not strive to develop a broad range of technology skills, but rather emphasize the facilitation of instructional methods for technology integration and the development of proficiency in a few selected areas of technology.

Although being able to integrate technology into the curriculum is fast becoming an expectation for all teachers, it is not yet clear how this translates into practice. If teachers are still evolving their understanding and integration of technology as an instructional tool, professional development experiences can and should be designed to support the evolution of technology knowledge and skills (Ertmer, Sangeetha, & Ross, 2001). Alfeld, Kowske & Stone (2004) reported that effective business education programs require administrative support in a number of ways. Perhaps the most important is the provision of professional development to keep the faculty current.

CHAPTER 3

Method

Technology-based jobs created today require a workforce that is highly skilled. Employers have the expectation that employees will be users of technology and are no longer satisfied with employees whose skill set is limited to being good with figures and detail-oriented. In response to these types of sentiments, the National Business Education Association (Business Education Standards) developed technology standards that are more than just a series of courses, instead, the NBEA views information technology as an information-gathering, information-organizing, and problem-solving tool that supports every discipline. Further, the NBEA stresses that the field of business education must offer continuous instruction in current and emerging information technology. Unfortunately, results of quantitative research such as Kotrlik and Redmann's (2004) study of business education teachers in Louisiana reported that business teachers felt their skills were inadequate in integrating technology. The study found that business education teachers relied on self-directed learning and literature for professional development and did not believe professional development training helps improve their technology skills.

Kotrlik and Redmann (2004) defined technology integration as "employing the internet, computers, CD-ROMs, interactive media, satellites, teleconferencing, and other technological means in instruction to support, enhance, inspire, and create learning." Unfortunately, as Judson (2006) found, the strategies classroom teachers use to integrate technology into the curriculum have not been sufficiently examined in the literature. Therefore, the purpose of this study was to

describe high school business education teachers' perceptions about their preparedness to integrate technology into the curriculum and their experiences integrating technology into the curriculum. Specifically, this study addressed two research questions: (1) how do business education teachers describe their perceptions using five specific categories of technologies as instructional tools and (2) how do business education teachers describe their technology-related preservice education preparation and professional development experiences. Miller (1997) conducted a quantitative study of 50 career and technical education teachers on their use of five technologies as resource tools in the courses they taught in the academic year. In this study, I researched those five technologies from the qualitative perspective of the high school business education teachers, who represent one of the subject content areas of career and technical education. The specific categories of technologies included productivity software, graphic applications, interactive technologies, telecommunications resources, and computer-assisted applications. The participants were high school business education teachers selected from a metropolitan school system in the southeastern U.S. This was not an intervention study and although some business education teacher perceptions about technology, levels technology integration, or technology use may have increased or decreased, those outcomes were not the focus of this study.

Qualitative Research Method

Qualitative research differs from quantitative methods in that there is a greater emphasis on holistic description, that is, on describing in detail all of what goes on in a particular activity or situation rather than on comparing the effects of a particular treatment, as in experimental research or on describing the attitudes of behaviors of people as in survey research (Fraenkel and Wallen, 2001). Unlike quantitative studies where the design of the study is planned in advance,

the research design in a qualitative study is emergent and develops throughout the course of the research. Important ideas or questions to pursue are identified in the early stages of a qualitative investigation. New questions are asked, previous statements are observed from a different perspective, or previously unexamined documents or situations are looked at anew. The focus of inquiry is broadened or narrowed after the study has begun rather than before it starts (Fraenkel & Wallen).

Qualitative strategies consists of five major strategies: (1) ethnographies, in which the researcher studies an intact cultural group over an extended timeframe by collecting primarily observable data, (2) grounded theory, in which the researcher attempts to derive a general, abstract theory of a process, action, or interaction grounded in the view of participants, (3) case studies, in which the researcher conducts an in-depth exploration of a phenomenon, an event, a process, or one or more individuals, (4) phenomenological research, in which the researcher identifies the essence of experiences concerning a phenomenon, as described by participants, and (5) narrative research, a form of inquiry which studies the lives of individuals and asks one or more individuals to provide stories about their lives (Creswell, 2003).

The phenomenological strategy has several advantages as an approach to qualitative research. First, it can be used to study a wide range of educational phenomena, such as how students experience the process of studying and test taking, how teachers experience a classroom, and how policy makers experience meetings about school reform proposals. Second, the interview process used to collect phenomenological data is wide ranging, and it is capable of detecting many aspects of experience that may prove to be important with no further analysis or variables in subsequent qualitative or quantitative studies (Borg, Gall, & Gall, 2003).

Phenomenological Framework

Phenomenology has been variously characterized as a method, a philosophy, and a theory. Creswell (2003) wrote that phenomenological research identifies the essence of the human experiences concerning phenomena. Understanding lived experience marks phenomenology as a philosophy, as well as a method, and the procedure involves studying a small number of participants through extensive and prolonged engagement to develop patterns and relationships of meaning. A researcher taking a phenomenological approach avoids assumptions about the phenomenon under study, avoids reducing complex reality to a few variables and minimizes the use of instruments that are reactive and that greatly influence the reality she or he is trying to study (Lancy, 1993). Borg et al. (2003) defined phenomenology as the study of the world as it perceived by individuals when they place themselves in a state of reflection. Phenomena can be defined as the various sensations, perceptions, and ideations that appear in consciousness when the self focuses attention on an object.

The phenomenological approach involves the participants reminiscing on an experience in order to recall comprehensive descriptions that portray the essence of the experience. From the individual descriptions, general or universal meanings are derived by the researcher. The goal of phenomenological research is to determine what an experience means for the person who had the experience and their description of the lived experience (Moustakas, 1994).

Patton (2002) stated that phenomenology explores how human beings make sense of experiences and transform experiences into consciousness both individually and as a shared experience. The researcher must carefully and thoroughly capture and describe how research participants experience some phenomenon, specifically, how they perceive it, describe it, feel about it, judge it, remember it, make sense of it, and talk about it with others. Phenomenology is

less interested in the factual status of particular instances, such as whether something happened, or how often it tends to happen, or how the occurrence of an experience is related to the other conditions or events. From a phenomenological point of view, there is only what the participants know and understand of their experience; the subjective experience incorporates the objective thing and becomes a person's reality, making meaning of the essence of a phenomenological experience.

Researcher's Role

In qualitative, phenomenological studies, data are typically collected by in-depth conversations (interviews) in which the researcher and the participant are fully interactive; observations, videotapes and written descriptions are also used. I collected data through interviews, therefore, as the investigator; I was the primary instrument for gathering and analyzing data and as such, needed to respond to the situation by maximizing opportunities for collecting and producing meaningful information. Merriam (1998) stated that the investigator as a human instrument is limited by being human, that is, mistakes are made, opportunities are missed, and personal biases can interfere. Sensitivity, or being highly intuitive, is a trait needed in a phenomenological study. The researcher must be sensitive to the context and all the variables within it, including the physical setting, the people, the overt and covert agendas, and the nonverbal behavior. Being sensitive in the data-gathering phase of the study involves a keen sense of timing, of knowing when enough has been observed. During qualitative interviews, sensitivity means knowing when to allow for silence, when to ask probative questions, and when to change the direction of the interview. Every sense of the investigator must be alert to cues and nuances provided by the context.

Moustakas (1994) reported that in phenomenological studies, the researcher must resist the urge to make assumptions and maintain a clear focus on the research topic with each participant. As indicated by Merriam (1998), I assumed neutrality with regard to the participants' knowledge, regardless of my beliefs or values with regard toward the research questions. I refrained from sharing anecdotal stories and my similar or dissimilar experiences as a business education teacher during the data collection and reporting process.

Marshall and Rossman (2006) posited that qualitative researchers must be sensitive to their own personal biography and how it shapes the study. Since my educational background and career experience was similar to the participants (i.e., teacher education program and business education teacher), it was very important for me to obtain information solely from respondents' perspectives. Therefore, I questioned, probed, and listened without the assumption of being an expert in the field. I came to my research wanting to give voice to persons who had not been heard adequately. According to Moustakas (1994), the researcher's excitement and curiosity about a qualitative research topic inspires the research.

The role of the qualitative researcher is to depict the essence or basic structure of the experience. Prior beliefs about a phenomenon of interest are temporarily put aside, or bracketed, so as not to interfere with understanding the phenomenon (Merriam, 1998). Qualitative researchers cannot assume they know what things mean to the people they are studying. Qualitative researchers believe that multiple ways of interpreting experiences are available to each of us through interacting with others, and that it is the meaning of our experiences that constitutes reality (Biklen & Bogdan, 1998). The quantitative researcher by contrast, strives to control for all other outside influences or interventions that might affect the precise relationship being examined. By doing so, the researcher would be concerned with (1) generalizability,

which details how to select a sample that represents the population to which the research results can be applied, (2) validity, which helps determine whether data authentically represent the human phenomenon under investigation, and (3) reliability, which helps to ensure that if a study is repeated the same results will occur (Aargaard, Langenbach & Vaughn, 1994).

Participants

The quality of research depends not only on the research methodology and instrumentation, but also by the suitability of the sampling strategy (Cohen, Manion, & Morrison, 2000). In qualitative research, participants or settings such as schools or organizations should be carefully selected for inclusion, based on the possibility that each participant or setting will expand the variability of the sample (Maykut & Morehouse, 1994; Patton, 2002). Purposive sampling increases the likelihood that variability common in any social phenomenon will be represented in the data, in contrast to random sampling which tries to achieve variation through the use of random selection and large sample size. Further, qualitative researchers set out to build a sample that includes people or settings selected with a goal in mind of gaining deep understanding of some phenomenon experienced by a carefully selected group of people. This approach to purposefully selecting people or settings acknowledges the complexity that characterizes human and social phenomena and limits generalizability. Purposeful sampling satisfies the need to identify research participants. However, it is not intended to represent the wider population; purposeful sampling is deliberately selective and biased. According to Lodico, Spaulding, and Voegtle (2006) and Patton (2002), the logic and power of purposeful sampling is in selecting information-rich cases for study in depth. Information-rich study participants are those from which the researcher can learn a great deal about the research topic. For this study,

an information-rich participant described the high school business education teachers selected as participants for the study.

There is no clear cut answer for the correct sample size selected for a study. Instead, the sample size is dependent upon the purpose of the study and the nature of the population under scrutiny. In qualitative research it is more likely that the sample size will be small (Cohen et al., 2000). There are no rules for sample size in qualitative research; sample size depends on what the researcher wants to know, the purpose of the research, what is at stake, what will be useful, what will have credibility, and what can be done with available time and resources. A key question that must be addressed by the researcher is whether the sampling strategy supports the study's purpose. The validity, meaningfulness, and insights generated from qualitative research have more to do with the information richness of the participants selected, observational, and analytical capabilities of the researcher than with the sample size (Patton, 2002). Kvale (1996) suggested an answer to the common question, "How many interview subjects do I need?" the answer is simply, "Interview as many subjects as necessary to find out what you need to know."

The number of participants necessary depends on a study's purpose. If the purpose is to understand the world as experienced by one specific person, then one study participant would be sufficient. If however, the purpose of the study is to explore and describe in detail the attitudes of boys and girls toward grades, interviews might be conducted until a point of saturation, where further interviews yield little new knowledge. In current interview studies, the number of participants tend to be between five and fifteen. This number can be attributed to a combination of the time and resources available for the investigation and to the law of diminishing returns (Kvale, 1996).

For this qualitative study, 10 secondary Business Education teachers were purposefully selected from a public school system in a metropolitan area in the southeastern U.S. using a maximum variation sample. Participants were contacted using a researcher designed Participant Solicitation Letter, which was emailed by the researcher's personal contact employed in one of the targeted school districts (see Appendix C). The Participant Solicitation Letter provided the researcher's email address and telephone number as contact information for the solicited participants. Participants that responded to the Participant Solicitation Letter were contacted via information provided to the researcher. There were three contacts with each participant. The initial contact was used for formal introductions, discussion of the dissertation scope and scheduling of location for conducting the interview. Upon mutual agreement to participate in the study, the participants were emailed the consent letter (see Appendix D). The second participant contact was conducted 24 hours before the interview to confirm the date, time and location of the interview. The third contact was for the purposes of member checks for the data analysis, which is discussed in the data analysis procedures section of this chapter.

Participants were limited to individuals employed as business education teachers and who also held a clear-renewable or provisional teaching certificate issued by the state's professional standards commission, the issuing body for professional and provisional teacher certificates in the research participants' state of residence. According to Maykut and Morehouse (1994) a maximum variation sample reflects the scope and range of participants' experiences. To achieve the maximum variation sample, the selected Business Education teachers included first-year teachers through veteran teachers, with no upper limit on the number of year's classroom teaching experience. By including first year teachers, the sample included teachers most likely to have exposure to technology integration as a result of their preservice teacher preparation

program. Similarly, including teachers with two or more years of experience yielded inclusion of teachers who had not experienced technology integration as part of their preservice teacher preparation program.

Patton (2002) indicated that maximum variation sampling with a small diverse sample will yield two kinds of findings: (1) high-quality, detailed descriptions from each participant, which are useful for documenting uniqueness, and (2) important shared patterns that cut across study participants and derive their significance from having emerged out of the participant diversity. Both of these type findings are important to researchers interested in qualitative research inquiry.

Interview Data Collection Procedures

Phenomenological data collection involves reflecting on an experience that is already passed or experienced by participants (Patton, 2002). Merriam (1998) wrote that in all forms of qualitative research, some and occasionally all of the data are collected through interviews. In qualitative research, interviews may be used in two ways. Interviews may be the dominant strategy for data collection, or interviews may be employed in conjunction with participant observation, document analysis, or other techniques. In each of these situations the interview is used to gather descriptive data in the interviewee's own words so that the researcher can develop insights on how interviewees interpret some piece of the world (Biklen & Bogdan, 1998). Phenomenological data collection involves reflecting on an experience that is already passed or experienced by the study participants (Patton, 2002). I used interviews as the primary data collection procedure for this study to collect data from people who had directly experienced and lived the phenomenon of interest.

The purpose of in-depth interviewing is neither to get answers to questions, nor to test hypotheses, and not to evaluate in the traditional sense of the word. At the root of in-depth interviewing is an interest in understanding the lived experience of people and the meaning or perceptions they make of that experience. Interviewing provides access to the context of people's behavior and thereby provides a way for researchers to understand the meaning of that behavior. Interviewing allows the researcher to put behavior in context and provides access to understand the interviewee's action. The primary way a researcher can investigate an educational organization, institution, or process is through the experience of the individual people, the others who make up the organization or carry out the process. Social abstractions like education are best understood through the experiences of the individuals whose work and lives are the stuff upon which the abstractions are built (Seidman, 2006).

Qualitative interviews vary in the degree to which they are structured. Some interviews are focused around particular topics or may be guided by some general questions. Even when an interview guide is employed, qualitative interviews offer researchers considerable latitude to pursue a range of topics. Additionally, the interview guide offers the interviewee a chance to shape the content of the interview. When the interviewer controls the content too rigidly or when interviewees cannot tell the story in their own words, the interview falls out of the qualitative range. Good interviews are those in which the interviewees are at ease and talk freely about their points of view. Good interviews produce rich data filled with words that reveal the interviewee's perspectives and transcripts are filled with details and examples. The goal of understanding how the person you are interviewing thinks is at the center of the interview. The researcher has to be captive to the larger goal of the interview, which is the understanding of the phenomena (Biklen & Bogdan, 1998).

Borg et al. (2003) reported that developing questions for more structured research interviews is best done by designing and trying out an interview guide. An interview guide specifies the questions, the sequence in which the questions are to be asked, and guidelines for what the researcher is to say at the beginning and end of each interview. The interview guide should list the response options for each closed-form question and provide space for the interviewer to write down answers that do not fit prescribed response categories.

The way in which questions are worded is a crucial consideration in extracting the type of information desired. The clarity of the question is key to the response, interpretation and understanding of the interviewee. Using words that make sense to the interviewee or words that reflect the respondent's worldview, will improve the quality of data obtained during the interview. Without sensitivity to the impact of particular words on the person being interviewed, the answer may make no sense at all or there may be no answer to the question (Merriam, 1998).

For this study, semi-structured interviews were conducted in person with the participants at a convenient branch of the county public library in the county of each participant. The second contact with the participants was used to confirm the date, time and location of the interview with the participants twenty four hours in advance of the interview. The participants were interviewed during a period between August 08, 2007 and August 19, 2007, dependent on availability.

Merriam (1998) indicates that highly structured, questionnaire-driven interviews fall at one end of the continuum; at the other end are unstructured, open-ended, conversational formats. The problem with using a highly structured interview in qualitative research is that rigidly adhering to predetermined questions may not allow researchers to access participants' perspectives and understanding of the world. Instead, the results may be reactions to the

researcher's preconceived notions of the world. Merriam also found that less structured formats assume that individual respondents define the world in unique ways. The semi-structured interview is halfway between the ends of the continuum. In this type of interview either all of the questions are flexibly worded, or the interview is a mix of more and less structured questions. This format allows the researcher to respond to the situation at hand, to the emerging worldview of the respondent, and to new ideas on the topic.

The semi-structured interviews were scheduled with the participants for 90-minute sessions and were tape recorded by the researcher. Maykut and Morehouse (1994) reported that qualitative interviews average one-and-a-half to two hours in length, allowing for prolonged engagement with the interviewee. This time frame allows the competent interviewer to establish rapport with the interviewee and to foster a climate of trust. Merriam (1998) as well as Maykut and Morehouse (1994) suggest that the most common way to record interview data is to tape record the interview. This practice ensures that everything said is preserved for analysis. The researcher can also listen for ways to improve the interview techniques if the interview is tape-recorded. Malfunctioning equipment and a respondent's uneasiness with being recorded are the drawbacks, however, after some initial wariness respondents tend to forget they are being taped. Tape-recording is essential if the researcher plans to use interviews as the main source of data as in this study. Additionally, preparing a complete transcript from an audio-taped interview is especially important when interviews are a main source of data for a qualitative study.

An interview guide was developed for this study that provided a list of questions to be explored, probing questions, and questions that illuminate the phenomenon experienced by business education teachers (see Appendix A). Questions were developed for the interview guide as result of the literature review for chapter two of the dissertation. The questions were

sourced from the additional resource suggestions from Brown (1998), Evans and Gunter (2004), Gunter and Sivo (2003), Holland (2001), Lewis (1997), McCaslin and Parks (2002), Office of Technology Assessment (1995), Rankin (1995), and Wells (2007). Patton (2002) indicated that the advantage of an interview guide is that it makes sure that interviewer has carefully decided how to best use the limited time available in an interview situation. Additionally, the guide helps ensure that interviewing a number of different participants is more systematic and comprehensive by delimiting in advance the issues to be explored.

The interview questions were piloted to two high school business education teachers during the month of June 2007. The two high school business education teachers were professional acquaintances of the researcher's who volunteered to review interview questions. The two participants reviewed the questions, provided feedback, and suggestions for clarity of questions to the researcher. The primary feedback provided to the researcher was to clarify the intent of the terms preservice teacher preparation and professional development to properly contextualize the interview questions for the participants. The pilot of the questions also resulted in restructuring of the questions to remove any unintentional researcher biased wording in the questions.

Document Review Data Collection Procedures

Document review was the second form of data collection performed for this study. Merriam (1998) wrote, "Documents are, in fact, a ready-made source of data easily accessible to the imaginative and resourceful investigator" (p. 112). Documents include diaries, personal letters, memos, and meeting minutes (Bogdan & Biklen, 1998; Patton, 2002). I collected and examined Personal Data Sheet provided by the participants, looking for career paths, responsibilities, and education and training (see Appendix B).

The Personal Data Sheet is structured similar to an employment application and a resume. The Personal Data Sheets were also used to capture the participant selected pseudonym. Patton (2002) stated that documents prove valuable not only because of what can be learned directly from them, but, also as stimulus for paths of inquiry that can be pursued through direct observation or interviewing.

Member Check Data Collection Procedures

The third form of data collection utilized for this study was participant requested member checking of the transcribed interviews. Ball et. al (2003) indicated that the validity of a researcher's reconstruction of an individual's perspective can be validated by member checking. Member checking involves having the study participants review statements made in the interview transcripts for accuracy and completeness. Member checking might also reveal factual errors that can be easily corrected by the researcher. Member checking could also lead to a need by the researcher to collect additional data to reconcile any discrepancies. Patton (2002) also found that researchers can learn a great deal about the accuracy, completeness, fairness, and perceived validity of their data analysis by having the people described in that analysis react to what is described and concluded. For this study, the third contact with the participants involved emailing a copy of the transcribed interview to request confirmation of the transcripts, identification of errors or misinterpretation, or factual omissions from the interviews (see Appendix E).

Data Analysis Procedures

Patton (2002) wrote that qualitative analysis transforms data into findings. However, no formula exists for that transformation. The challenge of qualitative analysis lies in making sense of massive amounts of data, which can include interview data, field notes, observational data as

well as documents. This involves reducing the volume of raw information, sifting the trivial from the significant, identifying significant patterns, and constructing a framework for communicating the essence of what the data reveals. Further, Patton (2002) writes,

> There are no formulas for determining significance. No ways exist of perfectly replicating the researcher's analytical thought processes. No straightforward tests can be applied for reliability and validity. In short, no absolute rules exist except perhaps this: Do your very best with your full intellect to fairly represent the data and communicate what the data reveal given the purpose of the study. (p. 433)

Bogdan and Biklen (1998) reported that data analysis is the process of systematically searching and arranging the interview transcripts, field-notes, and other materials that you accumulate to increase the researcher's understanding of them and enable the researcher to present what has been discovered to others. For this study, the interview transcripts were analyzed for themes common among the participants' answers to the interview questions.

Bogdan and Biklen (1998) suggested that there are two modes on qualitative data analysis. In one approach, analysis is concurrent with data collection and is more or less completed by the time the data are gathered. The other mode involves collecting the data before doing the analysis. Bogdan and Biklen stated that new researchers should begin some data analysis while in the field, but leave the more formal analysis until most of the data have been collected. Problems of establishing rapport with the participants and getting out in the field are complicated and too consuming for new researchers to enable them to actively pursue analysis. (Merriam, 1998; Patton, 2002) also states that the right way to analyze data in a qualitative study is to do it simultaneously with data collection. For these reasons, data analysis for this study was conducted concurrent with the interviews, observations, and document review, with the more

complex data analysis occurring at the end of the data collection. As data analysis begins, the researcher will develop coding categories to assist in the identification of themes.

Bogdan and Biklen (1998) reported that as the researcher reads through the data, certain words, phrases, patterns of behavior, participant's ways of thinking, and events repeat and stand out. They suggest developing a coding system that allows the researcher to search through the data for regularities and patterns as well as for topics the data cover, and then to write down words and phrases to represent these topics and patterns; these words and phrases become coding categories. These coding categories are means of sorting the descriptive data collected so that the material on a given topic can be physically separated from other data. Maykut and Morehouse (1994) also suggest that developing some manageable classification or coding scheme is the first step of analysis. Content analysis involves identifying, coding, categorizing, classifying, and labeling the primary patterns in the data. This essentially means analyzing the core content of interviews, field notes, and documents to determine what is significant. As each new unit of meaning is selected for analysis, it is compared to all other units of meaning and subsequently group (categorized and coded) with similar units of meaning. Finally, Merriam (1998) suggests that coding occurs at two levels: (a) identifying information about the data, and (b) interpretative constructs related to analysis. The coding scheme can be as simple as identifying a theme that can be illustrated with numerous incidents, quotes, and so on. The method requires the *constant comparison* between units of data. A unit of data is a significant piece of data, which can be one word to several pages of transcripts. Through this comparison process, categories are developed inductively from the data. For this study, I looked for quotes or phrases from the transcribed participant interviews to generate the codes in the data using the constant comparative data analysis method.

The constant comparative method was used to facilitate the identification of themes among coded data. Maykut and Morehouse (1994) and Patton (2002) stated that the constant comparative method of analyzing qualitative data combines inductive category coding with simultaneous comparison of all units of meaning obtained. The constant comparative method involves systematically examining and refining variations in emergent and grounded concepts. Variations in the concept must be sampled to rigorously compare and contrast those variations.

Merriam (1998) defined a unit of data as any meaningful or potentially meaningful segment of data. A unit of data can be as small as a word a participant uses to describe a feeling or phenomenon, or as large as several pages of field notes describing a particular incident. Maykut and Morehouse (1994) stated that if there are no similar units of meaning, a new category is formed. In this process there is room for continuous refinement; initial categories are changed, merged or omitted; new categories are generated and new relationships can be discovered. Merriam (1998) stated that the basic strategy of the constant comparative method of data analysis is compatible with the inductive, concept-building orientation of all qualitative research and has been adopted by many researchers who are not seeking to build substantive theory.

Category construction is data analysis. Once all of the data had been collected for this study, there was a period of intensive analysis when tentative findings were substantiated, revised, and reconfigured. Category construction began with reading the interview transcript, the field notes, and the Personal Data Sheets, and jotting down notes, comments, observations and questions in the margins next to bits of data that were interesting, relevant, or important to the study. After reviewing the entire transcript, I went back over the notes and comments in an attempt to group the comments and notes that seem to go together. I repeated this process

throughout each piece of data, keeping in mind the groupings that were extracted from the first transcript, checking to see if those grouping are present in the next set of data. I made a separate list of comments, terms, and notes from the second set of data and then compared this list with the prior data. The list of comments, terms, and notes were merged into one master list of concepts derived from the data. This master list constituted a primitive outline or classification system reflecting the recurring themes or patterns in the data (Merriam, 1998).

After the themes of data were outlined, I developed terms, concepts, and categories that reflected what had been found in the data. The categories reflected the purpose of the research. In effect, the categories became the answers to the research question(s). Merriam (1998) stated that the categories should be exhaustive, mutually exclusive, sensitizing (as sensitive as possible), and conceptually congruent. Conceptual congruence means that the same level of abstraction should characterize all categories at the same level. The number of categories a researcher constructs depends on the data and the focus of the research. The fewer the categories, the greater the level of abstraction, the greater ease the researcher has when communicating the findings to others. The categories can be made more robust by searching through the data for more and better units of relevant information.

Data Reliability and Validity Procedures

Validity refers to the appropriateness, meaningfulness, and usefulness of the inferences researchers make based on the data collected, whereas reliability refers to the consistency of these inferences over time. Reliability and validity are important to qualitative research as the concepts apply to the observations researchers make and to the responses received to the interview questions. A fundamental concern in qualitative research revolves around the degree of confidence researchers can place in what they have seen or heard (Fraenkel & Wallen, 2001).

Therefore, all research is concerned with producing valid and reliable knowledge in an ethical manner. Being able to trust research results is especially important to professionals in applied fields, such as education, which practitioners intervene in people's lives. Qualitative results are trustworthy if there has been some accounting for validity and reliability, and the very nature of qualitative research means that this accounting takes different forms than in more positivist quantitative research (Merriam, 1998). In a qualitative study, much depends on the perspective of the researcher. Qualitative researchers use a number of techniques to check their perceptions in order to ensure that they are not being misinformed, that they are, in effect, seeing and hearing what they think they are (Fraenkel & Wallen, 2001).

Creswell (2003) provides a list of methods to ensure validity in qualitative research. A partial listing of those methods includes, triangulation, clarification of the bias the researcher brings to the study and the use of rich, thick descriptions to convey the findings, which may transport readers to the setting and give the discussion an element of shared experiences. Merriam (1998) states that assessing the validity and reliability of a qualitative study involves examining its component parts, as you might in other types of research. A qualitative study must affirmatively answer the questions, were the interviews reliably and validly constructed; was the content of the documents properly analyzed; do the conclusions of the study rest upon the data?

Fraenkel and Wallen (2001) also suggested several methods of ensuring reliability and validity in qualitative research. Using a variety of strategies to collect data to draw a conclusion enhances validity; this kind of checking is often referred to as triangulation. Biklen and Bogdan (1998) wrote that triangulation was first borrowed in the social sciences to convey the idea that to establish a fact you need more than one source of information. Triangulation in qualitative

research means many sources of data were used in a study rather a single source because multiple sources lead to a fuller understanding of the phenomena being studied by the researcher.

Additional suggestions by Fraenkel and Wallen (2001) to ensure validity in qualitative research include, checking one informant's description of something against another informant's description of the same thing; discrepancies in descriptions may mean the data are invalid. Qualitative researchers should record their own thoughts as they go about their data collection. Responses that seem unusual or incorrect can be noted and checked later against other remarks. Also, qualitative researchers should use audiotapes and/or videotapes when possible and appropriate to ensure the authenticity of the interview. For this qualitative study, I analyzed the participants' answers to questions, performed member checks, and reviewed personal data sheets to ensure the reliability and validity of the data.

Triangulation of the data from interviews, member checks, and personal data sheets, strengthened this study by combining multiple data collection sources. Additionally, participants were emailed copies of the findings to review the data analysis. I reviewed the participants' responses from both the member checks and the data analysis as additional method of validation of the data for accuracy. Patton (2002) found that the logic of triangulation is based on the premise that no single method ever adequately solves the problem of rival causal factors. Because each method reveals different aspects of empirical reality, multiple methods of observation must be employed. Research studies that use only method of data collection are more vulnerable to lacking validity and reliability linked to the one particular method, such as loaded interview questions, biased or untrue study participant responses. Using multiple methods allows inquiry into a research question with multiple data collection methods, which taken independently may have weaknesses, however, the strengths of each methods compensates

for the weaknesses. However, it is important to note that the strength of data triangulation is not to demonstrate that different data sources provide the same result, but, the point is to test for data consistency. Finding inconsistencies in the data should not be viewed as a weakness, but, rather as an opportunity to probe deeper into the phenomenon under study. For this study, I triangulated three sources information in the data collection: (a) interviews, (b) member checks, and (c) personal data sheets. Triangulation using these sources of data collection and analysis strengthened reliability as well as internal validity. Internal validity deals with the question of how research findings match reality. Do the findings capture what is really there? Has the researcher observed or measured what they think they are measuring. By triangulating the three sources of data collection, I affirmatively answered the questions of internal validity as well as reliability for the study findings.

Summary

This chapter outlined the methodology for this study. Issues related to research design, researcher's role, sample selection, data collection, data analysis, and validity and reliability were presented. The goal of qualitative research is to describe and explain, and not to answer questions of frequency and quantity. Specifically, purposeful sampling was used (Merriam, 1998). Mandatory criteria for this study included teacher certification and completion of a preservice teacher preparation program. Maximum variation sampling was the specific type of purposeful sampling utilized for this study.

Semi-structured interviews were the primary data collection method, along with the use of member checks and personal data sheet analysis as additional data collection methods. The use of three data collection methods served to triangulate the data.

Data analysis began after completion of the interview with the first participant and continued throughout the data collection and data analysis process. Part of the analysis was descriptive; therefore, the researcher anticipated that thick and rich data would be provided. The specific data analysis technique was the constant comparative method. To strengthen validity and reliability of the data, I performed data triangulation, which included data analysis of the participants' interviews, participant solicited member checks, and analysis of the participant personal data sheet.

The purpose of this qualitative study was to describe high school business education teachers' perceptions about their preparedness to integrate technology into the curriculum. Specifically, this study addressed two research questions: (1) how do business education teachers describe their perceptions using five specific categories of technologies as instructional tools? and (2) how do business education teachers describe their technology-related preservice education preparation and professional development experiences?

The specific categories included productivity software, graphic applications, interactive technologies, telecommunications resources, and computer-assisted applications. The participants were high school business education teachers selected from a metropolitan school system in the southeastern U.S. This was not an intervention study and although some business education teacher perceptions about technology, levels technology integration, or technology use may have increased or decreased, those outcomes were not the focus of this study.

CHAPTER 4

Findings

This chapter presents findings of the study in three parts. The first part presents a demographic profile of the participants, the second and third parts address findings related to the research questions. The purpose of this qualitative study was to describe high school business education teachers' perceptions about their preparedness to integrate technology into the curriculum. The study explored high school business education teachers' perceptions about their knowledge and skills gained (preparedness) resulting from their (1) technology-related preservice teacher preparation and, (2) technology-related professional development. Specifically, the following research questions guided the study:

1. How do business education teachers describe their perceptions using five specific categories of technologies as instructional tools?
2. How do business education teachers describe their technology-related preservice education preparation and professional development experiences?

Ten business education teachers from one metropolitan public school system in the southeastern United States participated in this study. Respondents were identified through the Director of Career and Technology Education in one of the school districts and other professional referrals. The participants were emailed a participant solicitation letter from the Director of Career and Technology Education (see Appendix C).

Kvale (1996) stated that in current interview studies, the number of interviews tend to be around 5 to 15 participants. This number can be attributed to a combination of the time and

resources available for the investigation and to the law of diminishing returns. Additionally, Maykut and Morehouse (1994) found that maximum variation sampling allows the researcher to understand some phenomenon by seeking out participants or settings that represent the greatest differences in that phenomenon. The selected participants' years of experience as a high school business education teacher ranged from one year to thirty five years, reflecting a wide range experience and diverse teacher preparation backgrounds. As Merriam (1998) indicated, size sample should be limited at the point where redundancy reached in the data collection. For this study, redundancy was reached after the tenth participant interview; subsequently, two additional scheduled interviews were cancelled by the researcher. The constant comparative method was used for data analysis. The steps used in determining the categories and themes are discussed below in Table 1.

Table 1 Constant Comparative Data Analysis Procedures

Step 1: Data analysis began after completing the first interview.
Step 2: The first interview transcripts was analyzed to identify "meaningful units" of data within the transcripts. I coded the data using descriptors within the transcripts, such as repeated key phrases.
Step 3: I grouped the data together into categories after reviewing interview transcripts, Personal Data Sheet, and field notes. I repeated this process for each piece of data, checking to see if the grouping was present, creating a master list of categories. If no similar category was found in a dataset, I created a new category.
Step 4: An outline or classification system reflecting the recurring themes or patterns in the data was developed.
Step 5: I developed the categories that reflect what has been found in the data. The categories will reflect the purpose of the research. The categories became the answers to the research questions for this study

As an example of the category construction that occurred in step, I reviewed the transcripts and identified noticed that several participants repeated the phrase self-taught knowledge when referring to their perceptions of their technology-related preservice teacher preparation. Additionally, several of the participants mentioned notable education scholars when describing their perception of their preservice teacher preparation program. For instance, a couple of the participants referred to their knowledge of John Dewey when reflecting on their preservice teacher preparation experience.

Part I: Participant Demographic Profiles

The demographic profile questions from the interview guide are shown below in Table 2. The participant demographical response data are provided in Table 3. The demographical data included pseudonym, courses taught, years of classroom experience, and prior corporate experience. The demographical questions were validation of the information participants provided on the Personal Data Sheet.

Table 2 Demographic Interview Questions

Question 1, Part A: Describe your current work situation in terms of your classroom teaching responsibilities.
Question 1, Part B: How and why did you become a business education teacher?
Question 1, Part C: How long have you been certified as a business education teacher?

Table 3 Participant Demographical Data

Pseudonym	Courses	Years of Experience	Corporate Experience
Bill	Computer Applications	1	Yes
Alex	International Business Entrepreneurship Banking and Finance Computer Applications Business Law	6	No
Marie	Computer Applications CBE Work I Personal Finance & Economics	35	No
Bessie	Keyboarding Computer Applications Web Page Design Business Management	6.5	Yes
Catherine	Computer Applications Business Law Business Communications	10	Yes
Kyla	Word Processing Desktop Publishing Computer Applications	5	Yes
Clarence	Computer Applications Accounting Word Processing I & II Desktop Publishing	16	No
Brenda	Communications for Business Computer Applications Information Technology Banking and Finance	4.5	Yes
John	Accounting Business Law International Business Computer Applications	4	Yes
Lucy	Computer Applications Banking and Finance	1	Yes

Bill. Bill is a certified business education teacher with one year of classroom teaching. Bill has been certified to teach business education by the Georgia Professional Standards Commission for one year.

Bill taught approximately 90 students in the 9th grade academy at his school during the 2006-2007 school year. In addition to classroom teaching responsibilities, Bill was also the faculty advisor for the Future Business Leaders of America (FBLA) student organization at his school. Bill's classroom instruction was comprised of a block schedule or four, 90 minute segments of computer applications courses.

When explaining how and why he became a business education teacher, Bill indicated that he had been in the retail management business for about twenty-five years and decided to make a career change. Some of Bill's family members are teachers, and after examining several career options, Bill decided teaching might be a career he could pursue. Bill decided that business education would allow him an opportunity to train and develop people, while providing an opportunity to expand his knowledge of technology.

Alex. Alex is a certified business education teacher with six years of classroom teaching experience. Alex has been certified to teach business education by the Georgia Professional Standards Commission for six years.

Alex taught high school students in grades 9 through 12 during the 2006-2007 school year. In addition to classroom teaching responsibilities, Alex was also the career and technology department chair and was involved in the High Schools That Work or Title I programs. Alex's classroom instruction was comprised of a block schedule or four, 90 minute segments which included international business and investing courses for the 2007-2008 school year. Her duties as career and technology department chair included: (1) ensuring the career technology teachers

provided appropriate subject-matter instruction, (2) the career technology teachers had the appropriate technology or professional development resources, and (3) ensuring selection and procurement of appropriate textbooks for the career and technology teachers at her local school.

When asked how and why she became a business education teacher, Alex explained that she initially majored in social science education; however, after a few courses in social studies, she lost interest in the subject and decided to change majors. Alex stated that she wanted to do something that she could "get excited about." She looked into business education because she assumed if she was dissatisfied with the classroom experience, she could use the degree in corporate America. Alex also liked that business education provided students with hands-on training. She felt that business education offers practical life skills and business education teachers would not necessarily have to try and convince students of the value of the course content because they already understood that it is important and it is going to be useful.

Marie. Marie is a certified business education teacher with thirty-five years of classroom teaching experience. Marie has been certified to teach business education by the Georgia Professional Standards Commission for thirty five years.

Marie retired from her business education teacher position at the conclusion of the 2006-2007 academic school year in June 2007. In her most recent classroom teaching position, Marie provided instruction in computer applications and multimedia courses to high school students in grades 9-12. Marie has also taught personal finance, accounting, and keyboarding over the course of her teaching career. In addition to her classroom teaching responsibilities, Marie was also a Work-Based Learning Coordinator for fifteen years.

When explaining how and why she became a business education teacher, Marie indicated that she had been impressed with her business education teacher when she was in high school.

Marie admired the professional demeanor of her business education teacher and thought she was the "epitome of what a woman would be who was a professional." Marie found herself gravitating toward business education as a result of admiring her teacher. As a high school student, Marie took two additional business education classes from this teacher and had the same impression of the teacher's professionalism. Marie also stated that because she grew up poor, her options were limited upon graduation from high school; especially, as a young African-American female. After Marie finished high school, she received a four-year college scholarship and focused on business administration because she wanted to "get a good job" at the local corporate offices of a Fortune 500 company in her hometown. However, Marie decided to pursue business education because of her passion for the subject and admiration of her high school business education teacher.

Bessie. Bessie is a certified business education teacher with six and a half years of classroom teaching experience. Bessie has been certified to teach business education by the Georgia Professional Standards Commission for six and a half years.

Bessie taught business education at a non-traditional high school in the 2006-2007 school year. Bessie's non-traditional educational setting was a school for students considered to be at-risk of dropping out of high school. Bessie was the only business education teacher at her school and had instructional responsibilities for all of the computer applications courses. Bessie also taught an integrated technology class that included instruction in Microsoft Word, webpage design, and desktop publishing.

When explaining how and why she became a business education teacher, Bessie indicated that she majored in social work and worked at the Department of Family and Children Services and the Housing Authority before becoming frustrated with that career choice and the

clientele. She stated, “I just wanted to kind of change the direction of my life.” Bessie went back to undergraduate school and received her business education certification at a teacher preparation program in Georgia. Bessie chose business education as her major because of the ease of transferring computer classes completed as continuing education at a community college in the state of Georgia.

Catherine. Catherine is a certified business education teacher with 10 years of classroom teaching experience. Catherine has been certified to teach business education by the Georgia Professional Standards Commission for 29 years. Catherine taught computer applications, business law and business communications during the 2006-2007 school year.

When explaining how and why she became a business education teacher, Catherine indicated that she did really well in business courses, and her summer jobs before going to college were in an office. Catherine also stated that she just seemed to grasp that kind of work pretty easily and thought it was interesting. Catherine’s recalled that her first teaching assignment was a disastrous experience at a middle school where she left in tears. Catherine left teaching and took a position with a government agency for three years. After leaving her government position, Catherine worked as a substitute teacher to get prepared to go back into the classroom, because she stated, “that’s what I really wanted to do.” Catherine went back into the classroom as a high school business education teacher.

Kyla. Kyla is a certified business education teacher with five years of classroom teaching experience. She has been certified to teach business education by the Georgia Professional Standards Commission for five years.

Kyla will assume a business education teacher position at a new high school in the 2007-2008 school year. In addition to her classroom teaching responsibilities at the new school, Kyla

will coach track and field. Kyla previously coached basketball in addition to teaching business education courses during the 2006-2007 school year.

When explaining how and why she became a business education teacher, Kyla indicated that coaching high school athletics brought her into teaching. Prior to becoming a classroom teacher, Kyla worked for the Women's Basketball Coaches Association as the membership and convention services manager. In addition to her duties with the Women's Basketball Coaches Association, Kyla coached college basketball for a few years. One of the participants at a convention for the Women's Basketball Coaches Association mentioned a vacant business education and coaching position at a local public high school; Kyla interviewed for the job and accepted the position.

Clarence. Clarence is a certified business education teacher with sixteen years of classroom teaching experience. Clarence has been certified to teach business education by the Georgia Professional Standards Commission for sixteen years.

Clarence taught two basic business subjects and one skill subject in the 2006-2007 school year. The skill subject was computer applications, which was a combination of keyboarding using the Microsoft Office Suite and Photoshop. The basic business courses were an accounting course and a work-based learning course. Clarence was also the department chair of the career and technology department during the 2006-2007 school year. The career and technology department consisted of three departments: (1) business education, (2) family and consumer science, and (3) health care.

When explaining how and why he became a business education teacher, Clarence indicated that his favorite high school teacher was a business education teacher. Based on her positive comments about his typing skills, Clarence joined Future Business Leaders of America

(FBLA), where he competed at FBLA skill events. As Clarence got older, he became interested in computers and took a computer class during his senior year in high school. When Clarence went to college, he knew he wanted to be a teacher; however, he was unsure of his undergraduate major. Clarence met with a college advisor, and after stating, "I'm going to be a teacher, but I want to teach with computers," his advisor sent him to the business education department. Clarence stated, "that's what I wanted to do, but I didn't know what it was called."

Brenda. Brenda is a certified business education teacher with four and a half years of classroom teaching. Brenda has been certified to teach business education by the Georgia Professional Standards Commission for two years.

Brenda will serve her first term as the department chair for the career technology department at in the 2007-2008 school year. During the 2006-2007 school year, Brenda taught communications for business, computer applications, information technology foundations, business law and banking finance. Brenda indicated that she will teach the same courses in the 2007-2008 school year. Brenda stated that computer applications was a requirement for most students at her school and the business education department ten sections of the course are assigned throughout the department, including the department chair. Brenda stated that the information technology course in the 2007-2008 school year will be a new course offered as a result of the completion of a new information technology lab. Brenda assumed ownership of the lab and was assigned to teach the new courses related to information technology in the 2007-2008 school year.

When explaining how and why she became a business education teacher, Brenda indicated that she had been in education for approximately four and a half years; the first six months she served as a substitute teacher to "get a taste of what teaching was like." Brenda

started her career in the accounting field and later moved to human resources. However, it was always Brenda's goal to go into education, but, "she just never saw how she would get there" when she considered the difference in the pay between education and corporate America. Brenda explained that she eventually took six months off from her corporate job to reassess her career goals and decided to become a substitute teacher. According to Brenda, it was always her goal to be in business education because of her corporate experience. After her six month assignment as a substitute teacher, Brenda made the decision to go to graduate school and complete a master's degree in business education. During the last semester of her master's program, Brenda received a job offer from the school where she had completed her student teaching assignment.

John. John is a certified business education teacher with four years of classroom teaching experience. John has been certified to teach business education by the Georgia Professional Standards Commission for one year.

John taught five business education courses per day during the 2006-2007 school year. John taught in a computer lab with thirty computers and a large classroom with student enrollment in each course between twenty five and thirty students. John taught computer applications, business law, international business and accounting in the 2006-2007 school year.

When explaining how and why he became a business education teacher, John indicated that after twenty six years in corporate America, he sold his business venture in 1999 and accepted a project management position with a software development firm based in the southeaster United States. However, his assignment was located in the Hague, Netherlands working for a telecommunications company. John continued to work in the Netherlands until 2001. After contemplating retirement, John stated that some friends indicated to him, "John,

you'd be a good teacher," so, that's what he decided to do instead of retirement. John started as a substitute teacher in family and consumer science education before being offered a position in the business education department. The employment offer as a business education was contingent upon successful completion of an alternative business education certification program.

Lucy. Lucy is a certified business education teacher with one year of classroom teaching experience. Lucy has been certified to teach business education by the Georgia Professional Standards Commission for six years.

Lucy taught computer applications and banking and finance during the 2006-2007 school year. She explained that she was not aware of her instructional load for the 2007-2008 school year.

When explaining how and why she became a business education teacher, Lucy indicated that she had been working as a technology director in North Carolina and had to be certified by the state of North Carolina in business education. Lucy decided that she wanted to give something back to the kids in the community and that's how she "ended up teaching." Lucy sent her resume to a few school districts in the southeastern United States area and received an offer of employment at a high school. Lucy has been certified to teach for seventeen years, although, she has only been certified as a business education teacher for six years and has only taught as a business education teacher for one year.

After reviewing the participant demographic profiles, it can be concluded that the ten participants represented a maximum variation sample. Fifty percent of the participants had one to five years of experience, thirty percent had six to ten years of experience, and twenty percent had eleven years or more of classroom experience. Additionally, the participants included

business education teachers who received certification as a business education through traditional preservice preparation programs, as well as participants who received teacher certification through alternative teacher certification programs. Interestingly, the three participants without corporate experience had all received their teacher certification through a traditional preservice teacher preparation at a college or university. Of the three participants who had completed a traditional preservice teacher preparation program, those two had the most classroom experience; Clarence with sixteen years and Marie with thirty years of experience. The differences in teacher preparation, years of classroom experience, and corporate experience aligned to Maykut and Morehouse's (1994) definition of maximum variation sampling.

Part II: Findings

This part of the chapter presents findings of the study based on the first research question, "How do business education teachers describe their perceptions using five specific categories of technologies as instructional tools?" The five specific categories of technologies included, productivity software, graphic applications, interactive technologies, telecommunications resources, and computer-assisted applications. Data analysis for the first research question involved sorting, categorizing, and analyzing the related responses from which three themes were generated: (a) real life experiences, (b) relevancy of learned technology, and (c) assumed proficiency. The interview questions for research question one are shown below in Table 4.

Table 4 Five Categories of Technologies

Question 1:	Describe how you perceive your preparedness to integrate productivity software, defined as word processing, spreadsheet, database management, and integrated software as instructional tools as result of your preservice teacher preparation and/or your professional development training?
Question 2:	Describe how you perceive your preparedness to integrate graphic applications, defined as presentation and desktop publishing software as instructional tools as a result of your preservice teacher preparation and/or your professional development training?
Question 3:	Describe how you perceive your preparedness to integrate interactive technologies, defined as authoring software, multimedia, and CD-ROM as instructional tools as a result of your preservice teacher preparation and/or your professional development training?
Question 4:	Describe how you perceive your preparedness to integrate telecommunications resources, defined as the Internet, electronic mail, commercial on-line services, and electronic bulletin boards as instructional tools as a result of your preservice teacher preparation and/or your professional development training?
Question 5:	Describe how you perceive your preparedness to integrate computer-assisted instruction, defined as simulations and games, drill and practice, tutorials and discipline-specific programs as instructional tools as a result of your preservice teacher preparation and/or your professional development training?

The themes and categories based on the participant responses are shown in Table 5. A discussion of each theme and its related categories follows Table 5.

Table 5 Themes and Categories for Technologies

Themes	Categories
Real Life Experiences	Practical Work Experience Formal Classroom Exposure Self Taught Knowledge
Relevancy of Learned Technology	Time Sensitive Technology Training Specialized Software Technology
Assumed Proficiency	Universal Exposure Business Teacher Expectations

Real Life Experiences

The theme "real life experiences" emerged as business education shared their perceptions about their preparedness to use five categories of technologies as instructional tools. The definition of real life experiences reflected knowledge and experience gained outside of a formal classroom. Data analysis further revealed three categories within the theme: (a) practical work experience, (b) formal classroom exposure, and (c) self taught knowledge. The participants had strong perceptions of preparedness to use the five categories of technologies based on their real life experiences. The categories related to the *real life experiences* theme are discussed below using selected participant responses due to the space limitations required to present all of the participant responses to the five specific categories of technologies.

Practical Work Experience. Seven of the ten participants had started their career in corporate America before becoming a business education teacher. Consequently, those seven participants had exposure to some of the five categories of technologies on the job prior to becoming a business education teacher and brought that experience into the classroom. Bill provided some background information on his corporate experience and how it impacted his perception on the use of technology.

> I got an undergraduate in business administration, with a concentration in finance, so, the accounting functions of business education, entrepreneurship, and so forth, I had that in my undergrad. I worked again, twenty five years in retail, had a lot of conferences and so forth that we went to that got me over the years, up to speed in computer sciences and different aspects of legal parts of business and so forth.

John perceived that his preparedness to use the five categories of technologies came from his business background, where he was an engineer, worked for a software development

company, and had his own software development product. When asked to describe his perception of his preparedness to integrate interactive technologies such as authoring or multimedia software as an instructional tool and as a result of either his preservice teacher preparation or professional development, John referred to his business background in this way:

> No training in those at all. When I first came out of school, I went to work in submarine nuclear design, and after that I spent the rest of my working career in the telecommunications field. So, I understand software development and was using email before – let's put it this way, "I was one of the first testers, beta testers of Yahoo's email account".

Lucy had spent two years in corporate America as a technology director and expressed that her perception of her preparedness to integrate graphic applications as an instructional tool was a result of her business background instead of her preservice teacher preparation or professional development training:

> I think I'm pretty prepared to teach those, as well, having worked at the Department of Education, you know, we do a lot of presentations. So you know, being able to take my expertise or knowledge of what a PowerPoint presentation should look like, how it should feel, you know, the general make-up of it, is fine. In terms of desktop publishing, because, you know, we have to send different things out, flyers and things like that. So, I think my knowledge of using those types of things and the work experience and stuff that I had with those particular components has really helped me in my classroom, because now I can give it to the kids.

Formal Classroom Exposure. All of the participants were certified to teach business education by the state's Professional Standards Commission. The participants received their

business education certification through either alternative teacher certification programs, reciprocal certifications (i.e. business education certification earned in a state other than Georgia), or a traditional teacher preparation program in Georgia. All of the participants had some exposure to technology as a result of their preservice teacher preparation. When discussing their perceptions about their preparedness to use the five categories of technologies as instructional tools, the participants were candid about their formal classroom exposure. Clarence perceived that his formal classroom exposure through a preservice teacher preparation program had prepared him to integrate productivity software such as word processing, spreadsheets, and database management as an instructional tool.

> Preservice teacher preparation prepared me to teach those classes. In my school system, when the students get to high school, they already know that, you know, they get it in middle school now. So they take word processing in middle school, how to format a letter and all that type of stuff. So when they get to high school, we teach them to compose it at the keyboard and format the letter. Like in database management, they do the basics, they know how to build a database, that's they only thing they teach team [in middle school]. We teach them how to import it into another software and make it work and run basically like a program. So, that's what we'll do, and we've taken things from the basics to the next level. And I learned how to do all of that in my undergrad training, and just learned how to do it then, because you know, the software changed, the version changed, some of the steps of how to do these things changed, but you know, the outcome should be the same; it just may take a little time to prepare for. And I learned that on my own, well, not on my own, but based off my experience I had in undergrad school.

Alex also perceived that her formal classroom experience during her preservice teacher preparation had prepared her to integrate office productivity software as an instructional tool:

> I would say that I had a very good background in word processing from the university and undergrad. I will say that I had a decent background with the database, you know, with, like, Access. However, Access is one of those things that if you don't continuously use it, you forget, which is what has happened to me. I could probably sit down at a computer and figure it out. But is it fresh? I mean, that was ten years ago or something like that, you know, when I had that class, so it's kind of hard to say. Excel, well, yeah, I mean, I would say that I know Excel pretty well from undergrad.

Bill was a first year business education teacher during the 2006-2007 school year; he had only been certified to teach for one year. Bill perceived his preservice teacher preparation experience had prepared him to integrate both office productivity and graphic applications software. When describing his perception of his preparedness to integrate office productivity software as an instructional tool as a result of either preservice teacher preparation or professional development, Bill stated:

> I think I was very well prepared to teach those in the classroom. Again, with the courses taken in undergrad and also graduate school specific to that, we actually took business administration in MS Office.

When describing his perception of his preparedness to integrate graphic applications software such as presentation and desktop publishing as instructional tools as a result of either preservice teacher preparation or professional development, Bill stated:

> I had two courses [formal classroom exposure] in desktop publishing during the time they were going through software change, so, what we learned was definitely helpful, but with

what's being sold and bought by counties; I almost have to go through a relearning process.

Self Taught Knowledge. Due to the rapidly changing nature of technology, the participants described self teaching as a means of obtaining knowledge in one or more of the five categories of computer software packages. Catherine perceived that she did not receive any assistance at all from either preservice teacher preparation or professional development training to prepare her to integrate office productivity software as an instructional tool:

> Hmm. Did not receive any assistance in terms, and I shouldn't say any, but, not very much, in terms of learning it before I taught it. Most of what I learned has been my teaching myself, I really have been self taught. Is that answering your question? I had not received any classes. Most of it has been things that I've learned on my own, that I've taken the book and I've gone home and gone over the applications or between classes or planning periods, that I'd sit and go through books to teach the classes.

When Catherine described her perception of her experience with integrating graphic applications, defined as presentation and desktop publishing software, as a result of either preservice teacher preparation or professional development training, she indicated:

> "I do implement them, but it has been because I've taught myself, and through other teachers. I give them credit, too."

When discussing her perception of her experience integrating interactive technologies, defined as authoring software or multimedia, as a result of either preservice teacher preparation or professional development training, Bessie also indicated that she was self taught:

> "Well, that, if I'm understanding the question, most of that, I kind of picked up on my own…"

Brenda perceived her preparedness to integrate office productivity software such as word processing, spreadsheets and database management as a result of being self taught, rather than a result of either preservice teacher preparation or professional development training:

> Well, I'm the type of person who really learns on my own. I'm self taught. I remember my first job as a staff accountant, I watched the people do the ten-key and I was just wondering, 'How in the world did you do that?' And they said, 'You know what, the best way to learn is to go home and take a telephone and turn it upside down. That's when push buttons were right on front. So, I used my telephone and turned it upside down and I taught myself ten-key, because I really, really wanted to learn ten-key. And when Lotus [1-2-3] first came out, I learned Lotus, self taught, tutorial, trial and error. If I mess up, all I have to do is click undo, so trial and error. Excel, the same thing; Microsoft Word. How can I, I can't go wrong. There's no right or wrong. And I'm the type person, I guess, I'm exploratory. But when I'm driving, if I'm on a route and I'm driving this way and I'm wondering, is there a better way?

Kyla indicated that she had used her time away from the classroom at home to self teach herself on the latest version of Microsoft Windows as opposed to perceiving her experience with integrating office productivity software was a result of either preservice teacher preparation or professional development training. When describing her perception of her preparedness to integrate office productivity software defined as word processing, spreadsheets and database management as instructional tools, Kyla offered the following:

> …but if they had something more advanced that maybe we didn't know that the program could do, or you know, trained on, like, we need to be trained on the new Vista program. There's no training setup for that so, it's, and once that program comes out, we have to

> teach these kids, and I'm like, Ok, right. So, thank God I got it at home and I'll be able to, you know, teach myself. So by the time we do get it, which who knows when we'll actually get it in the classroom, but by the time we do get it, we're prepared for it….

Relevancy of Learned Technology

The theme "relevancy of learned technology" emerged as business educators shared their perceptions about their preparedness to use five categories of technologies as instructional tools. The definition of relevancy of learned technology reflected how current and application technology learned in either preservice teacher preparation or professional development training was to the classroom. This theme included two categories: (a) time sensitive technology training, and (b) specialized interactive technology software. The participants were verbose when describing how the relevancy of learned technology impacted their perceptions about their preparedness to integrate technology as instructional tools. The categories related to the *relevancy of learned technology* theme are discussed below using selected participant responses due to the space limitations required to present all of the participant responses to the five specific categories of technologies.

Time Sensitive Technology Training. The participants described their perceptions of time sensitive training with regard to technology related preservice teacher preparation and professional development training. Time sensitive training was defined as technology training that is provided as the technology is being used and before it becomes outdated. When describing her perception of her preparedness to integrate interactive technologies such as authoring and multimedia software as instructional tools, based on preservice teacher preparation or professional development training, Kyla offered the following:

> At the other school there was no professional development. At the new school, I am about to take an online Dreamweaver class and I'm also going to take an online multimedia class that they offer. So, I think it'll be real helpful, because I planned on teaching the multimedia class in the next semester, and I'll be teaching the…well, I won't actually be teaching Dreamweaver until my lab gets updated and the switch will be second semester. So, I thought I'd go ahead and take those courses so, come second semester, I'll be prepared. But they do offer those, so, I think that's going to be very helpful. But again, they're offering the classes, but, we don't have the technology in the classroom yet, to teach either one of those classes.

Bessie's perception of how time away from the use of software packages affected her preparedness to integrate productivity software, defined as word processing, spreadsheets, and database management software as instructional tools was as follows:

> I think I have pretty adequate skills. One thing that happens, though, is that even though you may have the classes as preservice, if you're not assigned to teach those classes once you get into the field, whatever you know, you're going to lose it because you're going to become an expert at Word, but forgot the ins and outs of PowerPoint. You may become an expert at webpage design and have no clue how to put together a spreadsheet. So, you may have the skills, and I think that my preservice was pretty adequate in teaching me, but, some of the skills I lost because I don't have to use them.

Specialized Software Technology. The majority of the participants perceived their preparedness to integrate interactive software technologies, defined as authoring and multimedia software as instructional tools, as a result of either preservice teacher preparation or professional

development training was insufficient. When discussing her preparedness to integrate interactive software technologies as instructional tools, Catherine stated:

> Ok. I don't know how to use those. Publisher, desktop publishing, I know a little bit about those that I use in my class a little bit. But it's only what I've learned. I don't even have a manual on desktop publishing. And I like it. I think it's a wonderful program, even though in schools we don't use it a lot. And a lot of things you can still do in Microsoft Word that you use desktop publishing for. And all the newsletters and the brochures, you can do all that in Microsoft Word.

Bill perceived that he was not as prepared as he would like to be to integrate interactive technologies as instructional tools:

> Did not get classes in that area, have no real in-service, I would say, in that area. We do teach one or two classes, but, I would like it expanded. If I was adding classes or changing classes, I would definitely maybe have more of that being taught. I would like to know more. So I would say not as prepared as I'd like to be in that area.

Kyla also provided a simple response when describing her perception of her preparedness to integrate interactive software technology as an instructional tool:

> I can't say that there's any training that I've had on desktop publishing or any other graphic programs. I'm prepared just because I'm familiar with the programs and I've used them in coming from the business world, I've used the software and I've used the programs. But I didn't get that training in any kind of professional development or in-service training.

Lucy perceived her preparedness to integrate interactive software technologies as an instructional tool as minimal:

Now those, I don't use a whole lot, so my preparedness to teach those would be, like, very minimal. Yeah, I haven't done anything with Dreamweaver, and up until this summer, I hadn't done anything with Flash either. You know, so somebody else in our department teaches that, I didn't teach that.

Marie perceived that she hadn't been prepared at all on integrating interactive software technologies, defined as authoring software, multimedia and CD-ROM as instructional tools by either preservice teacher preparation or professional development training:

Ok. That's where I guess I have not been prepared at all. I don't know necessarily…it's because I did not…I wasn't required to teach those up until, you know, a couple of years ago with multimedia. And even then, the way they were pronouncing and saying what multimedia was, is not what multimedia truly is. So, for that reason, I have not had, and I don't think the undergrad schools…they may, I'm not real sure, but that would be where a great deal of work needs to be done. Because I don't think even in professional development…I think they should not require it, but, it should be one of those classes or staff development things that every business teacher should be exposed to, but it is not being done.

Clarence, who has sixteen years of classroom teaching experience as a business education teacher, perceived his preparedness to integrate interactive software technologies, defined as authoring software, multimedia, and CD-ROM as follows:

That's a good question, and the answer is going to be this, 'when I was in undergrad school, that type of stuff wasn't there.' So, I don't miss that because I don't know it. But I'm like you, I'm working on a dissertation, so, I haven't had time to go and learn to do that stuff yet. But if I did, I'll put it this way, when I do, if I'm still in the classroom,

> when I do, I'm going to an online class. And you know, those online classes, I've taken one or two just because I had to take some, but, I knew all the stuff that they were talking about, but they're a really good class. So, when I learn to do all of that stuff, like Dreamweaver and all of that, I will take an online class, because that will really come from professional learning. So, as far as doing it now, no, because I don't teach it, I don't know it.

Assumed Proficiency

Assumed proficiency emerged as a theme when participants responded to questions pertaining to business education teachers' perceptions of integrating five categories of technologies as instructional tools. The definition of assumed proficiency reflected an assumption on the part of other educators that business education teachers are technology proficient users of software and hardware. The two categories that evolved from this theme were: (a) universal exposure, and (b) business teacher expectations. The participants perceived that business education teacher's were "expected" to be technology proficient. The categories related to the *assumed proficiency* theme are discussed below using selected participant responses due to the space limitations required to present all of the participant responses to the five specific categories of technologies.

Universal Exposure. A few of the participants perceived their preparedness to integrate five categories of technologies as instructional tools as based on universal everyday exposure to technology instead of preservice teacher preparation or professional development training. Alex discussed her perception of her preparedness to integrate telecommunication resources, defined as the internet, electronic email, and commercial online services as instructional tools as follows:

> Ok. Now, there was…we always used the internet, you know, for different classes, whether it's, you know, university or it's outside professional development. Email was something that, I mean, if you didn't know how to do it, you were kind of lost. And so, it was a requirement. I don't know if we were taught to use email.

Marie offered the following observation when discussing her perception of her preparedness to integrate telecommunication resources as instructional tools:

> Once again, I think they've taken that for granted in professional development, because the internet has been around so long, a lot of times they just assume that you're going to be comfortable, you know, doing that.

Lucy perceived her preparedness to integrate telecommunications resources as instructional tools as her exposure to the technologies as a graduate student, not as a result of her preservice teacher preparation or professional development training:

> For those, I think I'm pretty prepared, because I'm still in school myself, so you know, I've got used to the electronic bulletin board type things, you know, I have to post to, and you know, I use email all the time. And because I'm getting my degree, it's partly online as well as resident, so, I'm on the internet all the time, doing different things like that. So, I think I'm pretty prepared to integrate those into the classroom.

Kyla provided a simplistic statement when describing her perception of her preparedness to integrate telecommunications resources as instructional tools:

> "…it's just stuff that we know from using it."

Business Teacher Expectations. The participants perceived that business education teacher's were expected to be technology proficient at their local school when it came to integrating software in the five categories of technologies as instructional tools. When

describing her perceptions of her preparedness to integrate computer assisted instruction, defined as simulations and games, drill and practice software or tutorials as instructional tools, as a result of preservice teacher preparation or professional development training, Kyla stated:

> There was no professional development or preservice training on that either. I mean, we learned by doing, I think. Take the time to do it before we present it to the class. All of the…any of the gaming software that we have that's related to teaching, I've always just gone on, played with it, tried to learn it. That way, I can instruct the kids. But no training involved in that.

Bessie described how her school district expected her to be technology proficient as follows:

> Every business education teacher gets asked to help with the school webpage. They just automatically give it to you. Oh, you know how to do this. I'm like, 'No, I don't. But it will be real basic if I do.'

Marie provided an illustrative example when discussing how people within her department had an expectation that business education teacher's should know how to integrate email as an instructional tool:

> It's assumed that everybody already knows how to send email. No, and they…but you know, you know how to send email, but we have business teachers that you will have an email coming from your supervisor, and rather than clicking on just to that person, they will respond to everybody who was in his address book that he'd sent the mail out to, and some people get real tacky and say, 'You are only responding to him,' but, they don't tell us still how to do that. So you haven't helped them. Just because you decided you want

to chastise them, you know, you're kind of missing the point here and, you know, you're a business teacher, you should know how to do it, but they don't.

The findings in this section focused on high school business education teachers' perception of their preparedness to integrate five specific technologies as instructional tools. Three themes emerged from the data analysis for the first research question. Real-life experiences, the first theme, provided how illustrative examples of how the participant's perceived their preparedness to integrate technology as an instructional tool based primarily on corporate experience. The second theme, relevancy of learned technology, focused on the participants' perception of the timeliness and relevancy of the technology training they had received either in preservice teacher preparation or professional development. The third theme, assumed proficiency, detailed the perceptions' of the participants as assumed technology experts due to the sometimes mistaken assumption that business education teachers are technology proficient.

Part III: Findings

This part of the chapter presents findings of the study based on the second research questions which asked, "How do business education teachers describe their technology-related preservice education preparation and professional development experiences?" Data analysis for the second research question involved sorting, categorizing, and analyzing the related responses from which two themes emerged: (a) pedagogical foundations as it relates to preservice teacher preparation and (b) continuing education as it relates to professional development.

Table 6 summarizes the themes and categories related to how the business education teachers' described or perceived their technology-related preservice teacher preparation and technology-related professional development.

Table 6 Themes and Categories for Preservice Teacher Preparation and Professional Development

Themes	Categories
Pedagogical Foundations	Instructional Strategies Subject Content Training Modeling
Continuing Education	Access and Availability Administrative Support Experimentation and Exploration

Pedagogical Foundations

Pedagogical foundations emerged as a theme from the data analysis when asking the participants to describe their preservice teacher preparation programs. The definition pedagogical foundations reflected knowledge and experience gained inside of a formal classroom during preservice teacher preparation. The three categories found within pedagogical foundations were identified as: (a) instructional strategies, (b) subject-content training, and (c) modeling. The interview questions used to collect data responding to the second research question are provided in Table 7.

Table 7 Technology-related Preservice Teacher Preparation

Question 1:	What is your perception of the pre-service business education program where you received your business education preparation?
Question 2:	Thinking back to your pre-service business education program, describe an experience when your professor modeled a good use of technology integration?
Question 3:	What would you perceive as the appropriate types of technology-related courses for pre-service business education programs at either an undergraduate or graduate level

The categories within the pedagogical foundations theme are discussed below using selected participant responses due to the space limitations required to present all of the

participant responses to their perceptions of their technology-related preservice teacher preparation.

Instructional Strategies. The category of instructional strategies reflected the participants' perceptions of the technology-related *preservice teacher preparation* they received prior to entering the classroom as a certified business education teacher. Bill, who had one year of classroom experience, was a retired corporate America employee with 25 years of business experience prior to becoming a business education teacher. Bill perceived his preservice teacher education program had prepared him to teach with technology at the high school and adult level:

> So basically, my undergrad was finance and then 25 years of what I would call, you know, the conferences and the different training programs, so forth, prepared me well to be able to teach most courses under the business education heading. I then went to Georgia, got my master's in teaching. They had a concentration focusing on philosophies and pedagogy and so forth, as far as the teaching, but then also had several courses specific to computer education. I think we had a total of, I think, three, specific web design. One was, again, business applications and so forth. So and that was recent, and again, that was geared to not only what you know about computers and technology, but again, how to teach it to high school and adult level.

Alex perceived her preservice teacher preparation program was adequate with regard to the mix of pedagogy and technology content preparation:

> I love, I love, I love my school, I do. But I think they did a good job as far as the pedagogy and theory, and you, learning styles…all of the textbook work….I think in terms of, you know, where I was learning software packages, I mean, it was fine and I feel like I had a decent background on that, content-wise.

Clarence, who had been in the classroom for sixteen years, and was the career and technology department chair at his local school district, perceived his technology-related preservice teacher preparation as excellent:

> I think it was an excellent program. Because, and the reason I say that is because, excuse me, when I was student teaching, I knew everything that the teachers were currently doing, because of my training. I was one of those people, even the, like, word processing, they were using this weird software, we were currently using WordPerfect. No, I'm sorry WordStar, that's what we were using back in the eighties is WordStar. And one of my professors told me, and this is something that has stuck with me from that point until now, and what I, you know, impart into my students once I teach them how to use a particular software. She told me, she said, the format or the way this software is used is going to be used that way. I don't care what software you use, different software may do it differently, but when you bold something, it's bold in WordStar, WordPerfect, whatever. So the format is the same, but the procedure how to do it may be different. So what I did, I sat down with the software one day and I learned how to bold, how to underscore, how to italicize, how to print and all of those things, I said-and it works the same way. So, once I got that in my mind, I could teach any software. So, I felt like my undergraduate program, I really feel it was awesome. So you know, it was, I just felt like my program just, I felt my undergrad program really prepared me for this career, because everything that I learned to do in undergrad, I was able to implement then in my professional career, without any problems, without any hesitations.

Subject-Content Training. Subject-content training emerged as a category under the pedagogical foundations theme during data analysis. The participants perceived there was

insufficient technology-related subject-content training in the preservice teacher preparation program. The most common perceived lack of subject-content training was related to courses on web design. This category seemed to coincide with the category of Specialized Software Technology in the relevancy of learned technology discussion. Bill described appropriate types of technology-related courses for a preservice preparation program with the following words:

> I think definitely computer applications and intimate knowledge of that, and the aspects that it's ever changing, I'm talking about, like MS Office. I definitely think, without a doubt, web design; it is the mailbox of the future as far as I'm concerned, and most kids.

Alex, who is the career technology department chair and a business education teacher at her local school, perceived web design courses as an appropriate technology for preservice teacher preparation programs:

> Appropriate courses. I mean, I definitely think that we need to know Microsoft Office, you know, those typical- your Word, your Excel, your PowerPoint; whatever desktop publishing software that you're going to use; whatever web design.

Marie, who had retired after the 2006-2007 school year, with thirty-one years of business education teaching experience, also perceived that web design courses are appropriate for a preservice teacher preparation program.

> So I think those are the kinds of things that the undergraduate school should prepare young business teachers for, because in business, even though you are not having to use the programming language, like Visual and C+ and, you know, some of the other high-level programming languages, you still need to have a foundation in how to do a webpage, you know. You know, kids may ask you, you know, you know HTML, you don't want to stand there and look at the person like, "And what are you talking about?"

> You're a business teacher, you're supposed to know, you know, certain things. What is FrontPage – you know, just, to me, the basics that are essential now for anybody who's going out, even some videographics, you know. A small amount of – what is it – macromedia, Dreamweaver, you know, just you have to have some of those things, you know. But because technology changes so rapidly, that's, to me, the biggest obstacle that, you know, most undergraduate schools will find, is what to offer, you know, their undergraduate students.

Bessie, a business education teacher with six and a half years of classroom experience, perceived the importance of webpage design courses when designing preservice teacher preparation courses because she is responsible for her school's webpage:

> Of course, Microsoft Office or that whole suite. I think more emphasis needs to be put on the other programs, software programs, like the webpage design-type stuff. Maybe even- like, I'm in a position now wherein I'm responsible for keeping up the school's webpage. But I may know the software end of it, but I don't know the technical aspects of it. And so, that's a real big weakness that I have as a business ed teacher, because people look at you as if you should know everything about the computer – and I don't. I mean, I can help you on the software end, but my weakness is the hardware aspect. And so I think more emphasis needs to be put on that for business ed teachers, because people are going to expect you to know from the router to the tutor, you know, they expect you to know everything. So that's one thing I would recommend is more hardware-based, and I don't know the right word, but the technology part of the hardware.

Kyla, who has five years of classroom teaching experience, perceived web design courses as appropriate technology courses for a preservice teacher preparation program:

> Like some of the web design courses for some of the new programs – the Dreamweaver's and, because as the technology gets upgraded, we're not getting trained in that. We have to just get it and figure it out on our own. And I think those kind of courses need to be added.

Modeling. As discussed in Chapter 2, teachers teach as they were taught. Modeling the use of technology as an instructional tool was generally perceived as lacking according to the participants' perceptions of their preservice teacher preparation program. Alex described her perception of modeling technology instruction in her preservice teacher preparation as follows:

> "Yeah. I don't know if I can remember any professor using something that I thought was just fantastic. I mean, we've done your typical PowerPoint presentations with your LCD projector, I mean, and that's technology."

Alex makes another profound statement when discussing the technology modeling in her preservice teacher preparation program:

> "And to be very honest, sometimes I feel like I'm no different from a teacher who didn't go through a teacher education program, but is just getting certified."

When describing her perception of an experience where a professor modeled technology as an instructional tool in her preservice teacher preparation program, Catherine did not have a good example:

> Hmm. Now, to be honest, I don't think I can really tell you that I have actually been taught how to use the computer or technology. I basically taught myself, and through, I guess, workshops or daily conferences, something like that, or maybe a class that took two to three days or maybe even a week. But I have not seriously been taught to use a computer.

Kyla's experience with modeling the use of technology as an instructional tool in her preservice teacher preparation program was unfavorable:

> Maybe just- I think I did one that did show us how to use the SMART Boards. And it was so brief, it was- we did- it was just somebody came in and kind of mentioned it as he was preparing, and spent some time, a little bit of time on it. But other than that, I can't think of anything, you know, directly related.

Continuing Education

Continuing education emerged as a theme from the data analysis when asking the participants about their perceptions of their technology-related *professional development training*. The definition of continuing education reflected knowledge and experience gained from technology-related professional development training. The three categories of continuing education were identified as: (a) access and availability, (b) administrative support, and (c) experimentation and exploration. The interview questions used to collect data responding to the second research question are provided in Table 8.

Table 8 Technology-related Professional Development

Question 1: Describe the types of technology-related professional development training available to business education teachers in your school district?
Question 2: How would you describe the support from your local school administrators (i.e. principals, vocational supervisors) to attend technology-related professional development training?
Question 3: Describe an instance where you have experimented with integrating technology into the classroom as a result of professional development training?
Question 4: What types of technology-related professional development do you perceive would be needed to prepare in-service business education teachers to integrate technology into the classroom?

The categories related to the continuing education theme are discussed below using selected participant responses due to the space limitations required to present all of the participant responses to their perceptions of their technology-related professional development

Access and Availability. The category of access and availability reflects the study participants' perception of technology-related professional development within their local school or school districts. The study participants' generally held a positive perception of the access and availability of technology-related professional development training in their local school district. Lucy's perceptions were as follows:

> We have- we're part of CTAE, and they have sent- they have training sessions and stuff throughout the summer, so- and it's not anything that the school districts will pay for, so we are allowed to go to those different classes, you know, as I stated, I took a macromedia class, but I could've taken a Dreamweaver class and, you know, Windows Vista class and, you know, all kinds of different classes and stuff. So they really make a concentrated effort to keep us abreast of what's going on out there in the real world, I guess you could say. So that, you know, we are very prepared to help our students. And that keeps us abreast of the different software and stuff that is being used in our district, in our schools, so that if, you know, we have teachers that leave, it's not- they're not the only person that can teach that class. So, that's what- the district that I work in, that's what they do.

Brenda praised the career and technology education director due to the availability of technology-related professional development training in her school district:

> There's just a wealth. In our school district, our CTE director, he opens- he just opens just like a buffet. Whatever you want, whatever professional development you want to

take, especially during the summer, it's open season. You can sign up for whatever you want, as long as it's going to help you be effective in the classroom. Give you an example of my summer. Well, school ended March 25th. I had a week to get myself together. Well, no, no, I didn't. March 25th. Monday and Tuesday of the next week, I had workshops, and they were with Georgia Power, and they were talking about integrating technology – two workshops. Right. But before that, I went to the NECC conference, and that's a computing conference – completely information technology. And so I went to the GACTE conference. This week, I had a leadership workshop and a department chair workshop. Next week, I go back because of school; we're doing a 9th grade orientation. So this entire summer, where people think you really have a break, I didn't have a break. But I got- I gained a wealth of knowledge and a wealth of information that I'll be able to take back to my students.

Bill was impressed by the extent of the technology-related professional development availability to him at his local school district:

After new teacher orientation, throughout the year, we went to actually 12 in-service classes; again, my county offers a lot and they want to stay abreast of all kinds of things. Many of the ones we went to, one had to do with web design, because they want us to have our own webpage on the county server; one was integrating technology, preparing tests and so forth, basically integrating what the State of Georgia has and some of the availabilities on their software programs, mostly geared to academic history, science, 'cause that's- I guess they have the most programs already built in.

Marie, who recently retired, perceived her school district as having a tremendous amount of technology-related professional development accessible and available to business education teachers:

> Oh, we have probably a tremendous amount, because of the fact that we have a program that's call RESA, and we not only can have professional development classes from our county, but we can go to the state and look in their book and see if, let's say, if I want to do, you know, a graphic design class, or if I want to do webpage design, then I can look in that book and find, "Oh, they're going to offer this class for Dreamweaver here and they'll offer this there." And then my county would actually pay whatever that fee is, and then I could go and take that particular class, and you get a little stipend for it. So in terms of the classes, they try to make sure that if we're going to- let's say we adopt textbooks every six years. If we know that we are not going to offer computer applications anymore, then they're not going to waste any time with saying, OK, these are the new things that have come out , you know, with that particular component. But if they know that we're adopting a new book – and right now, it's XP – all the books that they have were, you know, 2000. It's like, OK, this doesn't do this when the child is doing this. But yeah, but school the district has been able to keep up with the fact that we will allow our teachers to go and get this training, you know, so it has- in terms of professional development, I think most teachers will feel like if they wanted it, they could get it.

Administrative Support. Administrative support for attending technology-related professional development training was perceived to be generally available by the participants. Administrative support of technology-related professional development was discussed as a key

factor to business education teachers' using technology as an instructional tool. Bill felt the support from his local school administrators was very strong with regard to the ability to attend technology-related professional development training:

> Oh, 100 percent. Almost mandated to make sure you're there. Yeah, these classes were offered and, again, you had to meet- I don't know what the percentage was, but it was almost like eight out of ten, so it was pretty strong. Attendance was taken and then so forth; some were, you know, some you gain PLU credits, some you did not. But you know, there's definitely opportunities in our school, and really in our county, I think there's a strong influence to go and to take and to be there to learn and to use. Yeah.

Clarence was direct when describing his perception of his local school administrator's support to attend technology-related professional development training:

> "Now, our CTAE director, she requires that."

Brenda, who is the department chair at her school, encourages her business education teachers to attend technology-related professional development training:

> "And I definitely support and I will continue to encourage the teachers in my area to attend professional development, because things are ever-changing."

Exploration and Experimentation. Exploration and experimentation is a category within the continuing education theme that focused on the participants' perception of their integration of technology as a result of professional development training. Bessie experimented with functionality of Microsoft PowerPoint software after attending a technology-related professional development conference:

> Well, you know, little ideas about- I went to this conference in the spring, and PowerPoint is what I did, you know, so I took that back and used that. So things like

that. That was a real good conference that we went to- well, not we, but I went to. Just picked up on some things that I just didn't even realize I could do with some of the programs that I work with.

Brenda described how she explored the use of drill and practice software after attending a technology-related professional development conference:

Hmm. I mean, that happens all the time. Well, I go to workshops all the time. Field of Dreams is a career technologies area where we learn new ideas, but one thing is where- the game of Jeopardy, where you can create any game related to any subject and Jeopardy is one of those games. Another teacher introduced us to Deal or No Deal – that's another computer-based game – and it really makes the class engaging and exciting and something real-life that the students do anyway. They know Jeopardy. So what I do is I allow the students to use Jeopardy to create their own game as a test review.

Kyla experimented with using a new type of computer software package after attending a technology-related professional development training class:

I would say that when we went- I went to a training class and saw the synchronized programs and how they're used, and I saw that that was out there, and then I found out some more information – I went back to the school and brought that, you know, in and we were able to convince them to buy it. (LAUGHTER) You know? And I was able to use it, and I- and it was very effective in my classroom. But I think that's probably about the only direct instance I can think of.

Part three of this chapter detailed the findings for the second research questions, which pertained to high school business education teachers' perceptions of technology-related preservice teacher preparation and professional development training. Two themes emerged

from the analysis of the data collected from the interview questions and review of the documentation. Pedagogical foundations, the first theme emerged when analyzing the participants' responses regarding preservice teacher preparation. The majority of the participant responses were generally favorable with regard to their perceptions of general teacher preparation in pedagogy and instructional methods. In contrast, the majority of participant responses were unfavorable with describing their perceptions of the technology-related component of their preservice teacher preparation. Likewise, the second theme of continuing education, illustrated the perceptions of the participants with regard to technology-related professional development. While technology-related professional development was generally perceived as supported and available, a minority of the participants explored or experimented with technology in the classroom after completing the professional development training.

Summary

The first part of this chapter presented a demographic profile of each participant. The profiles included the participants' courses taught, years of classroom experience, and corporate work experience. The second and third parts of the chapter were organized by findings related to each of the two research questions.

Data analysis for the first research question revealed three themes: (a) real life experiences, (b) relevancy of learned technology, and (c) assumed proficiency. Two themes emerged from the data analysis for the second research question: (a) pedagogical foundations, and (b) continuing education. Multiple categories were subsequently identified within each theme as presented in Tables 4 and 5. Chapter five presents conclusions drawn from the findings, implications of this study and recommendations for future research.

CHAPTER 5

Summary

The purpose of this qualitative study was to describe business education teachers' perceptions about their preparedness to integrate technology into the curriculum. For the purposes of this study, technology integration was defined as employing the Internet, computers, CD-ROMs, interactive media, satellites, teleconferencing, and other technological means in instruction to support, enhance, inspire, and create learning. The following research questions guided the study:

1. How do business education teachers describe their perceptions using five specific categories of technologies as instructional tools?
2. How do business education teachers describe their technology-related preservice education preparation and professional development experiences?

This chapter presents the discussion, conclusions, implications for practice, recommendations for further study, and summary.

Discussion

Nearly all participants in this study perceived that their preservice teacher preparation program had provided a good pedagogical foundation. However, participant responses were more varied when they shared their perceptions about their technology-related preservice teacher preparation and technology-related professional development training. The participants were asked to describe their perceptions of their preservice teacher preparation program, as well the types of technology-related professional development available to them.

Participants in this study perceived that their preparedness to integrate technology as a result of preservice teacher preparation or professional development training was very limited. The majority perceived that modeling of integrating into the curriculum was lacking in the preservice teacher preparation program. Additionally, when asked what types of technology-related courses they perceived as appropriate in a preservice teacher preparation program, one participant indicated that someone should ask business education teachers "what they need to do their job." These perceptions were supported by Raines and Willis (2001) who reported that the education industry is the only knowledge business still debating the utility of technology. Raines and Willis found that although most preservice teacher education programs provide some technology integration content courses for preservice teachers, many do not have up-to-date equipment or faculty with technology integration expertise.

As the public desires and supports technology instruction in schools, many K-12 schools are promoting the integration of technology in teaching and learning process. Toward achieving that goal, professional development training targeting mastery of technology integration have been offered to teachers and school staff (Hughes, 2004). However, I found that access to technology in the classroom and availability of technology-related professional development did not translate into integration of the technology into the curriculum as an instructional tool. Instead, when one participant described how she integrated the technology learned from a technology-related professional training experience, the example provided was software simulation of a game show used for drill and practice classroom exercises.

Hughes (2004) reported that the focus on technology skill development in professional development training initiatives lacks an overall vision for what teachers will do with these technologies once they are learned. A more productive goal may be to develop teachers into

technology integrationists, a term used to describe teachers possessing the unique ability to understand, consider, and choose to use technologies only when that technology uniquely enhances the curriculum, instruction, and students' learning.

> Technology integrationist is a position that empowers appropriate technology decision-making in schools. Teachers who are technology integrationists are not necessarily "techies" nor have they necessarily taken formal courses about computers. What distinguishes teachers who are technology integrationists is their ability to interpret new technology concepts through their professional knowledge. This includes the knowledge to both consciously and subconsciously direct their daily teaching activities. Technology integrationist use their general pedagogical knowledge, subject matter knowledge, and pedagogical content knowledge to identify promising, innovative ways technologies may be used to teach their subject area discipline to secondary school students Descriptive portrayals of technology integrationists' accomplishments in the classroom reveal innovative and creative uses of technology that enable students to learn subject matter more deeply and with more curiosity than without the technology.

I found that the participants provided valuable insight into the phenomenon of technology integration. They generally perceived that technology-related training is a necessity for preservice teacher preparation and professional development training. Additionally, when describing the types of technology-related training to be included in a preservice teacher preparation or professional development training, participants felt that technologies should be more relevant and current, meet the instructional needs of the classroom, and meet the needs of the students.

Conclusions

Findings of this study led to three main conclusions related to business education teachers' preparedness to integrate technology into the curriculum. The first conclusion was that business education teachers generally perceived themselves as not prepared to integrate technology into the curriculum, especially, specialized software technology. Brinkerhoff, Brush, Glazewski, Igoe, Ku, and Smith (2002) reported that there is little argument among leaders in the field of educational technology that teacher training institutions are not adequately preparing teacher education students to effectively integrate technology into their teaching. The U.S. Department of Education and the National Education Association have stressed the importance of incorporating technology in preservice teacher preparation. As a result, the study found that teachers continue to integrate technology for low level, supplemental tasks such as drill and practice activities, word processing, educational games, and computer based tutorials. Brinkerhoff et al., indicated that some researchers have even gone as far as to state, "few teachers routinely use computer based technologies for instructional purposes".

All of the participants had a positive perception of their ability to integrate productivity software, defined as word processing, spreadsheets, database management, and integrated software, as a result of their preservice teacher preparation or professional development training. However, a majority of participants did not feel that prepared to integrate graphic applications or interactive technology software as instructional based on their technology-related preservice teacher preparation or professional development. Frustaci, Norris, Winegardner, and Zirkle (2006), reported that graphic applications and interactive technology software were courses that business education teachers should be prepared to integrate into the curriculum as instructional tools.

Findings from this qualitative study of business education teachers' perceptions of their preparedness to integrate technology into the curriculum were similar to the measured computer software use by career and technical education teachers in a quantitative study by Miller (1997). Miller reported that while there is increased attention to the need to prepare new teachers to use computer software effectively, most new teachers have limited knowledge of how technology can be successfully integrated into the curriculum. In Miller's study the total computer software usage by business education teachers was reported as not significantly different than other career and technical education teachers. Miller's findings were surprising given the general perception that business education teachers should integrate technology at a higher rate than that of other teachers. Participants perceived that there is an assumption of proficiency with regard to expectations of their preparedness to integrate technology into the curriculum. Miller's study also reported that when business education teacher's computer software use was measured, the most typical use of computer software was often limited to office productivity software, such as word processing. Again, Miller's findings were similar to findings from this study. For this study, participants were not measured on the usage of computer software packages or a specific technology. The purpose of this study was to describe business education teachers' perceptions of their preparedness to integrate technology into the curriculum as an instructional tool, without quantifying the actual usage of a technology.

The second conclusion from findings of this study was that modeling technology integration as an instructional tool in business education preservice teacher preparation was done by faculty, however, it was not done often enough. When asked to describe an experience from their preservice teacher preparation where a professor modeled integrating technology as an

instructional tool, the use of office productivity software was the most frequent example given by participants.

McIsaac and Vrasidas (2001) found that most preservice teachers teach in the same manner in which they were taught. Additionally, Evans and Gunter (2004) found that preservice teachers typically teach by modeling the instructional techniques used by college faculty. Gunter and Sivo (2003) found that college faculty members must be willing to integrate technology as instructional tools, so that preservice teachers can fully understand the influence that technology has on education. They suggested that teacher education programs should structure the learning environment so that the modeling of integrating technology into the curriculum occurs as a part of the preservice teacher preparation program.

The third conclusion of this study found that access and availability of technology-related professional development does not necessarily lead to integration of technology into the curriculum. The participants indicated their school districts either required or strongly encouraged participation in technology-related professional development. However, only two of ten participants described examples of integrating the technology learned from professional development into the curriculum.

Mouza (2002 – 2003) reported that professional development training is a critical component in the effective integration of technology in the curriculum. The report found that in 1998, only 36% of teachers stated that they had received between one to five hours of technology training. Additionally, one-third of respondents indicated that they had received no technology-related professional development training at all. While professional development training on integrating technology into the curriculum is not always readily available, Mouza found that technology-related professional development training made a positive difference for the teachers

who received the training. Teachers who received technology-related professional development training felt more confident integrating technology, integrated more technology in the curriculum, and were more willing to experiment than teachers who did not receive technology-related professional development training. The results of this study support Mouza's conclusions.

The conclusions of this study were drawn from the transformative nature of the interviews, field notes, and personal data sheets. The qualitative nature of this study allowed me to give voice to unique population, share their experiences through listening, and transform my understanding and embrace the participants' perceptions of the phenomenon of technology integration. The qualitative design of the study allowed to me to listen without the prejudice or bias of creating a survey instrument which would have limited the participants' perceptions of their experiences to a forced scale. The conclusions of this study confirmed the researchers feelings preservice teacher preparation cannot prepare business education teachers to be technology proficient in all forms of technologies prior to entering the classroom. However, the depth, breadth, availability and technology-related professional development was an unexpected outcome of the study.

Implications for Practice

Based on this study, an implication for practice is that preservice teacher preparation programs and professional development training for business education teachers should prepare business education teachers to become technology integrationist based on perceptions of the participants of this study. Business education teachers who teach application technology to students should also be able to use the technology they teach as instructional tools. Okojie, Okojie-Boulder, and Olinzock (2006) stated that the problem of integrating technology into the

teaching and learning process had become a perennial problem. Additionally, this study suggests that technology-related preservice teacher preparation and technology-related professional development training as impact business education teachers' perceptions of their preparedness to integrate technology into the curriculum as an instructional tool (Brinkerhoff et al., 2002; Gunter & Sivo, 2003; McIsaac & Vrasidas, 2001; Mouza, 2002 – 2003; Okojie et al., 2006).

Recommendations for Further Study

Based on the findings and conclusions of this study, the following suggestions for further study are provided:

1. This study focused on business education teachers' perceptions about their experiences using computer software packages as instructional tools. Next, it would be beneficial to determine if and how student achievement is impacted by their teachers' use of computer software as instructional tools in business education courses. Information gained would be useful to further support or refute the need for including content about how to integrate computer software as instructional tools as part of preservice teacher preparation and professional development training programs.
2. As illustrated in Table 1, 70% of the participants had corporate experience before choosing to become a business education teacher. The participants with corporate experience generally indicated that their corporate experience provided the technology preparation for integrating computer applications software in the curriculum rather than their preservice teacher preparation or professional development training. Currently, some preparation programs require corporate experience while other do not. Additional research using a larger population to

determine if business education teachers with corporate experience are more likely to use technology as instructional tools than business education teachers without corporate experience would provide helpful for designing preservice teacher preparation and professional development training programs.

3. Results of this study indicated that business education teachers perceived their preparedness to integrate technology as lacking with regard to specialized technology software. A study of the usage of specific technologies by business education teachers to provide evidence to support or refute this perception, either quantitatively or qualitatively, would provide useful planning information to preservice teacher preparation and professional development training programs.

Summary

The method employed in this study was a qualitative design with participant interviews, document reviews, and member checks as the data collection methods. Ten secondary business education teachers were purposefully selected from schools in a metropolitan area in the southeastern U.S., using a maximum variation sample. Participants were limited to individuals employed as business education teachers who either a clear-renewable or provisional teaching issued by the state's professional standards commission, the issuing body for professional and provisional teacher certificates in the research participants' state of residence.

Data collection involved three steps. First, an in person interview was conducted with each participant. Second, participants completed a personal data sheet which provided information about courses taught, years certified as a teacher, and other professional experience. Third, participants validated the transcripts of their interview to facilitate member checks of the data. All interview conversations were tape-recorded and transcribed verbatim. In addition,

supplementary field notes were collected as part of the participant interviews. Participant selected pseudonyms were selected to maintain confidentiality. The constant comparative data analysis method was used to determine themes and categories from the data.

A demographic profile of each participant and descriptive responses of the interview questions were included with the findings of the study. The personal data sheets and interview data were used to create demographic profiles of each participant. The personal data sheets were also used to validate the demographical responses provided by participants during the interviews. The combination of the interview data, field notes, and personal data sheets, contributed to identifying the themes and categories related of the research questions of this study. Relevant quotes from the interview transcripts were extracted to illustrate coding of the data. These data were then sorted, analyzed, and synthesized to form major themes.

The participants' perceptions about their experiences integrating five categories of technologies as instructional tools yielded three themes: (a) real life experiences, (b) relevancy of learned technology, and (c) assumed proficiency. The themes that emerged from participants' perceptions about their technology-related preservice teacher preparation and professional development training were: (a) pedagogical foundations and (b) continuing education. Each of the themes and supporting categories were constructed based on analysis of the participant data from interviews, field notes, and the personal data sheets.

A review of the literature revealed a lack of substantial research on the perceptions of business education teachers' on integrating technology into the curriculum as instructional tools. Rather than focus on student-based outcomes as a result of technology integration, this study focused on business education teachers' perceptions about their preparedness to integrate technology, specifically five categories of technologies, into the curriculum as instructional tools.

This qualitative study described integrating technology from the viewpoint of business education teachers based on their technology-related preservice teacher preparation and professional development training.

The data came from ten in-depth interviews, field notes, and personal data sheets, that were analyzed using the constant comparative data analysis method. The researcher, a former business education teacher, bracketed his role by piloting the interview questions to two business education professionals, to control for researcher bias.

In conclusion, the outcome of this research indicated that while business education teachers were expected and assumed to be technology proficient, the perceptions of the participants did not always align with those expectations or assumptions. Based on the findings from this study business education teachers may still be the "sage on the stage, rather than the guide on the side" with regard to the integrating technology into the curriculum as instructional tools.

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APPENDIX A

INTERVIEW GUIDE

Interview Guide

Name: _____

Date: _____ Time: _____

Place: _____

Review signed consent form: Yes____ No____

Review Personal Data Sheet: Yes____ No____

Discuss the following with each participant:

- Purpose of the research
- The use of pseudonyms to mask their identity (ask each person to select). The pseudonym will be collected using a Personal Data Sheet. The Personal Data Sheet will ask the participant to provide a pseudonym for their name and school, as well information on their work experience (i.e. years of teaching experience and courses taught). The Personal Data Sheet will be reviewed as a triangulation data for the study.
- Logistics (i.e., length of interview, schedule, next steps)
- Transcript will be sent back to each participant. Abstract of the study and how to gain access to it will be provided at the end of the project. (Request an email address or other delivery method for the sending the transcript to the participant and member checks)
- Monetary compensation (not applicable in this study)
- The audiotaped interviews will be destroyed six months after the successful completion of the research study. The approximate date for destruction of the audiotapes is December 2008.

Remember to:

- Provide definition of "pre-service" teacher (before professional classroom experiences)
- Provide definition of "professional development" Wells (2007) defined professional development as going beyond training with an implication on learning skills, and encompassing formal and informal means of helping teachers to not only learn new skills, but also develop and explore new and advanced understandings of content and resources
- Test the tape recorder and take fieldnotes!
- Turn cell phone to VIBRATE
- Greet participant when recording starts: "Good Morning", "Good Afternoon", "Good Evening"

1. Background: Think about your current position,

    ____ Describe your current work situation in terms of your classroom teaching responsibilities.

    ____ How and why did you become a business education teacher?

    ____ How long have you been certified as a business education teacher?

NOTE: These next questions ask you to reflect on your "pre-service" teacher preparation

2. This question requires you to think about your pre-service teacher education experience.

    ____ What is your perception of the pre-service business education program where you received your business education preparation?

3. Thinking back to your pre-service business education program, describe an experience when your professor modeled a good use of technology integration?

4. What would you perceive as the appropriate types of technology-related courses for preservice business education programs at either an undergraduate or graduate level?

NOTE: These next questions ask you reflect on your technology-related professional development as an "in-service" business education teacher.

5. Describe the types of technology-related professional development training available to business education teachers in your school district?

6. How would you describe the support from your local school administrators (i.e. principals, vocational supervisors) to attend technology-related professional development training?

7. Describe an instance where you have experimented with integrating technology into the classroom as a result of professional development training?

8. What types of technology-related professional development do you perceive would be needed to prepare in-service business education teachers to integrate technology into the classroom?

NOTE: These next 5 questions are about your perceptions of specific technologies.

9. Describe how you perceive your preparedness to integrate productivity software, defined as word processing, spreadsheet, database management, and integrated software as instructional tools as result of your preservice teacher preparation and/or your professional development training?

10. Describe how you perceive your preparedness to integrate graphic applications, defined as presentation and desktop publishing software as instructional tools as a result of your preservice teacher preparation and/or your professional development training?

11. Describe how you perceive your preparedness to integrate interactive technologies, defined as authoring software, multimedia, and CD-ROM as instructional tools as a result of your preservice teacher preparation and/or your professional development training?

12. Describe how you perceive your preparedness to integrate telecommunications resources, defined as the Internet, electronic mail, commercial on-line services, and electronic bulletin boards as instructional tools as a result of your preservice teacher preparation and/or your professional development training?

13. Describe how you perceive your preparedness to integrate computer-assisted instruction, defined as simulations and games, drill and practice, tutorials and discipline-specific programs as instructional tools as a result of your preservice teacher preparation and/or your professional development training?

APPENDIX B

PERSONAL DATA SHEET

PERSONAL INFORMATION

Name (Pseudonym):

Last First

CURRENT POSITION :_____ **Years Taught:**_____

EDUCATION

Name and Location	Graduate	Degree	Major / Subjects of Study
High School			
College or University (Bachelors)			
College or University (Masters)			
College or University (Doctoral)			
Specialized Training, Professional, etc…			

Please list your areas of highest proficiency, special skills or other items that may contribute to your abilities in performing the above mentioned position.

PREVIOUS EXPERIENCE

Please list beginning from most recent

Role/Title	Location (City – Do not provide School Name)	Years Taught

Courses taught	Years of Experience	Technology Used

Role/Title	Location (City – Do not provide School Name)	Years Taught

Courses taught	Years of Experience	Technology Used

NOTE: Please copy and paste the table above to an additional sheet if needed.

APPENDIX C

PARTICIPANT SOLICITATION LETTER

Dear Prospective Participant:

I am a doctoral student in the Occupational Studies program at The University of Georgia, in Athens, Georgia. I have lived in Cincinnati, OH since December 2004. I successfully defended by dissertation prospectus on May 03, 2007. I would like to solicit you as a prospective participant for the data collection for my research.

I am interested in the ***Business Education Teacher's Perception of their Preparedness to Integrate Technology into the Curriculum*** based on their pre-service teacher education and in-service professional development. If you agree to participate in the study, you would be asked to: (1) participate in a 90-minute interview during non-instructional hours, preferably at your primary work location, (2) complete a personal data sheet listing your education, and work experience, and technology-related professional development.

Each participant would be identified by a pseudonym to ensure privacy and confidentially. Additionally, the school district would only be masked as well. No identifying marks, references, or participant information would be included in the study. Participation in this study is entirely voluntary and confidential.

To participate in this study, a participants needs to have:

1. Current certification as Business Education by the Georgia Professional Standards Commission.
2. A current or prior business education teacher in private or public secondary school, whose job responsibilities include(d) instruction to students in business education content areas.
3. Have at least a bachelor's degree in education from an accredited College of Education.

If you are interested in volunteering to participate in the study, please respond with to my email address: ***bbrazeal@uga.edu*** with a contact method (e.g. email address, contact phone number). If you have any questions or concerns about the study, please contact me at (513) 377-1722, or my professor, Dr. Myra N. Womble, at (706) 542-4091.

I plan to visit Atlanta, Georgia on the following dates and would like to schedule interviews during these dates:

Aug 10 thru Aug 12
Aug 17 thru Aug 19
Aug 24 thru Aug 26
Aug 31 thru Sep 2

If you are interested, please reply via email with a contact email address and phone number and I will forward you the Personal Data Sheet and Consent Form for your review. Your participation will be greatly appreciated as I try to complete my degree requirements by EdD in Occupational Studies. Upon agreement to participate in the study, you may be asked to provide referrals email addresses for other prospective participants that meet the qualifications for participation in the study.

Thank you,

Bryant S. Brazeal
bbrazeal@uga.edu
513-377-1722

APPENDIX D

CONSENT LETTER

I, _____, agree to participate in a research study titled "Business Education Teachers' Preparedness to Integrate Technology into the Curriculum" conducted by Bryant S. Brazeal from the Department of Occupational Studies at the University of Georgia (513) 377-1722 under the direction of Dr. Myra Womble, Department of Occupational Studies, University of Georgia (706) 542-4091. I understand that my participation is voluntary. I can refuse to participate or stop taking part without giving any reason, and without penalty. I can ask to have all of the information about me returned to me, removed from the research records, or destroyed.

The purpose of this qualitative study is to describe business education teachers' perceptions about their preparedness to integrate technology into the curriculum. The study will explore business education teachers' perceptions about knowledge and skills gained (preparedness) resulting from their (1) technology-related preservice teacher preparation and, (2) technology-related professional development. The phenomenological approach will be used to guide this interview study of business education teachers selected from one metropolitan public school system in the southeastern United States. The specific categories include productivity software, graphic applications, interactive technologies, telecommunications resources, and computer-assisted applications. The study participants will be business education teachers selected from a metropolitan school system in the southeastern U.S. This is not an intervention study and although some business education teacher perceptions and level technology integration may increase or decrease, those outcomes are not the focus of this study.

Research Questions

This study will address the following research questions:

1. How do business education teachers describe their experiences using five categories of computer software packages as instructional tools?
2. How do business education teachers describe their technology-related preservice education preparation and professional development experiences?

RISKS/BENEFITS

This is not an intervention study and although teacher perceptions, comfort level discussing their ability to use computer software and the level of use of computer software may change, teacher perceptions are the sole focus of the study. Based on the positioning of the interview questions, there are no perceived risks to participation in the study.

A potential benefit to the business education body of knowledge is that the results of this study could prompt changes to post-secondary Business Education teacher education programs.

Additionally, the level and appropriateness of professional development for inservice Business Education may change as well. The level of computer software use by the study participants may increase as a result of this study.

If I volunteer to take part in this study, I will be asked to do the following things:

1. Answer questions about my use of computer software as a teaching tool during a 90 minute audio-taped interview to be conducted at the school location after hours during non-instructional time
2. The researcher of the study may call me to clarify the study, the researcher, confirm the interview date and time, or my information; the clarification contact will last approximately 30 to 60 minutes.
3. The audiotapes of the interview will be kept for approximately six month after the study results are presented

No information about me, or provided by me during the research, will be shared with others without my written permission, except as required by law. I will be assigned a pseudonym and this pseudonym will be used for reporting purposes for the research study. The pseudonym will be collected using a Personal Data Sheet. The Personal Data Sheet will ask the participant to provide a pseudonym for their name and school, as well information on their work experience (i.e. years of teaching experience and courses taught). The Personal Data Sheet will be reviewed as a data for the study. The audio taped interviews will be destroyed six months after the successful completion of the research study. The approximate date for destruction of the audiotapes is December 2008. The use of the pseudonym will provide confidentiality for the research participants.

The investigator will answer any further questions about the research, now or during the course of the project (513) 377-1722.

I understand that I am agreeing by my signature on this form to take part in this research project and understand that I will receive a signed copy of this consent form for my records.

_____	_____	
Name of Researcher	Signature	Date

Telephone: _____

Email: _____

_____	_____	_____
Name of Participant	Signature	Date

Please sign both copies, keep one and return one to the researcher.
Additional questions or problems regarding your rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 612 Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411; Telephone (706) 542-3199; E-Mail Address IRB@uga.edu

APPENDIX E

MEMBER CHECK EMAIL

Dear Participant:

Thank you for your participation in my study, .***Business Education Teacher's Perception of their Preparedness to Integrate Technology into the Curriculum***. As discussed in the interview, I am requesting that each participant validate the contents of the transcribed interview to ensure the accuracy of the transcripts.

Please review the transcripts and notify me of any erroneous text or statements that should not be attributed to your interview. I will validate the errors based on the audiotaped interview.

Please respond with to my email address: ***bbrazeal@uga.edu*** with "ACCURATE" in the subject line if the interview transcripts are correct or "ERROR" if the transcripts should be validated against the audiotaped interview. If you have any questions or concerns about the study, please contact me at (513) 377-1722, or my professor, Dr. Myra N. Womble, at (706) 542-4091.

Sincerely,

Bryant S. Brazeal

513-377-1722