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Career and Technical Education Research (CTER) is published three times a year and is an official publication of Association for Career and Technical Education Research (ACTER). ACTER was organized in 1966 and strives to: (a) stimulate research and development activities related to career and technical education, (b) stimulate the development of training programs designed to prepare persons for responsibilities in career and technical education research, (a) foster a cooperative effort in research, (c) foster a cooperative effort in research and development activities with the total program of career and technical education and other disciplines, and (d) facilitate the dissemination of research findings and diffusion of knowledge.

Editor's Note

Steven R. Aragon

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As I shared in my previous Editor's Note, we are getting caught up on past issues. Shortly after receiving this issue, you will be receiving the final issue of Volume 31. Based on the number of quality manuscripts being received and the timely feedback from the reviewers, my guess is Volume 32(1) will follow shortly as well.

In this issue, we have included the 2005 Presidential Address delivered by Diane Jackman during our conference in Kansas City. I encourage you to take a look at it as Jackman describes how the members of the newly named (at the time) ACTER came together to revitalize the organization as well as to plan and execute a successful pre-conference at ACTE. It shows what is possible when people come together with a shared vision.

The first empirical study is by Julie Chadd and Karen Drage. In this study, Chadd and Drage examine high school principals' and CTE teachers' perceptions of whether the No Child Left Behind Act of 2001 has positively influenced CTE programs. Both principals and teachers in the study disagreed that NCLB has had a positive impact on the image of CTE at their school. Both groups did believe that CTE courses can help schools meet the goals of all students. However, the two groups differed when asked if NCLB had a positive impact on CTE enrollment. Principals felt it had while the CTE teachers believed it had detracted from enrollment.

In the second study, Zirkle, Norris, Winegardner, and Frustaci examine perceptions of business education teacher educators with respect to the barriers of offering courses and programs via distance education. They examine the barriers unique to students, faculty, and the educational institutions. Utilizing a survey design, the authors are able to discuss the specific barriers found within each of these three contexts and provide recommendations for overcoming them. The three biggest barriers found include lack of support to help with course development (institutional), time commitment (faculty), and concern whether career/technical content can be learned at a distance (student).

As I stated, the speed at which we have been able to get caught up on past issues of the journal has had a lot to do with the timely evaluations from our reviewers. This process has literally taken just the past few months to complete. As my staff and I are working on transitioning the journal to the new editor, I would like to take this opportunity to extend an invitation to individuals who may have an

Aragon

interest in serving as reviewers. Our reviewer pool has been shrinking some over the past year. While we are in the process of slowly building this pool back up, we are still in need of individuals who are willing to help out with this process. If you would like to be part of the *CTER* reviewer pool, I would ask that you send me a copy of your vita, the number of articles you are willing to review during the year, methodological preferences (quantitative, qualitative, mixed-method) and any areas of specialization you may have related to CTE. Typically, we are seeking individuals who have published 4-6 articles in journals comparable to *CTER* before considering them as reviewers. Therefore, if you meet this criterion and have an interest in serving as a reviewer, please send me your vita.

2005 Presidential Address: Our Future is What We Collectively Determine

Dianne Jackman, PhD.
Eastern Illinois University
ACTER President, 2005

The landscape of education has changed dramatically over the past few years. Our constituencies are calling for more and more accountability and when they are not satisfied, they enact legislation that includes new mandates with little or no new funding. NCLB (No Child Left Behind Act) and ESEA (Elementary and Secondary Education Act) are pieces of federal legislation that affected public schools in ways never imagined. With the renewal of HEA (Higher Education Act), IDEA (Individuals with Disabilities Education Act), and the Carl D. Perkins Act, colleges and universities are experiencing new expectations from their many constituencies.

Accrediting organizations changed their standards over the past 10 years. Instead of focusing on the 'inputs' to the educational system, the focus has evolved to one on student learning outcomes, both the university student and the P-12 students they teach. This has led university officials and teacher educators to look for multiple ways to provide evidence of student learning. No longer are grades in courses or cumulative grade point averages sufficient evidence.

The accountability movement we are experiencing is based on the assumption that education needed 'fixing.' When asked to provide the data or details, most constituents indicated that their concerns were based on anecdotal evidence, chats with their neighbors or what they heard on the radio or television. Unfortunately, some educator's initial responses were to provide anecdotal evidence in return. This led to the call for educators to provide research based evidence to support their point of view. Initial definitions of research based evidence were heavily slanted to quantitative research, as if numbers alone were the ultimate solution. When asked for examples of studies using research based evidence, the studies cited were not conducted by educators. Rather, they were conducted by researchers, trained in other disciplines, with a peripheral interest in education. In recent years, the definition of research based evidence has expanded to include mixed methods research studies and some qualitative research studies, but the focus still remains on quantitative research studies.

In all of the discussions about education, one voice that was lacking was that of career and technical educators and researchers. We have always focused on the improvement of student learning and documenting that improvement. However, we

did that as part of our academic disciplines, not as career and technical teacher educators and researchers.

In 2004, the name of the American Vocational Education Research Association was changed to the Association for Career and Technical Education Research. For many, this change was long overdue, for others it was a concern. Change is unsettling but as professionals we knew it was time and the organizational name change was only a beginning.

Some members of our organization were questioning this organization's very existence, some suggesting that we cease to exist. Others saw our organization as having solid purposes and believed that the education discipline could learn a lot about pedagogy and research from career and technical education.

The Association for Career and Technical Education Research has four purposes that are critical to our future and some may say more critical today than ever before. The purposes are:

1. to stimulate research and development activities related to career and technical education;
2. to stimulate the development of training programs designed to prepare persons for responsibilities in research in career and technical education;
3. to foster a cooperative effort in research and development activities within the total program of career and technical education, with other areas of education and with other disciplines; and
4. to facilitate the dissemination of research findings and the diffusion of knowledge.

As these purposes were reviewed, it was clear that our organization had a purpose but needed a better way to disseminate the research that was being conducted by all career and technical educators. In collaboration with the Association for Career and Technical Education (ACTE), the decision was made to create a pre-conference focused on career and technical education research. It was determined that it was critical that the research being done in career and technical education needed to be shared with our peers – in a time frame when we can all be present. It was very important to us to have more than a few paper sessions during the ACTE meeting, it was important to spend an entire day focused on the presentation of research. It was important for all of us to attend our discipline meetings as well as the research sessions. It was time to showcase career and technical education research to ACTE and to our public constituencies.

In thinking of our organization's acronym - ACTER - several attributes of the organization and our members came to mind.

A – stands for action and attitude. Last year we took action to reinvigorate this organization. We did this by establishing a research pre-conference at ACTE where

an entire day was devoted to showcasing the latest in career and technical education research. A new listserv was established and the organization's website was updated. Members were asked to become involved in a variety of ways and everyone that was asked responded positively. The organization's membership maintained a positive attitude about the future of education and the organization. What career and technical education research contributes to the body of knowledge in the discipline of education is critical in today's world. What we do matters and we need to continue to share our findings with others. Other educational professionals are learning from us and together we are creating a better educational system for the youth of our country.

C – stands for collaboration. The 2005 executive board worked collaboratively as a team to establish the research pre-conference and to showcase career and technical education research. Organization members and officers worked together to nominate and select our award winners. The most obvious collaboration was between ACTER and ACTE to collaborate in the establishment of the pre-conference and the details involved in showcasing this effort to the public.

T – is for trust and tenacity. Trust is essential when working and collaborating with others and each member of the executive board trusted that each officer would carry through with his or her responsibility. Tenacity is critical to the success of any effort – it is the ability to carry through until everything is settled and completed. This was most evident to our members when the conference was moved from New Orleans to Kansas City.

E – represents enthusiasm. ACTER members were enthusiastic about the research pre-conference we were going to establish and about the future of our organization. All ACTER members supported our new research endeavor with research submissions, a willingness to review proposals, and willingness to evaluate the actual presentations. At no time was the organization lacking in volunteers. The support provided by ACTER members led to a successful research pre-conference with ideas on how it could be expanded and improved. An added benefit of our first successful research pre-conference is that ACTER is now looked to by ACTE as the resource for the most up-to-date research being conducted in career and technical education. This happened only because of the enthusiasm of ACTER members.

R – represents research. The research papers presented at the pre-conference and in this journal are clear evidence that quality research that provides research based evidence is being conducted in Career and Technical Education and that our discipline has something to share with everyone. Excellent research projects are being conducted by career and technical educational professionals and are being 'discovered' by other educators.

In 2005, the Association for Career and Technical Education Research faced many challenges and changes and the organization became stronger. ACTER members answered the call to become officers and are excited about their role in the organization. For the first time ever, ACTER planned and executed a successful

Dr. Dianne Jackman

research pre-conference at ACTE. Research paper presentation submissions tripled and the acceptance rate for the conference was slightly over 67%.

ACTER had a dream to establish a research pre-conference and members worked hard to make that dream a reality. Belva Davis once said, “Don’t be afraid of the space between your dreams and reality. If you can dream it, you can make it so.” Collectively we set our sights on what we wanted to accomplish and developed plans to reach our goals. We dreamed bold dreams and as Johnnetta Cole said, “It is those with the boldest dreams who awaken the best in all of us.” Ms. Cole asserts “that you can’t know where you’re going if you don’t know where you’ve been. Let history and past experience instruct rather than determine your destination.” We let the AVERA history and past experiences guide our dreams for the future of ACTER. The time and effort expended as we determined where ACTER was headed resulted in a reinvigorated organization, excited professionals, and a new respect for the research being conducted by all career and technical education professionals.

No Child Left Behind: Implications for Career and Technical Education

Julie Chadd & Karen Drage
Eastern Illinois University

Abstract

High school principals and career and technical education (CTE) teachers throughout Illinois were subjects of this study which described principals' and CTE teachers' perceptions of the impact the No Child Left Behind Act of 2001 has had on high school CTE programs. Findings indicated principals and teachers collectively disagreed with "No Child Left Behind has had a positive impact on the image of CTE at your school." Both groups also agreed CTE courses can help schools meet the goals of "all students will reach high standards, at a minimum of attaining proficiency or better in reading and mathematics" and "all students will graduate from high school." However, a statistically significant difference between the groups was found with "No Child Left Behind has had a positive impact on CTE enrollment at your school." Findings indicated while the principals agree, the teachers conversely disagreed with the statement.

Background of the Study

In an effort to help children receive a quality education and learn the basic skills needed to be successful, President George W. Bush signed into law the No Child Left Behind (NCLB) Act of 2001. This legislation requires states to set clear standards for what every child should learn and holds schools accountable for student progress by requiring annual testing of students' abilities in the areas of language arts, reading, and math. The legislation's four goals are: increased accountability for results from states, school districts, and schools; more flexibility for states and local educational agencies in how federal education dollars are used; proven teaching methods; and more choices for parents and students attending low-performing schools (U.S. Dept. of Education, 2004). The focus of this legislation is undeniably on core academic subjects, which the legislation identifies as English, reading or language arts, mathematics, science, foreign languages, civics and government, economics, arts, history, and geography (U.S. Dept of Education, 2004).

Need for the Study

According to Daggett (n.d.), as states, school districts, and schools come to grips with the NCLB requirement of all students achieving proficiency in the outlined academic requirements, career and technical education (CTE) programs will be at risk. CTE will continue to lose student enrollment unless CTE leaders can clearly show these programs: a) contribute to academic success of students as measured by state academic tests and b) serve as a motivation for students to stay in school and help students perform better in academic courses. In addition, Secretary of Education Margaret Spellings stated President Bush has proposed converting Perkins and other support programs into block grants for states to choose their own educational fixes. As long as states get results, says Spellings, “we’re not going to prescribe particular programs or strategies like vocational education” (Thornburgh, 2006, p. 38).

There is a unified concern among CTE constituents that based on the fact that no area of CTE (agriculture; business, marketing, and computer; family and consumer sciences; health occupations; or technology – trade and industry education) is mentioned in the legislation, schools may utilize funding normally set aside for CTE programs to improve students’ performance in areas directly mentioned in the legislation in order to meet accountability requirements. One strategy schools are using to help meet the goals in improving students’ abilities in reading/language arts, English, and mathematics is to devote more instructional time to these subjects (Center on Education Policy, 2005). For example, the Illinois State Board of Education’s Web site (n.d.) states that school districts will need to change the curriculum to ensure courses are available for students to meet new graduation requirements. For students entering high school as ninth graders in the 2007-2008 school year, requirements include one additional year of mathematics, two years of writing-intensive courses, and one additional year of science. As a result of these additional requirements, CTE courses may be squeezed out of the curriculum.

Bartik and Hollenbeck (2006), senior economists with the W.E. Upjohn Institute for Employment Research, presented testimony to the Michigan Senate Education Committee addressing the issue of increased graduation requirements in Michigan as a result of the NCLB legislation. They testified there are potential downside risks attributed to increasing high school graduation requirements. The four unintended consequences were: a) increased likelihood of student drop-out rates; b) “watering down” of the curriculum for all; c) some excellent classes, such as in the area of career and technical education, may get crowded out of the curriculum; and d) graduation requirements may stifle curricular innovation. Bartik and Hollenbeck contend the one-size-fits-all requirement does not meet the diverse needs of our economy for many types of high-skilled workers and does not meet the diverse interests of students.

CTE programs are a vital and necessary component of the high school curriculum. Evaluations of CTE programs in schools and districts show CTE programs contribute to increased school attendance, reduced high school dropout rates, higher grades, and increased entry into postsecondary education (Brand, 2003). Yet there is no research revealing if high school principals and CTE teachers believe CTE courses can contribute to the NCLB Act's objectives. Districts are making decisions regarding where to spend money based on the NCLB requirements for students to succeed in the areas of language arts, reading, and math since students take standardized tests in these areas that result in school ratings. Career and technical education programs and teachers may be impacted as a result; however, the level of impact is to be determined. The results of this research will offer some insight into the perceptions of high school principals and CTE teachers related to the affects of NCLB on CTE programs and CTE programs' ability to help achieve schools' and state goals regarding NCLB.

Objectives

The objectives of the study were to describe the perceptions of secondary principals and high school CTE teachers on how the NCLB Act has impacted CTE programs. Specific questions were: a) What are the perceptions of high school principals related to the benefits of CTE in helping high schools achieve the goals of NCLB? b) What are the perceptions of high school CTE teachers related to the benefits of CTE in helping high schools achieve the goals of NCLB? and c) Was there a difference in the perceptions of high school principals and CTE teachers related to the benefits of CTE in helping high schools achieve the goals of NCLB?

Review of Literature

The NCLB Act requires each state to meet specific goals to ensure every child is meeting established standards. The goals established by the State of Illinois to meet NCLB guidelines include: a) all students will reach high standards, at a minimum attaining proficiency or better in reading and mathematics by 2013-2014; and b) all students will graduate from high school. The literature review focuses on the Act and the ability of CTE to contribute to states meeting the goals of the legislation. Research focused on principals' perceptions of CTE's ability to contribute to meeting the legislation's goals is also presented.

No Child Left Behind Legislation

President George W. Bush signed the No Child Left Behind (NCLB) Act of 2001 into law on January 8, 2002. The NCLB Act amended the Elementary and Secondary Education Act of 1956 and made significant changes in the federal programs. It has been referred to as “the most noteworthy of recent congressional attempts to improve student achievement and otherwise reform elementary and secondary educational programs in the United States” (Simpson, LaCava, & Graner, 2004, p. 67). The ultimate goal of the legislation is to ensure all children have an opportunity to obtain a high-quality education and reach proficiency on state academic achievement standards, which is demonstrated through state academic assessments. Students’ performance on these assessments results in strong rewards or punishments for schools (Simpson, et al., 2004).

The legislation is based on the principles of stronger accountability for results in students’ achievements in the areas of math, language arts, and reading; increased flexibility and local control in how federal funds are spent; expanded options for parents of children who attend low-performing schools; and an emphasis on teaching methods scientifically proven to increase student achievement (U.S. Dept. of Education, 2004).

The accountability goal requires every student to meet state-identified standards by the conclusion of the 2013-2014 school year. Each state established benchmarks to measure school and school district progress in meeting this goal and established adequate yearly progress (AYP) standards that every student and school is expected to meet. These standards provide an objective way for those in and outside schools to identify the areas of strength and weakness within each school and school district. When results of standardized tests are received, schools’ and school districts’ performance are compared to the states’ AYP standards to determine if goals have been met. If the schools and school districts have achieved AYP goals, they may receive public recognition and are eligible to receive rewards. However, schools that do not make adequate progress must provide supplemental services, such as free tutoring, and take corrective actions (U.S. Dept. of Education, 2004). If schools and school districts failed to meet AYP goals for two continuous years, they are labeled “in need of improvement” and may be given assistance in improving their performance and subjected to corrective and disciplinary measures (Simpson, et al., 2004).

With increased accountability comes more control in how federal funds are spent. School districts can transfer up to 50% of federal formula grant funds they receive under the Improving Teacher Quality State Grants, Educational Technology, Innovative Programs, and Safe and Drug-Free Schools programs to any one of these programs or to the Title I program. Educators, parents, and community leaders

determine how to use funds to find solutions to local needs (Simpson, et al., 2004). The legislation makes it possible for schools to address particular areas of weakness with more federal education dollars; districts may use funds for specific needs, such as hiring new teachers, increasing teacher pay, and improving teacher professional development (U.S. Dept. of Education, 2004). Decisions regarding which programs to place more dollars in are now made at the local level rather than the federal.

Accountability also requires progress in meeting AYP goals be shared with the public through annual state and school report cards. If any school fails to meet state standards for at least two consecutive years, parents may transfer children to a better-performing public school within the district (Simpson, et al., 2004). Furthermore, students from low-income families in schools that fail to meet state standards for at least three years are eligible to receive supplemental educational services, including tutoring, after-school services, and summer school (U.S. Dept. of Education, 2004).

The final focus of NCLB is on the identification and implementation of educational practices supported by scientific research. Educational practices must be determined effective through scientifically-based research. These practices must meet rigorous standards and yield positive results (Simpson, et al., 2004).

CTE's Ability to Contribute to Meeting Academic Goals

Schools are expecting all teachers to help students strengthen their basic skills in order to increase test scores required for NCLB's accountability assessment. Teaching methods traditionally used in CTE courses—practical applications, purposeful and contextualized lessons, and an interdisciplinary focus—are effective for strengthening basic skills (Glenn, 2005).

Current theory and research on teaching and learning is supportive of practices identified with CTE, especially those related to the contextualization of learning (Lynch, 2000). Developments in research on learning and pedagogy in the early 1980s emphasized the effectiveness of "learning in context" (Hughes, Bailey, & Karp, 2002). According to Hughes, et al. (2002), cognitive psychologists argued students learn more effectively if they are taught skills in the context in which they will use those skills.

Contextual teaching and learning is a concept that links content students are learning with the context in which it will be used (Berns & Erickson, 1998). According to Owens and Smith (2000), contextual teaching and learning is both a philosophy of education and a continuum of pedagogical strategies. As a philosophy of education, the teacher is responsible for helping students find meaning in education by connecting classroom learning with applications to their everyday lives. The teacher's role is to help

students understand the importance of what they are learning. Contextual teaching and learning enables students to reinforce, expand, and apply academic knowledge and skills in a variety of settings to solve simulated and real problems (Owens & Smith, 2000).

Most students benefit from learning material in the context in which it will be used; they need context to understand, learn, and remember (Lynch, 2000). Teachers are discovering most students' interest and achievement in math, science, and language improve dramatically when connections are made between new information and personal experiences or existing knowledge (CORD, 2001). Students find meaning in the learning process as they draw upon previous experiences and build upon existing knowledge (Berns & Erickson, 2001). Berns and Erickson (2001) further noted since most life situations are not limited to one discipline, the contextual teaching and learning process must extend across disciplines for students to understand how knowledge and skills apply to real situations. These experiences result in a deeper understanding of material which enables students to retain information longer and apply it to future situations.

Lynch, of the University of Georgia, conducted a five-year study which revealed significant benefits to using contextual teaching (as cited in Predmore, 2005). The most significant benefit was students learned more when teachers incorporated contextual strategies. Student participants performed successfully on authentic and traditional forms of assessment. Participants (94%) also felt they achieved more in contextually taught courses. In addition, results revealed students were more highly motivated.

In another study, contextual teaching was used in 20 schools in 13 states in the area of algebra. The approach was used to teach algebra concepts to 326 students who were placed in remedial math because they struggled with math taught in the traditional manner. Their scores were compared to those of 843 traditional algebra students. The results showed no significant difference between the mean test scores of the two groups. The fact that there was no difference between the mean scores may not sound like a positive result until the fact students who were taught contextually had significantly lower entry-level skills is considered (Parnell, 2001).

The Contextual Learning Institute and Consortium Project experimented with contextual teaching methodologies in a variety of subject matter settings. The institute provided training in contextual teaching to 32 teachers of 350 students enrolled in 15 different subject areas. The American College Testing Service (ACT) provided schools with testing instruments to analyze against national norms. Based on the results, students who experienced contextual teaching did as well as, or better than, national norms, with the exception of one school. Findings revealed teachers felt students tried

harder and were more interested in their studies; students behaved better; were absent and tardy less; and seemed to accept more responsibility for their learning. Teacher observations and evaluations also revealed students made greater learning progress during the school year. Student participant comments included: "I used to hate school and I don't dread it now" and "this makes school fun and it is easier to learn" (Parnell, 2001, p. 73).

Even though CTE courses utilize contextual teaching and learning methods, CTE courses are typically electives and since they are not mentioned in the legislation, it may be difficult for lawmakers, school administrators, and teachers to understand how CTE courses can contribute to achieving NCLB goals. However, research has shown CTE improves student learning and student achievement because of the contextual approach that is used in teaching these courses (Glenn, 2005).

In addition to the effective teaching methods used in CTE courses, CTE legislation has stressed the importance of incorporating core academic skills. Recent federal CTE legislation focused on using career-oriented programs to supplement and support academic skills. As a result of the Carl D. Perkins Vocational and Technical Education Act of 1998, many states created specific standards for CTE programs that closely aligned with state academic standards (ACTE, 2006).

In some states, academic content has been made explicit in CTE courses and CTE teachers understand and teach to each state's academic standards. CTE students in these states have outperformed the general high school population on the state's standardized high school exit exams (ACTE, 2006).

Research shows as contextually and project-based disciplines, CTE improves student learning and increases student achievement (Glenn, 2005). According to Glenn, CTE positively impacts school reform goals by enhancing the quality of education, lowering the dropout rate, and preparing students to succeed in college and the workplace.

CTE's Ability to Contribute to Meeting Graduation Requirements

In addition to inclusion of needed academic knowledge and skills, CTE courses can also be a part of the solution to students dropping out of high school (Reese, 2005). According to Thornburgh (2006), approximately 30% of public high school students are dropping out. Reese (2005) noted the National Dropout Prevention Center recognized numerous studies that have demonstrated the positive effect of CTE on reducing high school dropout rates. Many dropouts never see the connection between school and later life, and CTE gives students real-world skills (Thornburgh, 2006) to help them see this connection.

The Silent Epidemic (Bridgeland, DiIulio, & Morison, 2006) study revealed few dropouts report being overwhelmed academically. Most (88%) participants had passing grades in high school. The commonly cited reason for leaving school was boredom with course work. “American public education may be a victim of its own ambition. Rallying around the notion that every child should be prepared for higher education, schools follow a general-education model that marches students through an increasingly uniform curriculum, with admission to college as the goal” (Thornburgh, 2006, p. 35). However, not every child wants to attend college and college prep curriculum is meaningless to them, which results in boredom and a lack of connection between school and their lives. Contextual teaching and learning approaches hold promise in helping to alleviate the problem of students’ disengagement from school.

In *The Silent Epidemic* (Bridgeland, et al., 2006), high school dropouts shared that one way schools can help prevent students from dropping out is improving teaching and curricula to make school more relevant and engaging and enhancing the connection between school and work. Participants (81%) in this study shared that there should be more opportunities for real-world learning and some called for more experiential learning. Participants stressed that the class work in high school needs to make some connection to students’ interests and what they find relevant.

Kulik (1998) reviewed studies from the late 1960s to the early 1990s which addressed whether CTE can help prevent students from dropping out of high school. After considering descriptive studies and studies with experimental designs, he concluded participation in CTE programs increased the likelihood non-college-bound students would complete high school. He estimated participation in CTE courses decreased the dropout rate by about 6%.

Stone and Alfeld’s (2004) research revealed high school CTE courses reduce the likelihood of youth leaving school prematurely. The reasons cited as to why these programs work at preventing drop outs are: helping make school work real and engaging youth in school. Students are able to apply coursework in practical, relevant contexts in CTE courses.

Principals’ Perceptions

High school principals’ perceptions regarding the ability of CTE programs to contribute to schools achieving the goals of the NCLB Act are key to the future of secondary CTE programs. As schools face the dilemma of how to increase test scores and graduation rates, funding will be put into programs and courses that contribute to successfully achieving these objectives. High school CTE teachers may firmly believe the classes they teach provide students with the academic knowledge to perform well on

the state exams and the motivation to continue attending high school until graduation, but the principals must believe these things to be true as well. With more funding decisions being made at the local level, high school principals will decide which programs and courses are supported and which have to be eliminated in order to support the ones that are producing results. However, there is not much research regarding perceptions of principals and teachers.

One study focused on the extent to which Washington State High School principals perceived CTE curriculum content to be aligned with Essential Academic Learning Requirements (EALR) in reading, writing, math, and science (Bertelson & Johnson, 2006). The majority of principals surveyed agreed (highly agreed, 14%; agreed, 40%; somewhat agreed, 30%) CTE classes prepare students for the Washington State Assessment of Student Learning achievement test and CTE classes can reinforce EALR competencies in related academic classes (highly agreed, 51%; agreed, 36%; somewhat agreed, 10%). A majority of principals also perceived CTE classes have somewhat aligned to highly aligned writing, reading, math, and science EALRs; the level of agreement varied by core area and CTE content.

Research Method

Conceptual Framework

Based on discussions at state conferences and literature addressing CTE's ability to address the goals outlined in NCLB, there was concern regarding whether high school administrators and teachers were aware of the impact CTE courses and programs could have on students' and ultimately, schools' abilities to achieve NCLB goals. The NCLB Act is in the forefront of all decisions being made at the secondary level in regard to which programs to support. The future of secondary CTE programs rests on those who make decisions regarding which programs to cut. In order for CTE to survive, these individuals must recognize the contribution CTE programs and classes make in achieving NCLB objectives. Teachers in CTE programs also must recognize the ability of their courses to help their students and schools achieve the objectives of NCLB. Teachers may believe their programs contribute and may voice these beliefs, but if their principal does not, their programs may be in jeopardy. The hope of this study is to determine CTE teachers and high school principals alike recognize the contribution CTE programs can make to schools across the state in achieving the goals of NCLB.

Subjects

Using the self-report survey method of descriptive research, participants were Illinois high school principals and CTE teachers. Principals and teachers were identified from the Illinois State Board of Education's Web site. From the list of 1,530 principals and 4,474 teachers, 499 principals (33%) and 499 CTE teachers (11%) were randomly selected based on the principle that it is not necessary to "sample more than 10% of the population to obtain adequate confidence" (Alreck & Settle, 1995, p. 62). The decision to include a higher percentage of principals in the study was based on the belief that the return rate for principals would be lower based on Bertelson and Johnson's (2006) return rate.

Instrumentation and Data Gathering

Two survey instruments were created to determine perceptions of high school principals and CTE teachers. The surveys were developed based on a review of literature and the primary goals of the State of Illinois in regard to meeting the objectives of the NCLB legislation. The instrument developed for principals included 23 items and the instrument for teachers had 30 items. Both instruments utilized open-ended, yes/no, checklists, and four-point Likert scale (strongly agree, agree, disagree, strongly disagree) responses. On the survey developed for principals, there were 6 open-ended items, 2 yes/no, and 4 checklists. The teacher survey contained 6 open-ended items, 5 yes/no, and 8 checklists. The same 11 Likert scale items were on both surveys. The instruments were tested for validity by selected prominent CTE educators, and feedback was used to add appropriate activities, clarify items, and improve organization.

The teacher survey contained three sections: Your Views on the No Child Left Behind Legislation and Career and Technical Education, Your School Information, and Your Information. Using a four-point Likert scale, the "Your Views on the No Child Left Behind Legislation and Career and Technical Education" section assessed teachers' perceptions of the impact NCLB has had on their CTE programs. The Your School Information and The Your Information sections collected demographic information.

The survey completed by high school principals was comprised of two sections: Your Views on the No Child Left Behind Legislation and Career and Technical Education and Your School Information. Items in Your Views on the No Child Left Behind Legislation and Career and Technical Education were identical to those on the teacher survey. The Your School Information section contained demographic items.

Randomly selected high school principals and CTE teachers were mailed a cover letter and survey instrument. The cover letter identified a Web site that contained the survey if participants preferred to complete the instrument electronically. One

follow-up mailing consisted of a postcard with the Web site address being mailed to all non-respondents. At the end of the follow-up period, 133 (26.65%) principal and 128 (25.65%) teacher surveys were returned. Of the surveys returned, 123 (24.64%) principal and 114 (22.85%) teacher surveys were used in the data analysis due to missing responses in the 11 items addressing perceptions.

Data Analysis

Excel spreadsheets were used to compile collected data. Descriptive statistics and a chi-square test were utilized. Percentages were used to report the level of agreement for the first questions, What are the perceptions of high school principals related to the benefits of CTE in helping high schools achieve the goals of NCLB? and What are the perceptions of high school principals related to the benefits of CTE in helping high schools achieve the goals of NCLB? In order to determine if there was a difference in the perceptions of high school principals and CTE teachers of the impact of NCLB on CTE, the third question, a chi-square test was performed. The chi-square test is used to evaluate the probability that some factor other than chance accounts for the relationship. Tables were designed to report findings. Individual responses to open-ended items were grouped according to the main theme of responses, and items that represented overall points in each group were selected for inclusion in the report.

For items related to teacher and principal perceptions, the school districts were not matched up as part of the analysis. Many respondents did not identify their school or school district and due to the response rate in the 20% range, there would have been few teachers and principals responding from the same school.

Findings

Question 1: Perceptions of High School Principals

High school principals responded to four-point Likert scale items to determine perceptions regarding NCLB's impact on CTE. Participants were asked to indicate their level of agreement with statements (Strongly Agree, Agree, Disagree, Strongly Disagree). There were 123 principals who responded to all 11 items; these surveys were used in the analysis. The principals were in general agreement with most of the statements (Table 2).

Respondents agreed CTE courses help prepare students to take standardized tests that assess English language arts (91, or 73.98%) and math (106, or 86.18%). As far as the two State goals CTE can impact (academic standards and graduation), respondents also believe CTE can play a role in helping to achieve them. Responses to "CTE courses can help your school meet the goal of 'all students will reach high

standards, at a minimum of attaining proficiency or better in reading and mathematics” were in agreement (107, or 86.99%). The same was true for “CTE courses can help your school meet the goal of ‘all students will graduate from high school’” with 118 (95.93%) either agreeing or strongly agreeing to this statement. It should also be noted that no principals strongly disagreed with this statement. An overwhelming majority of principals who responded also believe English Language Arts Illinois Learning Standards (97, or 78.86%) and Mathematics Illinois Learning Standards (109, or 88.62%) can easily be incorporated into many CTE courses, as well as developmental reading activities (105, or 85.37%).

Table 1
Principals’ Perceptions

Item	Strongly Agree	Agree	Disagree	Strongly Disagree
	<i>n</i> %	<i>n</i> %	<i>n</i> %	<i>n</i> %
CTE courses offered at your school help to prepare students to take standardized tests that assess English language arts.	15 12.20	76 61.79	25 20.33	7 5.69
CTE courses offered at your school help to prepare students to take standardized tests that assess math.	23 18.70	83 67.48	11 8.94	6 4.88
CTE courses can help your school meet the goal of “all students will reach high standards, at a minimum of attaining proficiency or better in reading and mathematics.”	24 19.51	83 67.48	14 11.38	2 1.63
CTE courses can help your school meet the goal of “all students will graduate from high school.”	64 52.03	54 43.90	5 4.07	0 0.00

No Child Left Behind's Impact on CTE

No Child Left Behind has had a positive impact on CTE enrollment at your school.	15 12.20	62 50.41	36 29.27	10 8.13
No Child Left Behind has had a positive impact on the image of CTE at your school.	1 0.81	9 7.32	80 65.04	33 26.83
No Child Left Behind has had a positive impact on how CTE courses are taught at your school.	3 2.44	20 16.26	72 58.54	28 22.76
English Language Arts Illinois Learning Standards can easily be incorporated into many CTE courses offered at your school.	23 18.70	74 60.16	25 20.33	1 0.81
Mathematics Illinois Learning Standards can easily be incorporated into many CTE courses offered at your school.	26 21.14	83 67.48	13 10.57	1 0.81
Developmental reading activities can easily be incorporated into many CTE courses offered at your school.	25 20.33	80 65.04	16 13.01	2 1.63

A couple statements did elicit a negative response from high school principals. The first of these statements was “No Child Left Behind has had a positive impact on the image of CTE at your school.” Over 90% (113, or 91.87%) of the principals either disagreed or strongly disagreed with this statement. The same was true for “No Child Left Behind has had a positive impact on how CTE courses are taught at your school.” There were 100 (81.30%) principals who either disagreed or strongly disagreed.

Principals were also given an opportunity to respond to an open-ended question asking them to include additional comments regarding the impact of NCLB on CTE. In order to organize feedback, responses were analyzed and grouped together by their general message (graduation requirements, overall impact of NCLB on CTE programs, importance of CTE courses, financial decision results, NCLB goals/objectives, CTE's ability to address academic requirements). Comments summarizing the overall expression in each group were: "As graduation requirements increase, CTE classes get the squeeze. Only the strong community supported programs will survive and even that is no guarantee," "NCLB will eventually eliminate most CTE courses. Students required to take more math, English, and science must lose electives," "NCLB hurts, not helps, CTE. Sadly these courses are often played down, and the truth is that many students depend upon these courses for career moves. Students need these courses. I wish that people would realize not all students do, and are able, to go to college," "It has really hurt CTE because of the testing. Many of our career/vocational courses were cut due to finances," "NCLB has goals that will never be met by any district. CTE programs are jeopardized because of NCLB. Too many people in education have tunnel vision and are unaware of how students can achieve a meaningful education," and "We have incorporated reading and mathematics across the curriculum—even in CTE courses. However, CTE was already using math and reading extensively before that decision."

Question 2: Perceptions of Career and Technical Education Teachers

Career and technical education (CTE) teachers responded to the same four-point Likert scale items to assess their perceptions. The 114 usable surveys were included in this analysis. Teachers were also in general agreement with most statements (Table 2).

Teachers agreed CTE courses help prepare students to take standardized tests that assess English language arts (89, or 78.07%) and math (103, or 90.35%). Respondents also believe CTE can play a role in helping the State achieve the two goals related to standards and graduation. Responses to "CTE courses can help your school meet the goal of 'all students will reach high standards, at a minimum of attaining proficiency or better in reading and mathematics'" were in agreement (104, or 91.23%). There was even stronger agreement for "CTE courses can help your school meet the goal of 'all students will graduate from high school'" with 109 (95.61%) either agreeing or strongly agreeing. Once again, none of the respondents selected strongly disagree for this item. Almost all of the teachers believe that English Language Arts Illinois Learning Standards (102, or 89.47%) and Mathematics Illinois Learning Standards (112, or 98.25%) can easily be incorporated into many CTE courses offered at their schools, as well as developmental reading activities (102, or 89.47%).

The teachers did disagree with a few statements. Most of the teachers (101, or 88.60%) either disagreed or strongly disagreed with "No Child Left Behind has had a positive impact on CTE enrollment at your school." This was also the case regarding

“No Child Left Behind has had a positive impact on the image of CTE at your school.” Ninety-seven (85.09%) of the CTE teachers disagreed or strongly disagreed. With “No Child Left Behind has had a positive impact on how CTE courses are taught at your school,” 70 (61.40%) teachers either disagreed or strongly disagreed with this statement.

Teachers were also given an opportunity to respond to an open-ended question asking for any additional comments regarding the impact of NCLB on CTE. Responses were grouped by general idea (graduation requirements, overall impact of NCLB on CTE programs, importance of CTE courses, financial decision results, NCLB goals/objectives, CTE’s ability to address academic requirements), and comments that summarized the overall expression in each group follow: “NCLB has not let students explore as many courses outside of English, math, science, and social studies,” and “I feel that it is being put into jeopardy because NCLB is not taking into consideration that our children learn in many different styles. They need to be able to see how math and reading will apply to their lives later on after they leave high school,” “The more emphasis placed on academic areas without practicality, the lower test scores will be produced. What we need are better vocational programs. Most schools are doing away with vocational studies. The students lose interest and don’t have a reason to stay in school,” “It is taking resources away from CTE,” “NCLB is a great idea but impractical in reality,” and “Currently, the entire school is focused on reading and math. My department (Ind Tech) is doing developmental reading for information exercises. Overall time in each I.T. course is 1 period per week (20%). Hope it helps.” A few teachers did support NCLB in their statements: “Maybe we will have students reading at grade level, and it will cause districts to rescind their ‘social promotion’ policies” and “I think the concept of NCLB is great. Schools need to be pushed towards meeting high standards. They have been allowed to do substandard work for years and we are failing the students.”

Table 2
Teachers’ Perceptions

Item	Strongly Agree	Agree	Disagree	Strongly Disagree
	<i>n</i> <i>%</i>	<i>n</i> <i>%</i>	<i>n</i> <i>%</i>	<i>N</i> <i>%</i>
CTE courses offered at your school help to prepare students to take standardized tests that assess English language arts.	17	72	22	3
	14.91	63.16	19.30	2.63

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CTE courses offered at your school help to prepare students to take standardized tests that assess math.	28	75	10	1
	24.56	65.79	8.77	0.88
CTE courses can help your school meet the goal of “all students will reach high standards, at a minimum of attaining proficiency or better in reading and mathematics.”	41	63	9	1
	35.96	55.26	7.89	0.88
CTE courses can help your school meet the goal of “all students will graduate from high school.”	76	33	5	0
	66.67	28.95	4.39	0.00
No Child Left Behind has had a positive impact on CTE enrollment at your school.	3	10	70	31
	2.63	8.77	61.40	27.19
No Child Left Behind has had a positive impact on the image of CTE at your school.	1	16	67	30
	0.88	14.04	58.77	26.32
No Child Left Behind has had a positive impact on how CTE courses are taught at your school.	7	37	56	14
	6.14	32.46	49.12	12.28
English Language Arts Illinois Learning Standards can easily be incorporated into many CTE courses offered at your school.	44	58	11	1
	38.60	50.88	9.65	0.88

No Child Left Behind's Impact on CTE

Mathematics Illinois Learning Standards can easily be incorporated into many CTE courses offered at your school.	53 46.49	59 51.75	1 0.88	1 0.88
Developmental reading activities can easily be incorporated into many CTE courses offered at your school.	43 37.72	59 51.75	12 10.53	0 0.00

Question 3: Differences in Principals' and Teachers' Perceptions

In order to determine if there were differences between principals' and CTE teachers' perceptions regarding the impact NCLB has had on CTE, a chi-square test was utilized. The chi-square test evaluates the probability that some factor other than chance accounts for the relationship (Best & Kahn, 1998). Analyses using both 0.05 and 0.01 confidence levels were completed.

There was only one item which revealed a statistically significant difference between the groups. High school principals were in agreement with "No Child Left Behind has had a positive impact on CTE enrollment at your school" while CTE teachers were in disagreement. The difference in proportions is significant, $\chi^2(3, N = 237) = 66.97, p < .0001$. At the 0.05 confidence level, the threshold was 7.81 and at the 0.01 confidence level the threshold was 11.34. The conclusion was robust at both levels and suggested very strong evidence against the null hypothesis of no difference in perceptions.

Conclusions and Discussion

Several limitations to this study are warranted. The return rate (27% for high school principals and 26% for CTE teachers) needs to be considered. This return rate may not have been as high as it could have due to the listing available was two years old. Subjects of this study were from one state, and each state has established its own benchmarks and standards to meet the goals of the NCLB legislation. As a result of these limitations, conclusions should not be generalized.

Based on the level of agreement to the first three items (CTE courses offered at your school help to prepare students to take standardized tests that assess English language arts and assess math and CTE courses can help your school meet the goal of "all students will reach high standards, at a minimum of attaining proficiency or better in reading and mathematics) in the findings, high school principals and CTE teachers believe CTE programs have the ability to help schools meet the academic levels in math, reading, and language arts. There was overwhelming agreement from participants supporting CTE's ability to help their schools meet the goal of reaching high academic

standards. These perceptions are in agreement with the research related to the teaching methods utilized in CTE courses (ACTE, 2006; CORD, 2001; Glenn, 2005; Lynch, 2000; Parnell, 2001; Predmore, 2005). Glenn (2005) stated that teaching methods traditionally used in CTE courses are effective in strengthening basic skills.

Participants also believed CTE programs are able to help students graduate from high school, another goal of the NCLB Act, based on responses to “CTE courses can help your school meet the goal of ‘all students will graduate from high school’” shared in the findings. This belief has also been supported in literature (Bridgeland, et al., 2006; Reese, 2005; Thornburgh, 2006). Thornburgh’s (2006) research identified five things schools could do to help reduce the number of dropouts with one of those things being supporting vocational education. The National Dropout Prevention Center identified studies demonstrating the positive effect of CTE on reducing high school dropout rates (Reese, 2005).

Even though participants in this study were in agreement regarding the benefits of CTE programs in helping schools achieve these goals outlined in the NCLB ACT, there was one difference in perceptions between the two groups. Principals agreed NCLB has had a positive impact on CTE enrollment at their schools while CTE teachers disagreed. The analysis provided very strong evidence that there was a difference between perceptions of the two groups on this item.

Based on the study, principals and CTE teachers do believe CTE courses are beneficial in helping high schools achieve two of the goals established in the NCLB Act—achieving high academic standards and all students graduating from high school. Both groups have similar perceptions regarding benefits CTE programs can provide.

Implications for Practice

According to research, teaching methods used in CTE courses are effective in helping students learn and retain content and in motivating them to stay in school. However, further research should be completed to ensure these methods are recognized under NCLB’s effective teaching methods. Practices utilized in CTE courses should undergo the process required to show they can meet the rigorous standards and yield the positive results outlined in NCLB. Teachers and administrators who believe in the value of CTE and the practical, contextual approach that is utilized in teaching core academic content must step up and push for these methods to undergo the assessment process.

High school principals and CTE teachers recognize CTE courses help prepare students to take standardized tests that assess English language arts and mathematics. Current and future CTE teachers must be made aware of the importance of incorporating core academic areas and learn how to document how this integration occurs. How students benefit from taking CTE courses, whether that be in achieving academic standards or persisting to graduation, needs to be documented and shared with school leaders, state leaders, and national leaders who make educational decisions and policies.

The NCLB legislation has forced schools to make data-driven decisions, and the only way CTE will continue to be a beneficial secondary program is if teachers document how their lessons assist students in developing the skills needed to be successful and in turn, show the documentation to administrators, school boards, and legislators. With the focus being on NCLB, data collection and documentation must relate to helping students achieve reading, language arts, and math skills, as well as providing motivation to stay in school until graduation. In addition, state test results should be evaluated to determine if enrollment in CTE courses affects students' test scores.

All CTE teachers should identify Illinois Learning Standards that are addressed in each of their classes and share this information with administrators and school board members. Recognizing English language arts, math, and reading are taught in CTE courses is not enough. Documentation must be readily available and shared with those who make decisions regarding which courses and programs are promoted within schools. A list of learning standards should be developed for each class and these learning standards should appear on unit plans, lesson plans, and other course-related materials.

Further Research

Further research is warranted on this topic. Due to the fact this research was limited to participants in one state, similar research should be conducted on a national level so results can be generalized. Each state has established its own standards and benchmarks and has its own method of supporting CTE programs and these differences will be addressed in a national study.

Research should be conducted to determine the extent to which reading, English language arts, and math are integrated in CTE classes. This research should include if the level of inclusion has changed as a result of NCLB and if the level of awareness among decision makers has increased regarding the ability of CTE courses in students and schools meeting the goals of NCLB. It should also be determined if CTE teachers are documenting the inclusion of these core academic areas in their courses.

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Distance Education Programming Barriers in Business Education Teacher Preparation Programs in the United States

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Abstract

Distance education has been viewed by some individuals as a means to break down barriers to accessing educational opportunities. Despite its “anytime, anyplace” label, distance education can present unique barriers to students, faculty, and the educational institutions that attempt to provide it. This study examined the perceptions of business education teacher educators in the United States with respect to these barriers. The study also sought to determine demographic characteristics of the educational institutions involved in the utilization of distance education in business education teacher preparation, including the number of distance education courses, programs offered, and the categorical breakdown of those courses. While specifically focused on business education teacher preparation, the study offers findings and recommendations applicable to other subject areas within teacher preparation considering distance education as a delivery mechanism.

Background

Business Education Defined

The National Business Education Association describes business education as the career and technical program that prepares students for today's business environment (Brantley & Davis, 1997). In addition to providing employment training, business education also gives students personal business skills that help them function effectively as consumers and citizens. Business education programs can be found in a variety of settings, serving a diverse population of students. These settings include primary and middle schools; junior and senior high schools; postsecondary settings, such as two-year and four-year colleges and universities; and adult education centers.

Graduates of business education programs are able to function as economically literate citizens through the development of personal finance skills and an understanding of business operations. They should demonstrate the ability to work effectively in a multicultural team environment through the development of communication, leadership, and interpersonal skills; apply technology to solve personal and business problems; and demonstrate a desire to actively and perpetually acquire knowledge in order to solve personal and business problems (Missouri Department of Elementary and Secondary Education, Division of Vocational and Adult Education, 2000). Curricula for business education can vary from school to school. Table 1 outlines courses that are generally offered at the secondary level.

Table 1
Courses and Course Descriptions of Business Education Curricula

Course	Course Description
Keyboard Applications	Enables students to develop and enhance their skills in entering alphabetic, numeric, and symbolic information on a keyboard
Computer Applications	Provides students with knowledge to gain skills in internet usage, word processing, database management, and spreadsheet applications
Introduction to Business	Designed to give students knowledge of how business operates in today's society
Desktop Publishing	Allows students to gain skills in operating desktop publishing software for the development of business publications
Computer Programming	Focuses on introductory skills in computer language, code, testing, monitoring, and debugging computer programs
Accounting	Concentrates on teaching students the basic understanding of manual and automated accounting principles and procedures, including topics such as accounting equations, the accounting cycle, posting to journals, and preparing end of statement reports
Business Law	Introduces the basic legal principles relevant to students' lives as consumers, citizens, and employers
International Business	Provides students with information on the global marketplace
Economics	Enables students to gain knowledge of economic principles in order to be competent citizens in a capitalistic society

Today's business environment is becoming increasingly global and reliant on

information and computer technology. As a result, institutions have begun to offer courses in e-business, computer technology, and multimedia. Additionally, business principles have changed from secretarial and office procedures to management and entrepreneurship procedures. This change has also had an impact on the curriculum, shifting courses from shorthand and clerical skills to management and entrepreneurship (Gordon, 2003).

Distance Education Defined

The general term “distance education” is one of many terms used to describe any educational endeavor where the instructor and the students are separated by a physical distance (Christopher, 2004). The idea of distance education is not new, and has evolved with technology from written correspondence courses, to the use of television and radio, to computer technology. Today this term is almost exclusively used to describe the transmission of instruction from one location to multiple locations via telecommunication technology that is either synchronous (real time) or asynchronous (time delay). (Burgess, 2003; Smallwood & Zargari, 2000). As referenced in Table 2, this telecommunication technology has many forms.

Table 2
Technology Utilized in Distance Education by Technological Category and Time Mode

Technological Category	Time Mode	
	Synchronous	Asynchronous
Voice	Telephone and audio conferencing	Audiotapes and radio
Video	Real-time moving images with audio conferencing (one-way/two-way video with two-way audio)	Still images (slides), preproduced moving images (e.g., film, videotape)
Data (Computer Applications)	Electronic mail, fax, real-time computer conferencing, World-Wide Web applications, Internet relay chats (IRC)	Computer-managed instruction (CMI)
Print	Not applicable	Textbooks, study guides, workbooks, course syllabi, and case studies

(University of Idaho College of Engineering, 2006; Zirkle, 2003)

Additionally, Keegan (2002) argues that the next generation of distance education will utilize mobile technology as a means of transmitting instruction.

Keegan described the move from wired computers and telephones to wireless ones. This mobile technology includes wireless laptops, mobile telephones, PDA's, and palmtops.

Literature Review

Benefits to Distance Education

Continual technological advances have allowed the notion of distance education to move from the early days of correspondence courses delivered by postal mail to today's "anytime, anyplace" system of virtually on-demand courses delivered via satellite, the Internet, and videoconferencing. It is this technological change that has driven the growth in distance education and has prompted researchers to examine the potential benefits associated with distance education.

Zirkle (2003) outlined benefits to students, instructors, and educational institutions engaged in distance education. For students, the ability to access courses and programs without regard to place and time constraints was a primary benefit, along with the self-paced nature of many distance education offerings. These were especially important to working adults, who often have significant work and family responsibilities, and need flexible educational opportunities. Students with physical disabilities were also found to benefit advances in assistive technology that have improved access to distance education courses and programs.

Distance education offers faculty the opportunity to reach students perhaps previously inaccessible due to time and place constraints, and allows for the modeling of the effective use of technology in instruction, an important skill for faculty involved in teacher education (International Society for Technology in Education, 2002; National Council for Accreditation of Teacher Education, 2006). Distance education methodologies are also adaptable to diverse learning needs using audio, video, and printed material (Zirkle, 2003). Teacher education efforts in career and technical education have historically utilized the services of itinerant teacher educators at off-campus sites. Distance education offers these individuals a respite from traveling, leaving time available for more productive faculty purposes

Educational institutions can also receive benefits from offering courses and programs through distance education. Enrollments can be increased by accessing the aforementioned group of previously unreachable students, and many distance education efforts are scalable, i.e., they can be offered to 10 or 10,000 students without significant expenses in physical facilities (Rosenberg, 2001). Distance education can also assist educational institutions with meeting standards for the use of technology. Professional education associations, such as the National Council for the Teachers of Mathematics, and accrediting groups, such as the National Council for the Accreditation of Teacher Education, all specifically mention the use of technology in their program standards (Zirkle, 2003).

Institutional Barriers

Numerous studies have addressed the barriers to implementation of distance education from the institutional perspective. Several researchers (Berge, 2002; Johnson & Benson, 2003; VanDusen, 2000; Zenger & Uehlein, 2001) have identified costs associated with program development, implementation, and maintenance as potential barriers to program implementation. Garland (1993) and Yap (1996) also added resource availability, scheduling, and technical support to the list of barriers. Additionally, the slow pace at which institutional change occurs, and an institution's philosophy are also cited as barriers (Levine & Sun, 2002).

Faculty/Instructional Barriers

Barriers to implementation of distance education also exist at the faculty/instructional level. These include the lack of non-verbal communication, which is a characteristic of distance education (Smith, 2002), the increase in workload for the instructor (Birbaum, 2002; Christopher, 2004; Picciano, 2001; Smith, 2002; Young 2002), and the issue of logistics in testing and assessment (Christopher, 2004). The ability to teach technical, psychomotor skills through distance methods has been questioned by several researchers (Fann & Lewis, 2001; Miller & Webster, 1997; Zirkle, 2002; 2004). Additionally, Berge (2002) listed copyright issues, and the fact that some faculty members fear that technology may pose a threat to their job security. Smith (2002) also cited a lack of training and technical support as instructional barriers. Finally, the lack of incentives, financial and otherwise, for instructors to participate in distance education has been investigated (Franklin & Kaufman, 1999; Lynch & Corry, 1998; Picciano, 2001; Wolcott, 1999).

Student/Learner Barriers

The feeling of isolation that can potentially occur in distance education is well documented (Abrahamson, 1998; Berge, 2002; Kerka, 1996; Smith, 2002). There are also questions of access and the technological literacy of the students, which are explored by Smith (2002) and Berge (2002). Finally, it has been noted that many students learn best through direct interaction with the instructor and other students, a feature lacking in distance education. (Miller & Webster, 1997; Zirkle, 2002).

Purpose of the Study

The purpose of this study was to determine the perceptions of business education teacher educators across the United States with respect to the barriers of offering courses and programs via distance education. Information regarding the status of these business education teacher preparation programs was also sought, including the types of licensure/certification offered, the numbers of students enrolled, and the categories of coursework required. Three research questions were addressed:

1. What is the present status of business education teacher preparation in educational institutions in the United States with respect to programs and courses offered and numbers of students enrolled?
2. Which courses and programs in business education teacher preparation are offered through distance education technology?
3. What are the perceptions of business education teacher educators in the United States regarding specific barriers associated with offering business education teacher preparation courses and programs at a distance?

Methods

Subject Selection

The first step in the selection process consisted of a search of state department of education websites for state approved business education teacher preparation programs and the contact information of the individual in charge of each program. Once the number of programs in a given state was determined, if the contact information was not available at the state department of education website, a search of the college/university website was conducted. Contact information that was available at the state department of education website was verified through a search of the university's website. A database was created with a total of 310 colleges and universities determined to have business education teacher preparation programs. In order to obtain the maximum number of responses, it was decided to send the survey questionnaire to each of the 310 colleges and universities. In programs with more than one identified faculty member, the survey questionnaire was sent to the faculty member designated as having a leadership role for the program, such as a department chair. In order to assure representative responses with respect to distance education programming, a request was made to the designated recipient to direct the survey questionnaire to an individual knowledgeable in distance education, if such a person existed in the program.

Instrumentation

The first section of the survey questionnaire consisted of institutional information, business education teacher licensure information, and information regarding the institution's use of distance education. Institutional information was comprised of questions regarding the type of institution (public or private), the calendar system used (quarter or semester), and the approximate enrollment at the institution. The business education teacher licensure program information consisted of questions regarding subject areas offered, the type of business education certificate or license offered, the number of students enrolled in the program, and the breakdown of hours between business content, teaching pedagogy, and general education requirements. The distance education information asked participants to answer "yes"

or “no” to whether they offer partial or whole programs through distance education. If participants answered “yes”, they were asked to list the program/course titles offered at a distance.

The second section, which was constructed based on the work of other studies by Garland (1993), Galusha (1998), Hillesheim (1998), Waits and Lewis (2003), Yap (1996), and Zirkle (2002), addressed distance education barriers. Thirty-six barriers were developed and placed into one of the three following categories: institutional barriers, faculty/instruction barriers, and student/learner barriers. Each category consisted of 12 statements. A four point Likert scale was constructed consisting of the following:

- 1 - no impact for this barrier
- 2 - minor impact - on isolated occasions, is/was a barrier
- 3 - moderate impact - is/was a barrier on several occasions
- 4 - major impact - is/was a consistent barrier

Respondents were asked to rank their perceptions of the selected barriers to offering business teacher preparation courses or programs at a distance using the scale above.

The final section of the survey questionnaire utilized an open-ended question which asked respondents to elaborate on any of the previous barriers to distance education. Respondents were also asked to provide additional barriers if appropriate.

The survey questionnaire was examined for face validity by a panel of experts. Three tenured faculty members experienced in distance delivery were part of the panel, as well as an associate dean for teacher education. Comments and suggestions for change were solicited and incorporated into the questionnaire where appropriate.

Procedures

The procedure for distributing the survey questionnaire began with an email informing teacher educators that they had been selected as potential participants in the study and informed the recipients that they would be receiving a questionnaire through regular mail. Participants were also given the choice to receive the questionnaire via email. Survey questionnaires sent through regular mail included a self addressed stamped envelope and a letter describing the research.

Data Analysis

Data were analyzed in three ways:

1. Demographic data were summarized according to the following components: institutional characteristics, numbers of licensure programs, and the number and type of distance education courses and programs offered
2. The statistical package SPSS 14.0 was used to input the responses to the

Likert style questions, which were analyzed through basic descriptive measures

3. By using qualitative measures, responses to the open-ended questions were summarized and examined for themes, specific data, and other information

Limitations

Distance education has been evolving as an instructional medium for decades, dating back to paper-based correspondence courses by mail. As technology changes, educational institutions will adapt their instructional methods. Some institutions have embraced distance education, while some have not, and still others are undecided. Establishing a stable point in time for determining the status of courses and programs in business education teacher preparation that utilize innovative technology for distance delivery is difficult and was recognized as a potential limitation of this study.

Results

After the initial contact, the researchers received emails or written responses from 17 institutions indicating they no longer had a program in business education teacher preparation. From the original list of 310 institutions, this reduced the potential number of survey respondents to 293. A total of 165 survey questionnaires were returned, for a response rate of 56.3%. Each of the 165 survey questionnaires had complete responses to the 36 barriers of interest from the Likert style questions and were deemed usable. Responses to the open-ended questions varied in length. Of these 165 survey questionnaires, 95 were from educational institutions that identified themselves as state-assisted, while 70 were private colleges or universities. The vast majority (153) were on a semester-based academic calendar. Total enrollments in the institutions ranged from approximately 500 students at a small private college to over 50,000 at a state-assisted university.

Survey questionnaires with multiple choices, such as the Likert-type scale utilized in this study, can be analyzed via Cronbach's Alpha to determine inter-item reliability (Gloeckner, Gliner, Tocterman & Morgan, as cited in Farmer & Rojewski, 2001). Using the data from this study, Cronbach's Alpha was calculated at .848.

Research Question 1

What is the present status of business education teacher preparation in educational institutions in the United States with respect to programs and courses offered and numbers of students enrolled?

There was a diversity of response with respect to the types of business education teacher preparation programs and certifications/licenses offered by colleges and universities. The most common teacher certification/licensure program reported was

in business education teacher preparation, generally for grades seven through twelve. Some institutions reported the certification/licensure to include information technology, technology, or some type of computer fundamentals/basics as part of the credential. Other institutions reported offering endorsement or “add-on” programs in business education/information technology, which allow teachers with existing certifications/licenses in other teaching fields to acquire another teaching credential. The baccalaureate was predominantly listed as the degree associated with the licensure program, although some institutions have post-baccalaureate and master’s programs available to obtain the certification/licensure.

Enrollment in business education teacher preparation programs also varied widely. From a low of five students to a high of over 75, many business education teacher preparation programs seemed to be in states of transition. One respondent noted “Our business education teacher preparation continues to be one of our more popular programs. We have been successful in maintaining the program number at between 65-75 students currently in the program.” Another stated, “This is a post-baccalaureate program only and we have no current students in the program.”

Research Question 2

Which courses and programs in business education teacher preparation are offered through distance education technology?

There were five institutions that indicated their particular business education teacher preparation program was available completely via distance methodologies. Forty-six of the 165 respondents reported their program as being offered partially through distance education. The remaining respondents (114) reported no distance education programming within their business education teacher preparation curriculum.

Respondents were asked to categorize courses offered via distance education into general education (general college and university requirements for graduation, consisting of courses in English, mathematics, arts/humanities, and the sciences), business content, and teaching pedagogy. Of those listing courses in their program as being taught via distance, respondents indicated a lack of knowledge regarding distance general education courses, since those courses were not in their departments. With respect to business content courses, 14 reported courses in Introduction to Management and Introduction to Marketing as being taught via distance education. In addition, several courses focusing on technology were commonly taught via distance education, such as Desktop Publishing, Web Design, and Keyboarding. Courses related to teaching pedagogy were less likely than business content courses to be taught via distance. However, of pedagogy courses, respondents did list courses in Introduction to Curriculum (11 responses) and Teaching Diverse Learners (eight responses) as those taught more commonly via distance.

Research Question 3

What are the perceptions of business education teacher educators in the United States regarding specific barriers associated with offering business education teacher preparation courses and programs at a distance?

Institutional Barriers. Several of the institutions indicated the primary issue to offering any courses via distance education was that the notion of offering courses in this manner would run counter to the institutional mission and philosophy. One respondent noted, “My college is a very traditional four-year liberal arts college that still believes in the desirability of face to face contact between teachers and students and students and students. There has never been a serious discussion of distance learning to my knowledge.” Another mentioned, “My university has no interest in developing distance education courses.”

Support, planning, and funding were ranked as the top institutional barriers to distance education by the respondents. One respondent commented, “The major obstacle for us is the lack of resources. We currently do not have the personnel in place or budget for offering a lot of online courses.” Another noted, “Funding for technology is a major barrier.” Table 3 lists the barriers ranked from highest to lowest.

Table 3
Institutional Barriers to Distance Education as Perceived by Teacher Educators

<u>Institutional Barriers</u>	<u>M</u>	<u>SD</u>
Support staff to help with course development	2.95	1.02
Strategic planning for distance education	2.92	.97
Funding to implement distance education programs	2.91	1.08
Shared vision for distance education in the institution	2.87	1.01
Start-up costs for distance education programming	2.86	1.06
Climate for organizational change	2.82	1.12
Technical support	2.63	.94
Technology-enhanced classrooms, labs, or infrastructure	2.38	.96
Security issues (computer crime, hackers, piracy, viruses)	2.04	1.04
Library access to get resources for class	1.74	.75
Local versus out-of-state tuition	1.72	.90
Registration, students’ ability to register for classes	1.71	.83

Faculty/Instruction Barriers. Respondents had strong opinions about the use of distance education overall. The time needed to develop courses for distance delivery was listed as the highest-ranked barrier, a finding consistent with many other surveys on the use of distance education. The lack of compensation and incentives for faculty

to offer courses at a distance were also ranked highly.

With respect to preparing business education teachers through distance methodologies, one respondent stated, “The philosophy of business teacher educators is that preparing teachers must be a face-to-face interactional endeavor.” Another noted, “As a program area we feel that methods should not be taught online. The use of modeling is an important component of a methods course and is surely diminished in this forum.” Table 4 lists all the barriers surveyed.

Table 4
Faculty/Instructional Barriers as Perceived by Teacher Educators

<u>Faculty/Instructional Barriers</u>	<u>M</u>	<u>SD</u>
Time commitment	3.30	.86
Faculty compensation, incentives, etc. to implement DE	3.01	1.03
Resistance to online teaching methods	2.87	.99
Faculty training to implement distance education	2.81	1.06
Faculty level of technical expertise	2.77	.98
Ability to teach career and technical content at a distance	2.56	.96
Keeping up with technological changes	2.47	.89
Colleague knowledge/support of distance education	2.39	.87
Concerns with evaluation, testing, assessment, outcomes	2.36	.83
Ability to monitor identity of distance education students	2.24	.81
Intellectual property issues	2.03	.79
Job security issues	1.49	.78

Student/Learner Barriers. Respondents from several institutions indicated the ability to learn content at a distance as a perceived concern for learners. Additionally, teacher educators perceived the isolation from other students and faculty and the absence of an instructor as student barriers to distance education. Because of the absence of an instructor in a distance education setting, motivation and quality of work issues arise. One respondent stated, “Students tend to max out their time to complete the course. Too many seem to be cramming all the work at the end.” Table 5 lists the barriers ranked from highest to lowest.

Table 5
Student/Learner Barriers to Distance Education as Perceived by Teacher Educators

<u>Student/Learner Barriers</u>	<u>M</u>	<u>SD</u>
Ability to learn career/technical content at a distance	2.80	.98
Isolation from other students and faculty	2.48	.82
Absence of an instructor (motivation, quality of work issues)	2.38	.78
Time constraints associated with job responsibilities	2.30	.94
Student support services (help with advising, admissions, financial aid, etc.)	2.18	.85
Student's availability of technology (Internet services, computer access, etc.)	2.18	.82
Student's level of technical expertise	2.13	.84
Technology fees (increased costs associated with distance education)	2.01	.89
Monetary issues- paying for courses	2.01	.89
Instructor availability (students' ability to contact instructor and discuss concerns)	1.98	.80
Obtaining grades, transcripts, and other course related records	1.60	.67
Transferability of credits	1.46	.72

Conclusions

Institutional Barriers

It appears that there is a small minority of institutions that, while intrigued by the utilization of distance education, are not interested at this time in using it to deliver their business education teacher preparation programs. Institutions not currently utilizing distance education programs appear hesitant that if implemented, the underlying philosophy and mission of the school would be lost. One respondent stated, "Our program has no interest in more plans to offer any portion of our teacher prep program via distance learning. To do so would run counter to the philosophy of our institution, i.e., that at the heart of all education is relationships. Distance education, we believe, by its very nature inhibits relationships."

Among those institutions who utilize distance education, supporting, planning, and funding distance education efforts appear to be the biggest challenges. It seems that if a support staff were put in place to help educators with distance education and course development, implementation would be less challenging. This lack of support was noted by one respondent, who stated, "We don't offer distance learning courses. There are distance learning components (e.g. Blackboard, etc) but there is no barrier in

place nor is there much encouragement in the school at this time.” Yet another respondent stated, “The Business Education teacher preparation program is housed in the School of Business. Our current dean will not allow us to develop distance learning at this time.”

Additionally, funding issues, such as the lack of resources available and compensation for the instructors also seem to be major obstacles in utilizing a distance education program. In support of this conclusion, one respondent stated, “The major obstacle for us is the lack of resources. We currently do not have the personnel in place or budget for offering a lot of online courses.”

Faculty/Instructional Barriers

As with many prior distance education studies, the time commitment associated with the transition of traditional, on-campus courses to a distance format was identified as the largest barrier. In addition to the instructor’s original responsibilities, this may make the implementation of an online course seem unattractive. Also, as found by previous studies (Franklin & Kaufman, 1999; Lynch & Corry, 1998; Picciano, 2001; Wolcott, 1999), faculty compensation and incentives for developing these courses stood out as a barrier. It is clear faculty wish to be compensated for their time when it relates to distance education course delivery. One respondent noted, “The institutional reward system doesn’t recognize any contributions except research.”

Finally, it appears that educators are wary of teaching certain content via distance, and may believe that some subject matter cannot be taught outside of a traditional classroom. In support of this conclusion, one respondent stated, “There is a notion held by some faculty that anything can be taught via distance learning/online format. As we are about preparing people to teach people, it seems to run counter to common sense that a total online delivery mechanism/method would be the best choice.”

Student/Learner Barriers

As perceived by educators, the ability to learn career/technical skill content outside of a traditional classroom appears to be the biggest challenge for learners at a distance. While some of the computer-based skills found in business education teacher preparation courses can be effectively taught online, many of the skills found in labs can only be obtained through actual interaction with the equipment (Zirkle, 2004). This perception could also be a function of the isolation from other students and faculty, and/or the absence of an instructor. It also appears some educators are concerned that students cannot learn teaching pedagogy in an online setting. One respondent claimed, “We hesitate offering distance education especially in teaching pedagogy. Interaction with faculty and learning from veteran teaching professors is a major priority.”

Another challenge for students as perceived by educators seems to be staying motivated in this type of setting. This also may have to do with the lack of face-to-face interaction, and could impact the quality of the students' work. Finally, it appears time constraints associated with students' job responsibilities are also a barrier to distance education. Time management is extremely important in this type of setting, and some learners may not be able to put the adequate amount of time in to successfully complete the course.

Recommendations

Institutional Barriers

Overall, respondents listed lack of support as the highest institutional barrier to distance education. Therefore, it is recommended that institutions looking to utilize distance education put a support system in place to implement such programs. Several positive responses appear to support this recommendation. One respondent stated, "Our university is very supportive of distance education. We have a great financial and technical support. Our department in particular has been a leader and a model for distance education at our university. We have training available for anyone interested in starting distance education courses." Another respondent noted, "Distance education is a part of our extension role of our university. We have had good support as a part of that mission." Schools that have success with distance education appear to have excellent support systems in place to assist instructors and personnel with implementation.

Additionally, funding was ranked highly by respondents as another institutional barrier to distance education. Institutions receiving funding for distance programs appear to have fewer challenges with implementation. One respondent noted "Even though I have highly ranked 'funds to implement' and others, this does not mean that it was a barrier rather a factor in us being able to start a distance learning program. We received a start up grant from the Outreach Office of the University." Yet another respondent stated, "We have a grant with the Higher Education Department to develop online licensure programs. The grant includes having a faculty developer to train faculty to develop courses." Therefore, it is recommended that schools looking to utilize distance education programs search for external funding sources to assist with program implementation.

Faculty/Instructional Barriers

Time constraints to utilize distance education programs and faculty compensation and incentives were the highest ranked faculty/instructional barriers. These two barriers go hand-in-hand with one another. The time it takes to implement a distance education program can be very extensive, and many educators may shy away from this commitment. Therefore, it is recommended that some incentive program be

put in place to assist faculty during this transitional period. Distance education provides many benefits for learners, educators, and the institution, therefore, providing incentives and compensating the instructors is highly recommended to help break down this barrier for schools looking to implement such programs.

Another faculty/instructional barrier highly ranked by respondents was the resistance to online teaching methods. Therefore, it is recommended that institutions looking to utilize distance education take steps to educate instructors and personnel of the many benefits of distance learning to overcome this resistance.

Student/Learner Barriers

The ability for students to learn career/technical content at a distance was perceived by educators to be the highest student/learner barrier to distance education. Several other barriers ranked by respondents play a key role in complicating this perceived challenge. Educators voiced concern about the isolation from other students and the absence of an instructor in distance learning programs. Many measures can be put in place to reduce the perceived isolation brought on by distance education. Telecommunication technology, described earlier in Table 2, can be used to decrease student isolation. By using telecommunication technology, students can benefit from synchronous instruction via distance, closely mimicking a traditional classroom. Therefore, it is highly recommended that institutions looking to utilize a distance education program invest in resources and technology to help reduce student isolation. Resources and technology put in place to reduce isolation may also increase student motivation, another concern voiced by educators. Higher-quality technology, such as videoconferencing and computer-based simulations, can assist with instructional strategies designed to develop students' technical skill expertise.

Final Thoughts

Addressing all these various barriers is key to any distance education effort. As this study has demonstrated, institutions, faculty, and students engaged in distance education may experience unique constraints. Additional studies such as this one are needed to identify, categorize, address, and hopefully correct these barriers to access.

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