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DETERRENTS TO PARTICIPATION IN WEB-BASED CONTINUING PROFESSIONAL EDUCATION FOR CERTIFIED PUBLIC ACCOUNTANTS IN GEORGIA

by

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Deterrents to Participation in Web-based Continuing Professional Education for Certified Public Accountants in Georgia
(Under the direction of THOMAS VALENTINE)

Although distance education is experiencing rapid proliferation in the United States and has become a viable alternative or addition to traditional education, there is little research on the deterrents to the use of Web-based courses or programs for continuing professional education. Neither the deterrents to Web-based education by professionals in general nor the relationship between various deterrents and the personal and professional characteristics of individual participants has been examined. This study used a mailed self-completion survey to examine the perceptions of in-state, fellow certified public accountants in the state of Georgia (N = 7,886) concerning deterrents to participation in continuing professional education using Web-based education. Four broad dimensions of deterrence to participation in Web-based education for certified public accountants in Georgia were identified through factor analysis. The two most powerful deterrents were: Concerns About Electronically-Mediated Communication and Concerns About the Quality of Course Offerings. The other two were Concerns About Access to Technology-Associated Resources and Concerns About the Availability of Necessary Personal Resources. The vast majority of respondents reported access to the technology and personal characteristics necessary for participation in Web-based education activities. However, the percent of respondents using Web-based education for continuing professional learning is minimal.

INDEX WORDS: Accountants, Barriers, Certified Public Accountants, Continuing Education, Continuing Professional Education, Deterrents, Distance Education, Web-based Education

DEDICATION

This dissertation is dedicated to my family—
a never-ending source of love and support.

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CHAPTER I

THE PROBLEM

The constant and ever-quickening pace of change in the world today dictates that practicing professionals engage in a process of lifelong learning. As various researchers (Nowlen, 1988; Queeney & English, 1994) have determined, significant factors contributing to this demand include the following:

- the explosion of information,
- the changing nature of knowledge,
- increasing organizational complexity,
- the drive to maintain excellence and to remain competitive,
- the public's demand for professional accountability,
- compulsory relicensure,
- the threat of malpractice litigation,
- rapid development of new technologies, and
- shifts in governmental regulatory patterns.

All of these factors are combining to place a growing demand on educators involved in continuing professional education to provide quality learning experiences.

Cervero (1988) maintains that educators have responded to that demand by formalizing continuing professional education as a field of educational practice. While conceptually overlapping with preservice professional education and adult education, continuing professional education has become distinct from other areas of educational practice. As Cervero (1988) notes, the individuals that continuing professional education professionals serve are,

> *like all other adults* in that they share basic human processes such as motivation, cognition, and emotions, *like some other adults* in that they belong to a profession, *like no other adults* in that they belong to a particular profession. (p. 15)

Houle, Cyphert, and Boggs (1987) state that the public relies on professionals for crucial services. Cervero (1989) maintains that as a result of providing these crucial services, professionals have a high degree of control over the lives of people in society. He posits that at the current time in the United States, the relationship between society and the professions is reflected in three differing viewpoints: functionalist, conflict, and critical. The functionalist viewpoint is generally positive about the place of the profession in society. Under this viewpoint, the purpose of continuing professional education is to assist professionals in improving their knowledge, competence, or performance. As a result, higher quality services will be provided to clients. The conflict viewpoint discussed by Cervero argues that quality of professional services cannot be assessed on technical expertise alone. This view "asserts that professionals are in conflict with other groups in society for power, status, and money" (Cervero, 1989, p. 518). Consequently, this viewpoint argues that continuing professional education should be at the social-structural level, not the individual level. Finally, Cervero presents a view of the critical viewpoint that argues that it is not desirable to have a consensus regarding professional quality. This viewpoint indicates the professions cannot be understood independent of their relationship to the larger society. As he describes it, "the purpose of continuing professional education is to help professionals understand the ethical and political, as well as the technical, dimensions of their work" (p. 519).

Houle (1980) indicates that mandatory continuing professional education is often the alternative selected by legislative and administrative entities to

address the issue of public reliance on professionals. The alternative of re-credentialing has received significant resistance from professionals themselves.

Certified public accountants (CPAs) are one group of professionals that have a high level of responsibility in society. The financial statements and reports that they prepare are relied upon by individuals (clients, creditors, investors, and other third parties) who may find themselves legally liable if the reports are incorrect. As a result, mandatory professional education within the accounting profession is intended not only to protect the interest of the CPA's clients, but also the interests of the public at large.

CPAs are licensed in all 50 states, the District of Columbia, Guam, Puerto Rico, and the U.S. Virgin Islands. Each of these 54 jurisdictions restricts the use of the title "certified public accountant" to individuals registered with the state regulatory authority. These state authorities enforce the laws set forth by their state legislatures (or equivalent public authority), including continuing professional education requirements for licensure. As can be seen in Appendix A, 52 of the 54 jurisdictions require continuing professional education for CPAs. Only the Virgin Islands and Wisconsin have no continuing professional education requirements for individuals using the CPA title (AICPA & NASBA, 1998).

That the field recognizes the importance of this requirement is revealed in the American Institute of Certified Public Accountants' (AICPA) "Position Paper on Mandatory Continuing Professional Education for the Accounting Profession" (AICPA, 1985). That paper states that mandatory continuing professional education is intended to provide a measure of assurance to third parties that CPAs are maintaining their competence. Furthermore, the AICPA Continuing Professional Education Standards Subcommittee institutionalized this position in 1995 when they stated their vision "to create a system of

continuing professional education to help CPAs effectively plan their careers, build on needed competencies, and protect the interest of the public" (AICPA, 1997, p. 1).

One challenge to this vision is the reality that a CPA's usefulness to the public is consistently faced with the threat of obsolescence due to the phenomenal growth rate of new knowledge and information relevant to the accounting field. In accounting, the half-life of knowledge is only five years. That is, after five years only 50% of a given body of acquired knowledge is usable (Dubin, 1990). Combining the consequences of such a short knowledge half-life with the importance of CPAs' societal responsibilities has resulted in a requirement by the AICPA and 52 of the 54 State Boards of Accountancy to require that CPAs complete an average of 40 hours of continuing professional education per year (AICPA & NASBA, 1998).

At the current time, an individual using the CPA designation in the state of Georgia must completed 80 hours of continuing professional education preceding each biennial permit renewal. An additional stipulation in the state law requires sixteen of those hours to be in accounting and auditing subjects. Also a minimum of 20 continuing professional education hours must be earned each year (Georgia State Board of Accountancy, 1999).

In addition to state law, federal law dictates continuing professional education requirements for CPAs involved with audits concerning federal funding. Any CPA involved in (a) audits of federal organizations, programs, activities and functions; (b) audits of state and local governments, hospitals, nonprofits, colleges and universities that receive federal financial assistance; or (c) an audit contract that requires a "yellow book" audit must complete continuing professional education requirements dictated by the General Accounting Office. A total of 80 hours is required for a two-year period and 24

of those hours must be in governmental subjects. A minimum of 20 hours per year is required (United States General Accounting Office, 1991). Any CPA in the state of Georgia involved in audit work described above would be required to complete these continuing professional education requirements to participate in the audit.

While state boards of accountancy—or an equivalent public authority—administers the continuing professional education requirement for CPAs for purposes of relicensure and the federal government dictates continuing professional education requirements for participation in government related audits, professional accounting organizations also have policies in reference to continuing professional education. The AICPA requires CPAs in public practice to complete 120 hours per every three-year period with a minimum of 20 hours per year. For CPAs in non-public practice, the AICPA requires 90 hours every three-year period with a minimum of 15 hours per year. A CPA in the state of Georgia electing to belong to the AICPA would need to complete these continuing professional education requirements in order to maintain their membership in the organization. Approximately 80% of Georgia CPAs maintain membership in the AICPA (Georgia Society of Certified Public Accountants, 1999).

In addition to the national professional accounting organization, a CPA in the state of Georgia who elects to belong to the Georgia Society of Certified Public Accountants (Georgia Society of CPAs) must complete the continuing professional education requirements for membership retention set forth in the society's bylaws. These include the completion of 120 hours every three-year period with a minimum of 20 hours per year (Georgia Society of Certified Public Accountants, 1995). While membership is not mandatory, approximately 80% of the CPAs in the state of Georgia are members of the Georgia Society of CPAs

(Georgia Society of Certified Public Accountants, 1999). A summary of the continuing professional education requirements for CPAs in the state of Georgia is presented in Table 1.

Table 1

CPE Requirements for Certified Public Accountants in Georgia

Organization	Purpose of CPE	Reporting period[a]	Hours required	Yearly minimum	Notes
Georgia State Board of Accountancy	Re-licensure	1/1/98 - 12/31/99	80 hours	20 hours	16 of the 80 hours must be in Accounting and Auditing subjects
General Accounting Office Yellow Book	Participation in audit concerning federal funds	1/1/97 – 12/31/98	80 hours	20 hours	24 of the 80 hours must be in Government subjects
American Institute of Certified Public Accountants	Membership in national professional organization	1/1/96 – 12/31/98	120 hours ——— 90 hours	20 hours ——— 15 hours	Public practice ——— Non-Public practice
Georgia Society of Certified Public Accountants	Membership in state professional organization	1/1/96 – 12/31/98	120 hours	20 hours	

[a]Reporting period coinciding with data collection

Not surprisingly, given the significant investment of time and resources that such a requirement involves, the greatest deterrent to pursuing mandatory or additional continuing professional education is the professional adult learners' inability to allocate time for education activities (Queeney, 1995). This is also the case in other adult education arenas (Darkenwald & Merriam, 1982; Scanlan, 1986; Valentine & Darkenwald, 1990). As a result, independent study

options including correspondence courses, satellite, teleconferencing, compressed video, cable television, interactive computer, and other distance learning modes have come to be seen as attractive alternatives to traditional classroom-bound training (Verduin J. R. & Clark, 1991).

These technology-mediated options are available because at the end of the twentieth century, the academic environment is increasingly dominated by the convergence of multimedia and networking. Within this emerging technology, the World Wide Web (the Web) has proven to be a valuable tool for augmenting traditional education. The Web is capable of connecting learners to an enormous fund of information and multimedia learning materials (Simoff & Maher, 1997). As a result, the option of utilizing Web-based training—that is, taking advantage of multimedia and computer networking to mediate and support instruction when teachers and learners are separated in place and/or time (Simoff & Maher, 1997)—as a means of accommodating mandatory continuing education requirements is becoming increasingly available to CPAs (Carlozzi, 1998; Nacinovich, 1998). One of the primary benefits of this type of training is obvious: Participants have the option of completing their continuing professional education requirements without having to take valuable time away from work. Web-based training gives control of scheduling and pacing of learning to the consumer and eliminates travel time. This allows a CPA to better fit continuing education into his or her professional schedule. Nonetheless, CPAs have not yet acted to take advantage of the new technology. It is probable that accountants are still in the process of deciding if this innovation is a desirable alternative for continuing professional education.

Statement of the Problem

Although continuing education opportunities using Web-based training are proliferating, the current utilization of these opportunities by certified public

accountants appears to be limited (Nacinovich, 1998). A study conducted for the Georgia Society of Certified Public Accountants by Perdue and Valentine (1998) found that respondents believe distance education, including use of the Internet, is an effective way to learn. In addition, the study found that the vast majority of respondents reported having adequate access to the technology necessary for participation in a variety of distance education activities. However, with the exception of text-based distance education, the percentage of respondents actually *using* distance education for continuing professional education was minimal.

Research concerning continuing education via distance education is in its early stages, consisting primarily of a few descriptive studies of multiple professional groups (Grundnoski, 1992; Scalter, 1990) conducted before the Web became popular as an education medium. As a result, there is little documented research concerning the use of Web-based education by professional groups. There is even less information in the literature concerning deterrents to that use. Because a variety of organizations, including state and national professional associations, public education institutions, and private educational organizations, are beginning to investigate developing Web-based courses for accountants (Carlozzi, 1998; Khan, 1997a; Nacinovich, 1998), the need to fill this gap in the literature is a timely one. If Web-based education is to fulfill its true potential, program planners need to know the reasons that certified public accountants have for not participating in this form of distance learning.

Purpose of the Study

The purpose of this study was to identify deterrents to participation in Web-based continuing professional education for certified public accountants. The central questions explored in this study will be:

1. What is the relative importance of deterrents to participation in Web-based continuing professional education for certified public accountants in Georgia?
2. Can individual deterrents be reduced to a more parsimonious framework through factor analysis?
3. To what extent are personal and professional variables related to derived deterrent factors?

Significance of the Study

Prior research in the field of adult education provides empirical support for the inclusion of deterrents into theories of participation in adult education (Cross, 1981; Darkenwald & Merriam, 1982; Scanlan & Darkenwald, 1984; Valentine & Darkenwald, 1990). There is, however, little or no literature concerning the deterrents to Web-based distance education, specifically with respect to Web-based continuing professional education. This study addresses that gap. It will provide adult education and distance education scholars with empirical data delineating the deterrents to participation in Web-based continuing professional education by adult learners as well as providing empirical data on the factors which underlie those deterrents.

This study will also provide significant practical value for continuing professional education program planners and educators. Once deterrents to Web-based learning are identified, this data can be used to modify the impact of some of those deterrents on continuing professional education program participation by CPAs. Ultimately, by addressing the deterrents to Web-based learning, continuing professional education program planners and educators may be able to broaden the scope of effective learning experiences available to accounting professionals.

The government regulators responsible for certifying CPAs may also benefit, albeit indirectly, from the proposed study. Given the decreasing useful life of accounting technical information as well as the increasing rate of change in the professional environment for CPAs, any analysis of deterrents to participation in continuing professional education that leads to improvements in that participation may ultimately have a positive effect on the timeliness of knowledge among practicing accountants. This has the potential for translating into higher public satisfaction and greater public trust in the regulatory process.

Finally, the proposed study also has significance to individual CPAs and to the people that they serve. If those deterrents to Web-based continuing professional education that have education solutions are effectively addressed, many CPAs may find themselves in the position of being able to engage in continuing education opportunities above and beyond that mandated by law or to reduce resource expenditures required to participate. If this were to happen, the greatest significance of the proposed study might be that it has the potential to begin a process that increases the value of assistance that certified public accountants are capable of providing to their affected public.

Definitions

The following terms are defined in relationship to how they are used in the study.

Certified Public Accountants: Certified Public Accountant is the professional title chosen in 1894 by a joint committee of 14 members from the Institute of Accountants, the American Association of Public Accountants, now the American Institute of Public Accountants, and a group of public accountants not belonging to either organization (Chatfield & Vangermeersch, 1996). This study is restricted to certified public accountants in the State of Georgia. The certificate of "certified public accountant" is granted by the Georgia State Board

of Accountancy to those individuals who (a) have attained the age of 18; (b) have, in the opinion of the board, good moral character; (c) have meet the education and experience requirements required by the State of Georgia; and (d) have passed a written or oral examination as the board deems appropriate (Georgia State Board of Accountancy, 1999).

Continuing Professional Education: Continuing professional education is education required annually of certified public accountants in order to satisfy state requirements. Successful completion of continuing professional education requirements is necessary to retain a state-issued certificate to practice. The American Institute of Certified Public Accountants (AICPA & NASBA, 1998) states that continuing professional education can include "self study, teaching, lecturing and presentations, publication of articles, monographs and books, participation in workshops, seminars, conferences, professional meetings and similar activities, and formal courses provided by colleges, universities, professional associations, and software and hardware vendors" (AICPA & NASBA, 1998, p. 1).

Deterrent: A deterrent to participation is a factor contributing to an adult's decision not to engage in learning activities. As Scanlan (1986)states,

> (1) Deterrents is a multidimensional concept encompassing clusters of variables; (2) these variables are influenced by the prospective learners' perceptions of their magnitude; and (3) the impact of these variables on behavior varies according to individual characteristics and life circumstances. (p. ix)

Web-based Education: Web-based education is the use of multimedia and computer networking to mediate and support instruction when teachers and learners are separated in place and/or time (Simoff & Maher, 1997).

CHAPTER II

REVIEW OF THE LITERATURE

The purpose of this chapter is to review the literature on issues related to deterrents to participation in Web-based continuing professional education for certified public accountants. This review will encompass the following five areas: continuing professional education, education for certified public accountants, distance education, Web-based education, and participation theory.

Resources were gathered for this review using a computer-based literature search of the Educational Resources Information Center (ERIC), the Dissertation Abstracts International, the University of Georgia's GALIN on-line system, and the on-line libraries of The Pennsylvania State University and the University of Wisconsin at Madison. Descriptors used to guide the searches included distance education, Web-based education, continuing education, continuing professional education, deterrents, barriers, accountants, and certified public accountants.

Continuing Professional Education

The relevant literature on continuing professional education may be organized into two sections, the historic development of professionals and the professions and the current purpose and practice of continuing professional education.

The History of Professionals and the Professions

The process of defining what is meant by a "profession" has enjoyed a lengthy, controversial history. Cervero (1988) has identified three approaches in the literature for defining what does and does not constitute a profession. The

static definitional approach involves developing a set of universal, objective standards against which the characteristics of a given occupation seeking professionalization could be measured. The significant problem with this approach has been the inability to achieve consensus on what those standards should be. Consequently, this is considered an antiquated approach (Friedson, 1986) and is no longer used to survey professions.

Unlike the static approach (Cervero, 1988), the *process* approach does not take an absolutist stance on definitional standards but, instead, views all occupations as existing at varying points along an open-ended continuum (Vollmer & Mills, 1966). As the name implies, occupations are understood to be capable of undergoing a process of becoming more or less professional over time but there is no absolute point at which an occupation may be said to have achieved perfect professionalism.

Cervero (1988) indicates that the *socio-economic* approach takes a completely separate tack, locating the power to define what characteristics constitute a profession within, rather than outside of society. In doing this, the socio-economic approach addresses an issue that both the process and static approaches ignore; that is, the role that power relationships play between the professions and society. In the socio-economic approach, society is the sole determinant of which occupations should be granted the status and privileges of a profession (Becker, 1962; Friedson, 1986).

Depending on whether one is interpreting census categories broadly or restrictively, there are currently somewhere between 18 and 32 million professionals in the United States (Bureau of Labor Statistics, 1999). One reason for the wide disparity in these figures is that determining just who should be considered a professional is only slightly less complex than determining what constitutes a profession. According to the Second College Edition of the

American Heritage Dictionary (Berube, 1985), a professional is a person following a profession or one who has an assured competence in a particular field or occupation. These definitions reveal a socio-economic slant on the topic. Individuals are professionals not by virtue of having met some pure standard but because society has sanctioned them as such, either through recognizing their affiliation with an accredited profession, paying them for services rendered, or acknowledging their expertise in a field.

In the current period of history state governments reserve for themselves society's power to grant professional status to individuals through the process of regulating access to the professions. This convention is visible in the adjectives "registered," "licensed," and "certified" used by the state to describe professionals. These adjectives are not interchangeable; each has a slightly different connotation depending on perceived expertise in a given field. For instance, in *registering* an individual to work in a profession, the state makes no assurance about the individual's competence to perform that occupation. Accordingly, this professional status is only granted legitimacy when the threat to the public health, safety, or welfare from using a particular service is considered to be minimal (Shimberg, 1982). In contrast, the U.S. Department of Health, Education and Welfare defined *licensing* in 1977 as,

> the process by which an agency of government grants permission to an individual to engage in a given occupation upon finding that the applicant has attained the minimal degree of competency necessary to ensure that the public health, safety, and welfare will be reasonably well protected. (Shimberg, 1982, p. 15)

Prerequisites usually required before an applicant is allowed to take a licensing examination include education, experience, minimum age, residency, and evidence of good moral character. Examples of individuals typically classified as

licensed include accountants, architects, electricians, pharmacists, and physicians.

As Shimberg (1982) notes, *certification* connotes an even higher perceived degree of competency. To be certified to practice an occupation means that a governmental or nongovernmental agency or association has granted the authority for a licensed individual to publicly acknowledge their mastery of a profession as measured by state-established qualifications. Registered or licensed individuals are not necessarily prohibited from engaging in regulated occupations, but they may not represent themselves to the public as certified until granted that privilege by the state. In short, individuals are registered to *perform* a job, licensed to *perform a job competently*, and certified to *be* competent in all aspects of that job.

Accounting is one example of a regulated profession in which both licensed and certified professionals are granted professional status, albeit in different degrees. While licensed individuals may legally work as accountants, only those who have gone beyond the minimum competencies demanded of licensing to meet the states' stringent standards of mastery are privileged to use the title "Certified Public Accountant" when advertising and engaging in work related to accounting (AICPA & NASBA, 1998).

The current status of the state as regulator has historic roots. In analyzing the rise of professionalism, Larson (1979) has concluded that throughout history the state has played a vital role in the creation of the professional market. Her research identified three steps that occurred in the modern organization of professional work. First, the outcomes of a professional service had to become recognizable by society. The problem is that most professions produce intangible goods. So if professionals were to become accepted as the producer of a valuable commodity, society first had to be socialized to recognize the results

of professional labor—that is, professionals' intangible goods—as potentially valuable commodities.

In the second step toward professionalization, professional services had to come to be perceived by the public as superior to nonprofessional ones (Larson, 1979). This meant that professional services had to be standardized. Standardization creates a basis of evaluation by consumers and allows individual providers to clearly differentiate their identity from other producers of similar services. Historically, this stage of the process received a boost once service providers began to seek state protection. By establishing licensing standards that controlled training and entry into the market, the state was free to enforce penalties against unlicensed providers; simultaneously reducing competition and raising the public's expectation that licensed providers produced superior service.

The final stage in the establishment of a professional market was to institutionalize the state as the sole creator of competence. By reserving for itself the authority to conduct licensing and qualifying examinations, the state also reserved for itself determination of the knowledge base each profession could claim as distinctively its own (Larson, 1979). Furthermore, when the state initiated regulatory control over would-be professionals' pre-service education, it essentially established a supervisory monopoly on the specific tools and techniques of the emerging professions (Larson, 1979).

The Purpose of Continuing Professional Education

Once established, the professions have sought to maintain their status in society by encouraging individuals affiliated with the professions to stay abreast of changes in the field (Cervero, 1988). In some cases this suggestion has achieved the force of law. In the field of accounting, for instance, the state has gone beyond suggesting that accounting professionals remain current in their

knowledge base to mandating that those professionals *must* continue their education even after becoming licensed or certified.

There has been much debate as to the actual purpose of the state's enforcement of mandatory continuing professional education (Streer, Clark, & Holt, 1995). Is it a means of quality assurance as intended by the state or does it simply result in driving up the cost of services that professionals offer? Likewise, are the administrative agencies responsible for monitoring continuing professional education supposed to be first and foremost representing the public's interests or those of the professionals they are charged with supervising (Cervero, 1988; Cervero & Scanlan, 1985; Larson, 1979; Shimberg, 1982)?

As far as a given profession's state association is concerned, there are frequently several reasons to support the concept of mandatory continuing education (Darkenwald & Merriam, 1982). First, professional associations like it because the associations' members like it. If perception of continued competence is necessary to maintaining the publics' positive opinion and confidence, many professionals would rather provide that assurance by being known to engage in continuing education activities than by having to undergo periodic reexamination for license renewal or specialty recertification (Darkenwald & Merriam, 1982). Second, professional associations like continuing professional education because it helps to raise their profile in society. For instance, while the reexamination process is almost always controlled by a governmental administrative board, continuing professional education activities frequently fall within an associations' realm. This places the association in ongoing contact with practicing professionals, including those who do not formally belong to the organization, provides them with an opportunity to appear publicly supportive of their constituents' responsibility to

the public good, and gives them a chance to generate revenue through the assessment of fees for continuing professional education activities.

Individual professionals may also support continuing professional education. Human nature being what it is, making continuing professional education mandatory may be necessary before some individuals can justify taking scarce time away from work to engage in continuing education activities. Although little empirical evidence has been reported about the success of continuing professional education in improving professional competence (Queeney & English, 1994; Streer et al., 1995), state governments and professional associations routinely make the argument that continuing professional education will improve occupational proficiency. Consequently, an individual whose sincere desire to improve his or her professional competence is in conflict with pressures to avoid unnecessary time and monetary expenditures may be empowered by the state's mandate for continuing professional education to justify their commitment to engaging in ongoing professional education.

The general public's support of continuing professional education stems from a growing demand for professional accountability. As the public has come to expect higher and higher levels of professional competence, the use of mandatory continuing professional education is one quantifiable manner by which the state can assist professionals in reassuring the public that they are up-to-date in their knowledge base (AICPA & NASBA, 1998). And, in an era of fiscal conservatism, the argument that continuing professional education provides a means of quality assurance without the expenditure of state funds is an extremely attractive one to service consumers. There are two basic flaws in these arguments however. As stated above, there is little evidence to support the belief that continuing professional education will improve performance (Holt, Streer, & Clark, 1992; Streer et al., 1995). Second, continuing professional education

costs incurred by professionals are almost always passed along to consumers, resulting in little to no net savings for individual service users (Cervero, 1988; Nowlen, 1988; Shimberg, 1982).

Education for Certified Public Accountants

The literature on mandatory continuing professional education and other issues related to education for certified public accountants will be organized into three sections: a history of the accounting profession, pre-service education for CPAs, and continuing education for CPAs.

Historical Perspective of the Accounting Profession

A brief examination of how the profession of accounting developed in the United States will help clarify why accounting education is handled the way that it is. In a review of the 100-year history of accounting education, Langenderfer (1987) identified at least four factors that have had an impact on the development of pre-service and continuing education for accountants. These factors include the role that education plays within the accounting profession, the role that professional organizations play within the accounting profession, the role that faculty selection and reward systems play within accounting education, and the role that accounting faculty play within the educational hierarchy.

Although the American Association of Professional Accountants (AAPA) opened the nation's first professional school of accountancy in the 1890s, the school failed, probably due to the lack of a sufficiently developed independent body of knowledge. This failure set the stage for defining the realm of accounting education. While the legal and medical professionals endorsed education in separate schools, the accounting profession failed to pursue that concept, instead settling for legal recognition of the Certified Public Accountant (CPA) designation. As a result, the study of accounting became an integral part

of the undergraduate business school curriculum instead of an independent field of study (Langenderfer, 1987).

According to Langenderfer (1987), three additional factors have affected the accounting profession: the role of professional organizations within the accounting profession, the academic faculty selection and reward system, and the relative lack of power among accounting faculty in pre-service education. Historically the profession has been narrowly defined, primarily oriented to the audit function and represented by the American Institute of Certified Public Accountants (AICPA). The AICPA has been successful at presenting a united front and limiting federal government intervention. They have done so through the creation of authoritative committees designed to promote higher standards. Unfortunately these committees have failed to include the diverse interests of other accounting professionals, such as those in management accounting and education. As a result, the narrowly represented interests of the profession, pose a significant barrier to convincing society that there is a real need for professional schools and programs of accounting.

A third factor affecting the development of the accounting profession has been the faculty selection and reward system. Accounting educators frequently view their primary concerns to be meeting the tenure and promotion requirements of the business school in which they are employed. These requirements may emphasize research and writing oriented to theoretical models over the practical application of accounting principles. Furthermore, unlike the legal and medical professions, there is no requirement that accounting faculty have significant experience as practitioners of accounting in order to join an academic faculty. Neither is there a requirement that faculty participate in continuing professional education unless that participation is required to maintain licensure status as a CPA. The faculty selection and reward

system, then, supports a gap of relevance between accounting faculty and practitioners of accounting and may provide no incentive for academicians to advocate for professional schools and programs of accounting.

The final factor affecting the accounting profession relates to the relative lack of power among accounting faculty in pre-service education. In contrast to the accounting arena, both medicine and law have undergone research studies of their educational processes by highly respected individuals or organizations that were independent of the professions. The Flexner Report, sponsored by the Carnegie Corporation in the early 1900s, effectively strengthened the power of physicians in medical education by changing the training process of medical students from one solely based on lectures to one principally based in laboratories and hospital wards. Likewise, a report by the Carnegie Foundation led to more involvement by legal educators in modeling legal education. In contrast, evolution in the business arena (Langenderfer, 1987) has led to the dominance of MBA programs in business schools with an associated decline in the power that accounting faculties hold, making it even more difficult to professionalize the accounting curriculum.

These four factors have combined to inhibit the accounting profession from achieving its goal of creating a network of independent, professional schools of accounting that mirror those of law and medicine. An inability to capitalize on the professionalization movement in the 1890s has left the accounting profession to grapple with a fragmented structure, lack of societal support, and lack of political consensus or power among professional accountants and educators (Langenderfer, 1987).

Pre-service Education for Certified Public Accountants

Recently, policy makers in the accounting profession have begun to publicly debate the issue of professionalizing pre-service education for CPAs. In

a first step in that direction, the AICPA web site (AICPA Online, 1999a) is currently publishing background information defending a position that the education requirement for CPAs should be increased to 150 semester hours of education, including a baccalaureate degree and accounting concentration. This appears to be a popular position among policymakers. In addition to the AICPA, the National Association of State Boards of Accountancy (NASBA), the American Accounting Association (AAA) and the Federation of Schools of Accountancy (FSA) all support upgrading the pre-service educational requirement for CPAs, and 44 jurisdictions have already passed legislation or regulations that would mandate the "150 hour requirement." In its Web site, AICPA gives three reasons for supporting upgraded education (AICPA & NASBA, 1998). These include reaffirming the public's trust through improved quality of work, preparing CPAs for the continuing expansion of international business through increased technical competence, and providing CPAs with more than technical knowledge of their profession through the provision of a complete education.

The last reason appears to be in response to a general acknowledgement that pre-service education for CPAs has traditionally emphasized the mastery of technical material over acquiring skills in information development and communication. In most programs, courses are neatly compartmentalized into areas of financial accounting, auditing, law, and tax, while undergraduate evaluation tools emphasize "getting the right answer." This traditional view also dominates the evaluation method currently utilized at the end of pre-service education, the CPA Examination. Preparation of the CPA Exam is the responsibility of the Board of Examiners of the AICPA. Questions selected for the exam are designed to test the candidate's technical competence in the areas being examined: practice, theory, audit, and law. Exam questions draw heavily

from statement, opinions, and standards issued by authoritative bodies such as the Accounting Principles Board, Financial Accounting Standards Board, Auditing Standards Board, and other committees designated by the AICPA to issue authoritative pronouncements. Questions also cover topics related to federal income tax law, the Uniform Commercial Code, Code of Professional Conduct, and current literature dealing with recent developments in the professional practice of public accounting. The scoring of the CPA exam is uniform for all candidates regardless of their state of residency (AICPA & NASBA, 1998).

The requirements for admission to membership in the AICPA also has a potential impact on pre-service education for CPAs. As stated in their bylaws, to qualify for admission to membership in the AICPA, one must:

- possess a valid and unrevoked CPA certificate issued by the legally constituted authorities of the states, the District of Columbia, territories, or territorial possessions of the United States;
- have passed an examination in accounting and other related subjects satisfactory to the AICPA Board of Directors, which the board has resolved is the Uniform CPA Examination;
- practice in a firm enrolled in Institute approved practice monitoring programs as long as one is engaged in public accounting as a proprietor, partner, or shareholder, or as an employee who has been licensed as a CPA for more than two years;
- agree to abide by the AICPA Bylaws and the Code of Professional Conduct. (AICPA Online, 1999b)

Continuing Education for Certified Public Accountants

The history of continuing professional education in the accounting profession was documented in the centennial issue of the *Journal of Accountancy* (Schlosser, Lee, & Rabito, 1987). Three distinct periods in the history of continuing professional education may be identified: the informal period, the formal period, and the mandatory continuing professional education

period. Collectively, these three eras trace the development of continuing professional education from its beginning in the accounting profession to its current status.

The informal period is considered by Schlosser, Lee, and Rabito (1987) to begin in 1905. In that year the American Association of Public Accountants (AAPA) was first organized, marking the genesis of the first national professional accounting association. As the forerunner of the AICPA, one of the AAPA's critical goals was the establishment of a higher level of professionalism through education. As a means to that end, they undertook to publish the first national professional journal targeting the accounting profession, a periodical that would eventually become the *Journal of Accountancy* (Schlosser et al., 1987).

The formal period in professional education for accountants began in 1954 when the AICPA first formalized its goal of professional education with the creation of an AICPA education division. While not requiring their participation, the AICPA worked to collaborate with state accounting societies to sponsor continuing professional education programs for members. The societies' formal participation in continuing professional education marked the first time that national and state professional associations had worked together as participation advocates and providers of continuing professional education programs (Schlosser et al., 1987).

The mandatory continuing professional education period may be thought of as beginning in 1967 when the then AICPA President suggested that accounting professionals should be required to engage in some minimum amount of continuing professional education. Four years later, in 1971, the AICPA council passed a resolution recommending that all state boards of accountancy require continuing professional education for relicensure

(Schlosser et al., 1987). Over the next 20 years, 52 of the 54 legal jurisdictions that issue CPA licenses began to mandate continuing professional education for relicensure (Streer et al., 1995) and in 1988, the AICPA approved a plan to restructure professional standards that included a mandatory continuing professional education requirement for all members of the AICPA regardless of their arena of employment (Hope, 1994).

The mandating of compulsory continuing education for CPAs—and the attendant expected windfall of new customers—almost immediately spurred continuing professional education providers to evaluate advancements in education delivery. Three of these studies have applicability to this research. First, a study of Ohio CPAs by Kreiser, Baird, and Michenzi (1989) suggested that accountants have a preference for live interactive courses and significant concerns with respect to cost containment and the available variety of continuing professional education topics.

Three years later Seay and Watson (1992) conducted a telephone survey of the AICPA, the National Association of Accountants (now the Institute of Management Accountants), and the Institute of Internal Auditors. At that time none of these professional organizations had current or future plans to offer continuing professional education via satellite or two-way interactive television, technologies which were then becoming popular. Although they were able to identify one firm that averaged two to three satellite continuing professional education courses per year in conjunction with several state CPA societies, concerns about costs, logistics, and uncertainty about a new approach were the reasons most frequently cited for not pursuing delivery of continuing professional education via telecommunication.

Finally, a recent study by Ernst & Young (Kahan, 1997) found that continuing professional education delivered via the Internet, audio and video

tapes, and CD-ROM has been favorably received. Practitioners taking courses on interactive, multimedia continuing professional education products performed far better on-the-job than those attending seminars and conferences and were able to finish their work at a faster pace. Thus it would seem that time has brought about changes in providers' attitudes about what constitutes "appropriate" and "preferred" education technology. Increases in perceived demand and demonstrated favorable outcomes based on the new technologies have finally led the AICPA to enter the technology delivery arena for continuing professional education. They currently offer 5 CD-ROM courses and are unveiling two multimedia tax courses on-line. Many state societies are also evaluating the Internet as a delivery mechanisms for their continuing professional education courses (Nacinovich, 1998).

The current status of continuing professional education for CPAs reflects the negotiation of a multitude of stakeholders. The needs of government regulatory bodies, professional associations, the general public, educators, and the members of the profession converge in establishing and providing continuing professional education requirements (AICPA & NASBA, 1998). The reasons for, and magnitude of, these requirements are varied. However, there are generalities that apply.

The International Federation of Accountants (IFAC) is an association comprised of national professional accountancy organizations. The IFAC represents accountants employed in public practice, business and industry, the public sector and education, as well as some specialized groups that interface frequently with the profession. Currently, it has 140 member bodies in 101 countries, representing two million accountants. Their broad objective is "the development and enhancement of a coordinated worldwide accountancy profession with harmonized standards" (International Federation of

Accountants, 1997, par. 6). The importance of a life-long education is stated in the IFAC Code of Ethics for Professional Accountants as "a continuing duty to maintain knowledge and skill at a level required to ensure that a client or employer receives the advantage of competent professional service based on up-to-date developments in practice, legislation and techniques" (International Federation of Accountants, 1990, p. 8).

In their April, 1997, "Exposure Draft of Proposed International Education Guidelines for Continuing Professional Education" (International Federation of Accountants, 1997), the IFAC stated three objectives of a continuing professional education program. The first addresses the need to "maintain and improve the technical knowledge and professional skills" (par. 10). In the rapidly changing and increasingly complex environment in which professional accountants must operate, significant changes are occurring in accounting and auditing standards, tax systems and rules, as well as in legislation and regulation that impact both the profession and the entities the profession serves. The IFAC sees these changes as dictating the need for continuing professional education in order to acquire increased knowledge requirements.

The second objective stated in the IFAC Exposure Draft is to "assist members of the profession to apply new techniques, to understand economic developments and evaluate their impact on their clients or employers and on their own work, and to meet changing responsibilities and expectations" (par. 10b). The accounting profession is faced with meeting increased public expectations. Global economic factors are expanding the arena of accounting to include the worldwide economy. This expands the roles and responsibilities of accountants in public, private and governmental entities. Clients and employers expect accountants to advise them about the impact of changes in economic and

business environments. The IFAC document asserts that required continuing professional education programs should go beyond basic technical knowledge.

The final objective for continuing professional education programs as viewed by the IFAC is to "provide reasonable assurance to society at large that members of the profession have the technical knowledge and professional skills required to perform the services they undertake to provide" (par. 10c). While recognizing that continuing professional education alone will not guarantee professional service of high quality, the IFAC also recognizes that the application of knowledge with professional judgment in an actual work environment is a reasonable indicator of professional competence. As such, the IFAC views the role of continuing professional education to be one of providing accountants with exposure to an ever changing knowledge base. This is, by necessity, the first step that education must take if accountants are to continue providing high quality service in a rapidly changing environment.

In striving to facilitate the delivery of high quality service by CPAs, the IFAC (International Federation of Accountants, 1997) recommends that each member body independently establish minimum mandatory continuing professional education requirements for their members. Their recommendation suggests that,

> each member who is active as an accounting professional should participate in a minimum of 30 hours per year, or a minimum of 90 hours in every three-year period, of structured learning activity, whether compliance with that norm is voluntary or mandatory. (par. 20)

While not binding on member organizations, the recommendation for mandatory continuing professional education establishes the official stance of the international professional organization for the accounting profession.

One of these member organizations is the American Institute of Certified Public Accountants. The AICPA is the national professional organization

representing all certified public accountants in the United States. It currently has over 330,000 members. As of December, 1998, the percentage breakout of members was 43.7% in industry, 39.4% in public practice, 2.4% in education, 4.3% in government, and 10.2% miscellaneous or retired (AICPA Online, 1999c).

The AICPA Bylaws address the requirements for retention of membership. These requirements state that effective January 1, 1993, in order to retain membership in the AICPA,

- a member in public practice for each three year reporting period shall complete 120 hours of continuing professional education with a minimum of 20 hours each year;
- a member not engaged in public practice shall, during the three year period following January 1, 1993, complete 90 hours of continuing professional education with a minimum of 15 hours in each year. (AICPA Online, 1999b)

Within the above requirements, the AICPA defers the content and format of continuing professional education to the various state licensing boards or professional societies as long as the minimum number of hours is satisfied. The AICPA (1997) does state that,

> [Continuing professional education] can include self study, teaching, lecturing and presentations, publication of articles, monographs and books, participation in workshops, seminars, conferences, professional meetings and similar activities, and formal courses provided by colleges, universities, professional associations, and software and hardware vendors. (p. 1)

In addition, a February, 1997, report by the Continuing Professional Education Committee (AICPA, 1997) strongly recommended implementation of an outcomes-based measurement system of continuing professional education that defines the competencies that are relevant to the types of services offered by the CPA.

Continuing Professional Education for Certified Public Accountants in Georgia

Like certified public accountants in many states and territories, CPAs in the State of Georgia have a multitude of continuing professional education requirements dictated to them. These requirements are set forth by stakeholders involved in attempting to insure the competency of the individuals conducting work as a CPA. Included in these stakeholders are the State of Georgia, the General Accounting Office of the federal government, the American Institute of Certified Public Accountants, and the Georgia Society of Certified Public Accountants (Georgia Society of CPAs).

The State of Georgia authorizes the State Board of Accountancy as the administrative agency to implement the law stating continuing professional education requirements for CPAs in Georgia. These education requirements must be fulfilled for purposes of relicensure. Currently, the State Board of Accountancy (1999) requires completion of 80 hours of education every two-year period. Sixteen of these 80 hours must be in the area of accounting and auditing and a minimum of 20 hours a year is required.

The State Board of Accountancy's guidelines indicate that the State of Georgia does not require prior approval of continuing professional education sponsors, courses, or programs in order for continuing professional education to be acceptable. According to the Georgia State Board of Accountancy (1999) Rules and Regulations, the overriding consideration in determining whether a specific program qualifies as acceptable continuing education is whether it is a formal program of learning which contributes directly to the professional competence of an individual licensed to practice as a CPA.

A CPA applying for a renewal permit to practice public accounting in the State of Georgia must provide a signed statement certifying, under penalty of perjury, that all applicable continuing education requirements have been met.

Records must be maintained confirming attendance at, and completion of, continuing education including (a) school, firm or organization conducting the program; (b) location of the program; (c) title of program or description of content; (d) program outline; (e) dates attended; (f) hours claimed; and (g) evidence of satisfactory completion. The Board will verify on a test basis information submitted by applicants (Georgia State Board of Accountancy, 1999).

For CPAs performing audits for any entity that receives federal funds, the federal General Accounting Organization requires completion of 80 hours of education every two-year period. This would apply to CPAs in the State of Georgia if they were performing these types of audits. Twenty-four of these 80 hours of continuing professional education must be in the area of governmental accounting. Also, a minimum of 20 hours a year is required (United States General Accounting Office, 1994).

Another continuing professional education requirement for Georgia CPAs is the educational requirement set forth by the American Institute of Certified Public Accountants. While membership in the AICPA is optional for CPAs, the AICPA is recognized as the national professional organization for CPAs. Previously only members in public practice were required to complete continuing professional education. However, an educational requirement for nonpublic practitioners was implemented in 1988 (Hope, 1994). To maintain membership in the AICPA, CPAs practicing in the public arena must complete 120 hours every three-year period with a minimum of 20 hours completed per year. Members in nonpublic arenas of practice must complete 90 hours every three-year period with a minimum of 15 hours completed per year (AICPA, 1997).

A fourth continuing professional education requirement for CPAs in the State of Georgia is that established by the Georgia Society of CPAs. Again, membership in this professional organization is optional. However, many of the CPAs in the State of Georgia are members and participate in the continuing professional education programs and courses offered by the Georgia Society of CPAs. The continuing professional education requirements for maintaining membership are completion of 120 hours of education with a minimum of 20 hours per year (Georgia Society of Certified Public Accountants, 1995). A summary of the continuing professional education requirements by the various stakeholders for CPAs in Georgia is provided in Table 1.

The accounting profession serves as a classic model of continuing professional education. Its current features have been dictated by the ongoing negotiation of what knowledge professionals should have. The stakeholders (Cervero, 1988) in this negotiation include at least five entities. These include, (a) accounting practitioners; (b) the state, which dictates that a certain amount of continuing professional education occur; (c) the accounting profession, which dictates the specific requirements for professional membership and lobbies for the current and future status of the profession; (d) continuing educators; and (e) influential individuals within the context in which CPAs practice. As time passes these five major stakeholders continue to negotiate their respective interests. The current result of their ongoing negotiations is a continuing educational system that is a continuation of pre-service education. For the most part, it is heavily didactic and emphasizes the update model (Nowlen, 1988).

Distance Education

The introduction of new communication technologies, evolution to a global knowledge-based economy, and societal changes have all been factors in the proliferation of distance education. While some form of distance education

takes place in all fifty states in this country and in over 120 additional countries around the world, technological, economic, and societal factors are converging to create a dynamic environment in which adult educators facilitate learning experiences through a multitude of modes (Thack, 1993; Watkins, 1989). This evolution is causing a paradigm shift in the manner in which adult learners, including CPAs, access continuing professional education. In examining this phenomena, the relevant literature will be organized into three sections: the past history of distance education, the present and future of distance education, and the future role of distance education in continuing professional education.

Historical Perspectives on Distance Education

The evolution of communication technology has clearly resulted in a shift in the conceptualization and delivery of distance education. Correspondence education, generally considered to be the first form of distance education (Garrison, 1989), utilized the mail system as its delivery mode. As such, the interaction between teacher and student was facilitated by, as well as limited by, the medium of print as delivered through the mail. Even though correspondence education incorporated a delayed form of communication between teacher and student, generating slow feedback and a sense of isolation that may have limited student motivation, it also provided the student with a number of advantages including independence of time and place, cost effectiveness, and increased access to knowledge resulting from the mass production of course materials. Unfortunately, correspondence education has frequently failed to address individual differences with regard to ability, level of knowledge, or learning style preferences. Thus, while this form of distance education allowed individual education, it did not create individualized education (Garrison, 1989).

With the advent of two-way electronic communications, a paradigm shift occurred in facilitating and supporting learning at a distance. The defining

characteristics of audio and visual teleconferencing include a group method of learning, regularity and immediacy of two-way communication, and small and widely dispersed target groups (Garrison, 1989). The ability to simulate a traditional classroom educational experience permitting live exchanges between teacher/student and student/student, irrespective of geographical distance, addressed many of the limitations of correspondence courses and changed the scope of distance education (Barker, Frisbie, & Patrick, 1989). But the medium's greatest strength is also its primary weakness. While an instructor could now interact directly with students using audio and visual capabilities, the element of distance must still be facilitated within the paradigm of the traditional classroom.

The newest technologies to enter the distance education arena have been digital in nature. As Miller (1992) notes, they range from,

> hypermedia programs, which allow the student to control how a body of information is explored, to large scale databases accessible through the Internet and other computer networks, to integrated data systems that, eventually, will allow individuals to "dial up" video programs, audio materials, data bases, software, etc., from home or work. (p. 2)

Of these digital technologies, the most significant factor facilitating the current generation of distance education is the World Wide Web (Web). As a worldwide system of computer-based services, the Web provides electronic mail for person-to-person communication, bulletin boards permitting broad communication among groups interested in a certain topic, information search capabilities for accessing libraries and databases of information through the world, and access to specialized computer programs (Heinich, Molenda, Russell, & Smaldino, 1996). The result is a simultaneous diversification and convergence of technologies that has acted as a valuable adjunct for traditional distance education.

The Present and Future of Distance Education

Multiple factors are affecting just how those technologies are being used in distance education. Two of those, a paradigmatic shift to distributed learning and the increasing globalization of the economy, are particularly appropriate to this research.

The creation of new media such as the Web and virtual reality have allowed a transformation of conventional distance education to an alternative instructional paradigm of distributed learning. That is, electronically-mediated education that connects learners with widely distributed educational resources. As Garrison (1989) puts it, the emergence of new communications and computer technology have allowed the focus to switch from distance education to education at a distance. Morrison (1996) states that distance education, already an accepted practice, is transitioning to distributed education with older forms of distance education such as correspondence courses and television being replaced by individualized access to worldwide resources through the use of the Internet. Alan Chute, managing partner of AT&T's Center for Excellence in Distance Learning, supports this view by defining distance learning as "a system and a process that connects learners with distributed resources" (Filipczak, 1995, p. 113). In agreement with Chute, this definition has been adopted officially by the American Council of Education (Filipczak, 1995).

Unlike conventional distance education, which replicated traditional classroom teaching across the barriers of time and distance, distributed learning is enabled by new media to allow for new types of messages and experiences. Dede (1996) proposes a conceptual framework of three new forms of expression shaping the emergence of distributed learning. The first of these are knowledge webs that are built on multimedia and hypermedia architectures and support the constructivist model of learning. Second are interactions in virtual

communities; based on capabilities from computer-supported cooperative learning, interactions in virtual communities complement face-to-face relationships with the conveniences of just-in-time, anyplace access to others. The third form suggested by Dede is the immersive experiences in shared synthetic environments. Supporting an analogical, case-based construction of knowledge, experiential simulation systems allow learners to try an approach and then reflect on why it did or did not work.

Predictably, one result of the increased use of distributed learning is a major shift from the traditional model of teacher as the exclusive source of information to teacher as just one of several resources available to learners. As the role of teaching is being transformed dramatically, so is the role of learning. Accounting journals are increasingly including short items aimed at on-line education (Learn while you surf, 1997; The growth of on-line courses, 1998) and researchers have begun to note that certified public accountants have access to learning opportunities that are different from forms of continuing professional education that they may be used to (Carlozzi, 1998; Kahan, 1997; Nacinovich, 1998).

Economic change is another significant factor affecting the future of distance education. The economic forces of the world have begun to flow easily across national borders to create a global economy (Naisbitt & Aburdene, 1990). Because of this easy flow and the movement of goods and money across borders however, it has allowed America to ship out its lower skilled jobs. As this occurs, the gap between American wages and those of their competitors in a global marketplace has grown from $8 to as much as $20 per hour (Boyett, 1995). Consequently, the American economy is moving away from the use of low skilled labor which may be purchased more cheaply in less developed nations toward the use of highly skilled knowledge workers who will create high value-adding

products and services. This transition will inevitably affect the American education system. Current projections imply that, if Americans are to meet the demands of an increasingly technologically oriented workplace, 75% of the workforce will need significant retraining in the next decade (Jamieson & O'Mara, 1991). Furthermore, predictions suggest that over half of the new jobs created in the future will require postsecondary education and training (Jamieson & O'Mara, 1991). Even if the passage of time reveals these predictions to be too liberal, it is still clear that a large portion of the American workforce will require extensive training and retraining in the years ahead and that distance education can play an important role in providing this training.

Distance education, then, is certain to find increasing application in the coming years. Population growth, social and economic demands for options in higher and continuing education, and increased requirements for professional and occupational certification will be the basis for the expansion. With the cost of education in all formats continuing to rise, competing options in education will have to demonstrate a competitive return on investment as well as comparative educational effectiveness. Accountability will thus become more central to consumers' choices for educational options, including both distance education and traditional education (Markowitz, 1990).

The Future of Professional Education

In the past, responsibility for education transitioned from private organizations to the state. In the future, this trend may reverse. Business organizations are becoming more actively involved in determining the content and format of education (Davis & Botkin, 1994). Business organizations are also becoming active participants in the formal delivery of education. There are over 1,600 corporate owned entities operating as educational institutions (Meister, 1998). Utilizing their in-house, cutting-edge knowledge, corporate universities

are increasingly willing to accept students outside their employee pool and increasingly able to grant traditional undergraduate and graduate degrees. For a would-be employee, the result is the acquisition of new skills, knowledge, and experience that better qualifies them for employment (Meister, 1998).

The U.S. Congress Office of Technology Assessment conducted a recent study suggesting that technological literacy will soon be required of a significant portion of the work force as applications of information technology are made in the workplace (Schutze, 1992). As the pace of technological change accelerates, therefore, competitive advantage will increasingly depend on an ability to adapt, to apply new technologies in the workplace, and to integrate human skills with the new technologies. Conversely, adaptation will become more difficult as product life and skill life become shorter and shorter (Carnevale, 1992).

Morgan (1992) states that the classic pattern of a lifetime spent engaged in one career at one or perhaps two companies is losing ground. Given the dynamic nature of the typical workplace, a legitimate fear of being left behind in a society becoming ever more competitive is resulting in a need for change-oriented training that allows adults spatial and temporal independence in obtaining education. Distance education clearly seems poised to step in and fill this need. Even now, distance education providers are working with more adult students who have an immediate need to apply the information being studied in their workplace environments.

With a global knowledge-based economy, the economic success of a country depends partly on the quality of its intellectual capital. Not surprisingly then—given an increasingly technology-rich environment—the vocal stakeholders in distance education are expanding from the traditional base of students, educators, and educational administrators to include legislators, business leaders, and government regulatory agencies (Miller, 1992).

Individuals in public and private sectors have begun demanding measurable outcomes of education. If they are to facilitate this demand for accountability, planners and providers of distance education must develop a unit of measure that reflects mastery of the subject instead of just time on task.

Societal factors are also affecting the context in which professional education is being conducted. For instance, the concept of lifelong learning is becoming increasingly accepted by the public. With this acceptance however, comes an attendant desire to have a voice in making decisions about factors that may affect either the quality of the process or the outcomes of the educational experience.

This is occurring at all levels of education. As increasing numbers of working adults seek access to higher and continuing education, they are demanding more options for where, when, and how that education will take place. They increasingly expect the companies they work for to provide institutional support services to facilitate other obligations on their time and resources.

Moore (1987) suggests that the rising demand by adults for self-directedness of their educational process will naturally lead to increased attention paid to distance education. Furthermore, he predicts that distance education will eventually become a very significant element of adult, continuing, and higher education, inevitably blurring the distinctions between them. If this is so, distance education providers will need to gain a greater understanding of how adult learners are negotiating this "brave new world" if they are to successfully design and implement effective education (Garrison, 1989).

Web-based Education

Web-based continuing professional education, of course, could not exist without the Web itself. As such, the relevant literature on Web-based education

may be organized into three sections, the history of the Internet and the Web, the role of the Web in education, and the emerging role of the Web in continuing professional education for CPAs.

Historical Perspectives on the Internet and the World Wide Web

The infrastructure undergirding Web-based education is the Internet. Reid (1997) describes the Internet as "networks, software, computer, and other technologies; but more so, it is a catalyst of change, a new mass medium, a culture, a mindwarp, new things never before imagined" (p. xiv). What we now know as the Internet was the outcome of a project conducted in 1970 by the Defense Agency Research Projects Administration (DARPA). The purpose of the project was to develop a communication network infrastructure for the United States military that would survive a nuclear attack. Universities were major participants in the development of the ARPA network (ARPAnet) system. And as university students graduated and entered the job market, corporate computers became connected to the net through these individuals (Roblyer, Edwards, & Havriluk, 1997).

Initial public enthusiasm for joining the information superhighway was muted however. Not only were the majority of adults still unfamiliar with using computers outside the workplace, but one had to be fairly proficient in the use of Unix, a non-intuitive, complex computer language initially needed to access the Internet.

The solution to this issue was the creation of the Web in 1992. The Web provided a user friendly means of organizing, presenting, and accessing information over the Internet. And with the appearance of Internet Service Providers (ISPs) in 1993, organizations and individuals were finally granted easy access to any of the networks around the globe that were connected to the net (Reid, 1997).

Above all else, the Web provides quantity and variety. Through the Web, users have consistent and convenient access to a greater variety of media in a more simplified manner than they ever have before (Graves, 1998). Carroll, Broadhead and Cassel (1997) describe the Web as "nothing less than a publishing phenomenon." Without a central authority controlling distribution methods on the Web, any individual can put information on-line about any topic.

As Meyers (1999) notes, three new technologies have had a significant impact on the public's acceptance of the Web,

> 1. HTML (Hypertext Markup Language): The language that is used to write Web pages. 2. http (Hypertext Transfer Protocol): The protocol for the transmission of Web pages. 3. A Web browser: The software that receives the information over the Internet, interprets the HTML, and displays the results. (p. 3)

The first Web browser was developed using software and protocols proposed by American academic Berners-Lee in 1989 (Reid, 1997). As a researcher at the CERN atomic research center in Switzerland, his proposals allowed users to navigate among computers throughout the Internet and browse documents through point-and-click commands (Reid, 1997). His concept of a universal library of knowledge containing text, graphics, and sound encompassing computers and networks worldwide is the underlying basis for the Web (Graves, 1998).

The central tenet of the Web is hypertext. As Romiszowski (1997) notes, the Web is,

> a hypertext system that allows the contributors of information to create links between their contributions and any of the other documents, or sites existing in the system, and allows the Internet users to navigate freely from one site to another by simply clicking on the highlighted indicators of existing links. (p. 25)

Using hyperlinks on the Web allows information to be explored in a nonlinear manner (Meyers, 1999) and once Web technology became available, growth in Internet use spread rapidly throughout the research community. The term "rapidly" may be an understatement. As Reid (1997) indicates, "by June 1993 more than 130 server computers were Web-enabled. By July 1996, the number of servers grew to over 150,000 " (p. xxiv). The growth in Web sites available to those servers was also growing phenomenally. According to a study published in *Science* (Lawrence & Giles, 1998), there were approximately 320 million Web sites on the Internet by May 1998.

The Role of the Web in Education

Harasim (1996) states that "on-line education through computer networking is creating a paradigm shift in education" (p. 1). Because computer networking technology enables many-to-many communication across time and space, it allows for group interaction that is time and place independent (Oliver, Herrington, & Arshad, 1997). The convergence of multimedia and computer networking has also introduced fundamental changes in the methods and techniques employed in education and training. For example, electronic mail (E-mail) can be used to distribute course materials and share information. Bulletin boards, electronic discussion forums, newsgroups serve for positing comments and questions and interactive tutorials let students take courses on-line. Also, real-time conferencing places participants in the same virtual classroom (Marquadt, 1996; Slay, 1997; Wulf, 1996).

Relan and Gillani (1997) indicate that there are contextual assumptions related to Web-based education. For instance, they point out, it is assumed that

> the learner has access to the Web at all times, and is allowed to explore it in a self determined or guided sequence; web-based education would function best in a constructivist environment; the teacher becomes a facilitator for finding, assessing, and making meanings from the

> information discovered from a variety of media; and learning occurs in an interdisciplinary fashion without regard to the attainment of learning objectives within a fixed time. (p. 43)

And indeed, the hypertext format used by the Web seems tailor-made to facilitate a student-centered approach to education (Becker & Dwyer, 1994). As Oliver, Herrington, and Arshad (1997) note, the advantages of browsing and the ability for retrieval offered by the Web closely resemble human thought processes. Quite naturally, this has created some enthusiasm among educators. But they warn, however, that the *potential* for instructional technologies are frequently not synonymous with the reality.

Despite developments in hardware, software, computer networking, multimedia, and the Web that are slowly increasing the market share of Web-based learning, organizations are still cautious about how much education delivery should be technology-based (Leigh, 1997). The American Society of Training and Development's (ASTD) 1998 annual training report states that training delivered by learning technologies—defined as the use of electronic technologies to deliver information and facilitate the development of skills and knowledge—accounts for only 5.8% of all training time. Less than 10% of organizations reporting to ASTD are using interactive digital technologies, such as the Internet, for training. Furthermore, 35% of the responding organizations use no learning technologies at all. Nevertheless, most companies did expect their learning technologies use to grow (Bassi & Van Buren, 1998).

Researchers are divided on the overall benefit of Web-based education. Vargo (1997) evaluates Web-based technology as a pedagogically sound foundation for effective, efficient, education programs. On the other hand, Bates (1995) insists that the operative term in Vargo's assessment is *foundation*. He indicates that educators' choices with Web-based technology can result in

"distance technologies as an add-on to existing institutions" or "'knowledge in a box' impersonal, individualized and socially isolating" (p. 10). Filipczak (1995) agrees, noting that "while more efficient in cost and time, distance learning on the Internet can be cheaper, faster, and usually more efficient than other learning modes, but it may not necessarily be more effective" (p. 111). Dede (1996) seconds the motion, warning that "access to data does not automatically expand students' knowledge; the availability of information does not intrinsically create an internal framework of ideas" (p. 199).

The Role of the Web in Continuing Professional Education for CPAs

Despite the legitimate concerns expressed above, researchers generally acknowledge that Web-based learning has a useful role in continuing professional education, particularly for knowledge workers. "Knowledge workers" are individuals who earn a living by critically analyzing available information for relevance and value and applying creativity in order to create new knowledge. In a rapidly changing and open information society, knowledge workers have to act ever more quickly if they are to keep abreast of change. As a result, the most useful training delivery system would be one that is distributed rather than centralized, allowing for learner control of time and place. This implies the use of technology-based training delivery systems (Romiszowski, 1997).

For at least one kind of knowledge worker, CPAs, the most useful delivery system would also be interactive. Although the AICPA and National Association of State Boards of Accountancy (NASBA) require two hours of self-study to receive one hour of continuing professional education credit, each one hour of self-study on an *interactive* self-study course counts for one hour of credit (AICPA & NASBA, 1998). Given the requirement facing most CPAs that they complete an average of 40 hours of continuing professional education per year,

combined with the flexibility inherent in technology-based training delivery, multimedia continuing professional education courses would seem to hold a definite allure for CPAs. In theory, multimedia courses inject fun, increase retention, and provide convenience into significant, recurring, educational requirements (Nacinovich, 1998). In reality, multimedia vendors report a tepid response at best to the technology. According to Nacinovich (1998) earliest provider of multimedia continuing professional education courses to CPAs offered its first course in 1993. Five years later, they estimate that 50% of their customers have taken at least one multimedia course. They now offer over 100 multimedia courses via CD-ROM and 20 courses over the Internet. On the other hand, less than 10% of another major vendor's 25,000 customers have ordered one of the 58 available multimedia CD-ROM courses. Other organization offering continuing professional education courses to CPAs also indicated poor market reception (Nacinovich, 1998).

Deterrents in Adult Education

The concept of deterrents is central to most theoretical frameworks of participation in adult education (Cross, 1981; Darkenwald & Merriam, 1982). As a result, the relevant literature on participation theory may be organized into two sections, the conceptual development of participation theory, and the role that deterrents (specifically as they apply to Web-based education) play as a component of that theory.

Conceptual Development of Deterrence Framework

Scanlan (1986) defined deterrents to participation as "a reason or group of reasons contributing to an adult's decision not to engage in learning activities" (p. xi). Valentine and Darkenwald (1990) refined the definition of deterrent by making a distinction between barriers and deterrents. While "barriers connote an absolute blockage, a static and insurmountable obstacle

that prevents an otherwise willing adult from participating in adult education," the term deterrents "suggests a more dynamic and less conclusive force, one that works largely in combination with other forces, both positive and negative, in affecting the participation decision" (pp. 30-31). Darkenwald and Valentine (1985) state "that an individual's decision not to participate in organized adult education is typically due to the combined or synergistic effects of multiple deterrents, rather than one or two in isolation" (p. 187).

Scanlan (1986) reviewed the research relating to deterrents to participation in adult education by documenting the existing models and theories attempting to explain participatory behavior. His research first identified early explanatory models. The first explanatory model developed by Knox and Videbeck (1963) attempted to explain the relationship between situational, social, and psychosocial elements of participation. Variations in participation were attributed to the interaction between an individual's subjective orientation—defined as groups of participatory acts and social relationships related to a single life role—and the objective organization of one's life space, defined to include one's role and status configuration, availability of participatory opportunities, and personal and environmental restraints influencing one's participatory alternatives (Scanlan, 1986).

The second exploratory model discussed by Scanlan (1986) was Miller's (1967) participation model. Using Lewin's field theory as a basis of interpreting variables constituting an adult's psychological and social environment, Miller proposed that participation or nonparticipation resulted from the interaction of personal needs and social structures. Implied in Miller's concept of restraining forces was the potential impact of individual or environmental deterrents to adults' participation in educational activities.

Additional theories have identified the contribution of attitudes and expectations toward participation in adult education. For instance, Seaman and Schroeder (1970) addressed attitudes as intervening variables that determine behavior. After testing the impact of attitudes toward adult education and the extent of participation, Seaman and Schroeder (1970) concluded that,

> there are factors, presumably situational in nature, other than those explicitly considered in this study, that do affect the influence which attitudes have on the extent of educative behavior....This would seem to bear out the assumption that these factors were preventing the respondents from participating more often in educative behavior. (p. 105)

Grotelueschen and Caulley (1977) introduced Fishbein and Ajzen's (1975) behavioral intention model to continuing professional education. This model assumes that an individual's intention to perform a behavior is a function of personal attitude and subjective norms, both the individuals and others (Yang, Blunt, & Butler, 1994).

A model proposed by Dhanidinia and Griffith (1975) was economically, rather than psychosocially, based. They proposed that participation in adult education is the result of a favorable cost/benefit analysis. In their model, participation in occupationally related adult education represents a human capital investment. Benefits of participation consist of the marginal increase in present or future earnings potential due to acquisition of new knowledge and skills. Costs include both tangible costs (e.g., tuition and books) and intangible costs such as the opportunity cost of foregoing revenue while engaged in educational activities.

There are several multivariate models that attempt to explain educational participation by combining dispositional, situational, and environmental factors. Three of them that have relevance to this research include: Rubenson's (1977) Recruitment Paradigm, Cross' (1981) Chain-of-Response model and

Darkenwald and Merriam's (1982) Psychosocial Interaction model. Rubenson's paradigm represents participation behavior as the interaction between personal and environmental variables operating in an adult's life at a particular point in time. The model emphasizes adult learners' perception of experiences, environmental structures, and individual needs. Consequently, deterrents to participation are defined "in terms of their perceived (rather than actual) frequency or magnitude of influence" (Scanlan, 1986, p.7).

Cross' (1981) Chain-of-Response model was developed to assist in explaining adults' participation in education. The decision to participate in educational activities is conceived as "the result of a complex chain of responses, each based upon the evaluation of the position of the individual in his or her environment" (Scanlan, 1986 p. 7). Cross' model proposed a deterrent structure consisting of three major categories: situational, institutional and dispositional. Based on research by Johnstone and Rivera (1965), Cross defined situational deterrents those as related to an individual's external situation at a given time and dispositional deterrents as internal attitudes or beliefs about education programs that impede participation. The new category of institutional deterrents refer to characteristics of the institution offering the educational activity that discouraged participation (Henry & Basile, 1994).

Darkenwald and Merriam (1982) proposed the Psychosocial Interaction model to explain adult participation in continuing education. Like the Cross model, the Psychosocial Interaction model views both internal and external stimuli as determinants of adult behavior. The emphasis of this model is on the determinants of adult behavior, specifically the impact of socioeconomic status that is mediated by the individual's environment. One element of this model hypothesized four categories of barriers to participation: situational, institutional, psychosocial, and informational. Situational and institutional are

defined roughly in the same manner as Cross. "The psychosocial category subsumes Cross' narrow perspective on dispositions regarding oneself as a learner within the larger context of other relevantly conceived and socially determined beliefs, values, attitudes, and perceptions" (Scanlan, 1986, p. 12). The additional category of barriers, informational, addressed not only the institution's lack of communicating information about the program, but also the adults' failure to seek out and use available information (Henry & Basile, 1994).

In the earliest empirical work in adult education, Scanlan and Darkenwald (1984) identified six deterrent factors impacting on participation in continuing education. Further empirical work conducted by Darkenwald and Valentine (1985) found six factors that deter the general public from participating in organized adult education. Additional deterrence work was done much along the same lines, but varying by the population studied (Davis, 1988; Hayes, 1987; Martindale, 1986; Reddy, 1991; Weischadle, 1988). However, what is not present in the literature is an attempt to study deterrents based on a specific education delivery medium. One example of a specific education delivery medium would be Web-based education.

Deterrents to Participation in Web-based Education

The Internet as a learning environment gives the learner the choice of where and when to study. Facilitated by technology, it also permits individual interactions with the instructor and other learners as well as participation in group discussions (Webb & Street, 1997). There is no literature specifically addressing deterrence for Web-based education but general writings about Web-based education contain references to factors that clearly deter individuals from participating or continuing to participate in Web-based education. Those most frequently cited in the literature are related to interaction and technical

capability (Khan, 1997b; McCormack & Jones, 1998; Owston, 1997; Webb & Street, 1997).

As Simoff and Maher (1997) have noted, one considerable drawback of the current design of Web-based courses is the loss of interactivity and the single direction flow of the majority of information. The chief aspect of lack of interactivity is the loss of physical cues that (non-blind/deaf) adults are used to having available to help in interpreting the context of dialogue. In addition, asynchronous communication can make it difficult to track the progress of a conversation, determine if other participants have received a student's contribution, and assess if that contribution has been interpreted in the manner in which the student intended. One outcome of Simoff's research is an awareness of the necessity for an increased time commitment to address the level of interaction desired (McCormack & Jones, 1998).

Technical capability can be as large a barrier to participation in Web-based education as the loss of interactivity. Having the capability to participate in Web-based learning requires appropriate computer systems, communication connectivity, and personal technical knowledge (Khan, 1997b; McCormack & Jones, 1998; Webb & Street, 1997). For Web-based learning to be more effective than irritating, it is necessary to have sufficient memory for multi-windows and multi-tasking. The lack of these has been cited as a significant barrier to participation in electronic-based distance education (Mak & Mak, 1995).

An additional barrier is the lack of adequate communication connectivity. Without reliable access to the Internet, participation in Web-based learning can be impossible. And without sufficient modem speed to prevent frustratingly long download periods when accessing sound, video and graphics, Web-based learning, while do-able, can *feel* impossible (Dillon, 1997; Filipczak, 1995; McCormack & Jones, 1998; Owston, 1997). Not surprisingly, Gantz (1997)

reports that according to an International Data Corporation survey, the biggest obstacle to Web-based training is providing reliable and fast access to users. Unfortunately, efforts to alleviate these barriers frequently run up against another, equally daunting barrier: economics; it can be extremely expensive to acquire an appropriate computer and communication system (Dillon, 1997; Filipczak, 1995; McCormack & Jones, 1998; Owston, 1997).

Even when the barriers above can be overcome, there still remains the issue of comfort with technology. Eastmond (1995) states that adult learners found becoming comfortable with technology to be critical to their success in electronic learning. Filipczak (1995) agrees, indicating that "learner success depends on technical skills in computer operation and Internet navigation, as well as the ability to cope with technical difficulties" (p. 112). Other significant issues associated with personal technical knowledge include a learner's mistrust of the unknown, difficulties in comprehending the constantly changing capabilities of emerging technology, and high initial expectations for commercial quality and tailored delivery courses (Lockheed Idaho Technologies Co., 1995). Each of these can easily be a deterrent to participation in the full potential of Web-based continuing professional education.

No studies were found regarding deterrence for Web-based continuing professional education for CPAs. The literature does contain discussions of factors that make such participation difficult. Unfortunately, this information is piecemeal and anecdotal. A summary of the relevant research is presented in Appendix B.

Chapter Summary

This chapter reviewed the literature related to deterrents to participation in Web-based continuing professional education by CPAs. Because no existing body of literature specific to this topic could be located, this chapter reviewed

the relevant literature encompassing continuing professional education in general, education for certified public accountants in particular, distance education in general, Web-based education in particular, and participation theory as it addressed deterrents to participation.

CHAPTER III

METHODOLOGY

The purpose of this chapter is to describe the methodological details employed for a study designed to answer the following questions:

1. What is the relative importance of the various deterrents to participation in Web-based continuing professional education for certified public accountants in Georgia?
2. Can individual deterrents be reduced to a more parsimonious framework through factor analysis?
3. To what extent are personal and professional variables related to derived deterrent factors?

The chapter is organized into five sections describing the study's conceptual framework, instrumentation, study sample, data collection, and data analysis.

Conceptual Framework

A paradigm is a term used to describe a way of viewing the world. As described in Chapter II, there was a paradigm shift in the way that distance education was conceptualized when technology made it possible for multiple individuals at disparate locations to convene electronically and still receive individual help and attention. This study will explore one aspect of this new paradigm; that is, how deterrents affect participation in electronic education—specifically, participation by Certified Public Accountants (CPAs) in Web-based continuing professional education.

As discussed more fully in Chapter II, the construct of deterrents—as it pertains to adult education—occupies a central place in theories of participation

(Scanlan, 1986). Participation theories identifying deterrents as crucial to understanding involvement in education have been developed by numerous writers. See for example Cross (1981) and Darkenwald & Merriam (1982). This area of research ultimately can be traced back to the social psychological work of Lewin (Darkenwald & Merriam, 1982). Rubenson points out that the key element in Lewin's work is choice, the choice to act or not act in a particular manner (as cited in Scanlan, 1986). The factors that impel an individual toward a particular choice may be thought of as motivators and the factors that impel them away from a particular choice may be thought of as deterrents (Darkenwald & Merriam, 1982). This study proposes examining various deterrents that contribute to a specific class of adult learners' decision not to engage in Web-based learning.

The use of the deterrent paradigm in this study is based on the work of Scanlan and Darkenwald (1984), Darkenwald and Valentine (1985), and Valentine and Darkenwald (1990). Empirical, inductive research by Scanlan and Darkenwald (1984) provided support for incorporating the construct of deterrents into adult education participation theory by identifying various deterrents that appear to impact participation in continuing education. Further empirical, inductive work conducted by Darkenwald and Valentine (1985) identified factors that deter the general public from participating in organized adult education.

In order to respect the unique context of continuing professional education for certified public accountants, as well as the unique delivery system associated with Web-based education, my first design decision was to proceed in the same exploratory manner as that described by the work of Scanlan and Darkenwald (1984) and carried on by Darkenwald and Valentine (1985). In this inductive approach, a comprehensive listing of individual deterrents is created

and then the deeper structure inferred from the observed intercorrelations of individual deterrent items.

Instrumentation

The instrument used in this study was a mailed self-completion survey designed to gather information about deterrents to participation in Web-based continuing professional education (see Appendix C). There were seven major steps involved in the development process of the study survey instrument. These steps are summarized in Table 2.

Table 2

Study Survey Instrument Development Process

1. Concept clarification
2. Development and refinement of pilot survey deterrent item pool
3. Construction of response scale
4. Addition of background items
5. Pre-pilot review of pilot survey instrument
6. Final review and empirical test of pilot survey instrument
7. Construction of final study survey instrument

Concept Clarification

The first step, concept clarification, involved specifying exactly what I meant by deterrents to participation in Web-based education. Operationally, a deterrent is defined as follows: A deterrent to participation in Web-based continuing professional education is a force working in combination with other forces to reduce the chance that an individual will elect to participate in a particular Web-based educational opportunity (Darkenwald & Valentine, 1985).

Development and Refinement of Pilot Survey Deterrent Item Pool

The second step, development and refinement of the pilot survey item pool, initially involved developing a list of potential deterrents to participation. That list was gathered from four sources: (a) a review of Web-based education and continuing professional education literature, (b) E-mail interviews with practicing certified public accountants, (c) telephone interviews with continuing professional education administrators, and (d) E-mail interviews with providers of continuing professional education. The initial list was then refined by three separate groups of reviewers: the researcher (Perdue) and dissertation supervisor (Dr. Thomas Valentine); a small panel of adult educators; and a trio of Georgia licensed practicing CPAs. The item pool development and refinement process is summarized in Table 3 and explained more fully below.

Table 3

Pilot Survey Deterrent Item Pool Development and Refinement Process

Process	Results	Version[a]	Appendix
Item pool development by Perdue			
Literature review	+ 128 items		
E-mail interviews with practicing CPAs	+ 96 items		
Interviews with CPE administrators	+ 6 items		
Interviews with CPE providers	+ 12 items		
Potential deterrent items in pool	**242 items**	**N/A**	**H**
Item pool refinement by Perdue and Valentine			
Review for inappropriate items	- 16 items		
Review for redundancy	- 161 items		
Item critique session	No change		
Provisional deterrent items in pool	**65 items**	**A**	**I**
Pre-pilot review of pilot survey instrument			
CPE professionals	- 7 items	**B**	**M**
Practicing CPAs	No change		
Researcher and dissertation supervisor	- 1 item		
Researcher	- 1 item		
Final deterrent items in pilot survey	**56 items**	**Final**	**N**

[a] Version of proposed pilot survey

Item Pool Development by Perdue

One important factor that must be considered when an instrument is being designed is the concept of validity. Validity is defined as the degree to which an instrument actually measures the variables it claims to measure (Borg, 1987). Content validity, therefore, is the degree to which items on the instrument actually measure the subject under study. One way to insure content validity is to seek items for the instrument from multiple authoritative sources. The first source that I used was a computer-based literature search of the Educational Resources Information Clearinghouse (ERIC), the Dissertation Abstracts International, the University of Georgia's GALIN online system, The Pennsylvania State University online library, and the University of Wisconsin online library. Descriptors used to guide the various searches included: "web-based education," "continuing education," "continuing professional education," "deterrents," barriers," "accountants," and "certified public accountants." This search identified a number of books, articles, and dissertations. All of these sources were examined for concepts that could be considered possible deterrents. This process yielded 128 potential deterrent items to be used in the written survey.

E-mail interviews were also held with practicing Georgia CPAs. The CPAs selected were individuals who are currently holding a certification from the Georgia State Board of Accountancy and, as such, are required to complete an average of 40 hours of continuing professional education per year. A total of 20 electronic interviews were held focusing on interviewees' perceptions about earning continuing professional education credit on the World Wide Web (the Web). As illustrated in Appendix D, these interviews consisted of four questions. How would you react to earning continuing professional education credits on the World Wide Web? What would you like about earning continuing

professional education credits on the World Wide Web? What would you dislike about earning continuing professional education credits on the World Wide Web? And, fourth, what makes it difficult to earn continuing professional education credits on the World Wide Web? Interviewees' textual responses were analyzed to identify fragments indicative of deterrents. These fragments were then added to the deterrent item pool, yielding an additional 96 potential deterrent items. A sample response is provided in Appendix E.

Two additional sources of potential deterrent items included continuing professional education administrators within the public accounting field and continuing education providers. Telephone interviews were conducted with two individuals involved in continuing professional education administration, the Operations Manager and the Director of Continuing Professional Education for the Georgia Society of Certified Public Accountants (Georgia Society of CPAs). E-mail interviews were conducted with several continuing education providers. These included members of the Continuing Professional Education Committee for the Georgia Society of CPAs, continuing professional education providers for the Georgia Society of CPAs and the American Institute of Certified Public Accountants, and continuing education professionals with the American Institute of Certified Public Accountants. These professional organizations are major stakeholders in the planning of continuing professional education (CPE) courses and programs for certified public accountants.

As illustrated in Appendix F, both the telephone and E-mail interviews consisted of three questions: Why do you think CPAs don't use Web-based CPE? What features would Web-based CPE need to have for CPAs to use it? And, third, what demographics (personal or professional) might impact the use of Web-based CPE by CPAs? Insights into the historical and current perceptions concerning deterrents to participation in continuing professional education

were documented and included as potential deterrent items for instrument development. These were analyzed to identify fragments in their textual responses indicative of deterrents. Appropriate fragments were added to the deterrent item pool. This process yielded 6 additional potential deterrent items from the administrators and 12 potential deterrent items from the providers. A sample E-mail response is provided in Appendix G.

Item Pool Refinement by Perdue and Valentine

As detailed in Appendix H, deterrent item pool development yielded an initial listing of 242 potential deterrent items to be included in the survey. The next step entailed deleting inappropriate items. This process was necessary because my dissertation supervisor (Dr. Valentine) and I had decided to increase the probability of concept saturation by acting on a policy of initially including even those items that did not clearly fit the definition of deterrent. Having done that, the next step was to narrow the field by judging the congruence of individual items in the pool with the conceptual definition of deterrents as defined for the study. Several critique sessions were held for this purpose between myself and Dr. Valentine. To avoid individual subjective bias, we worked as a team to review each item for its potential as a deterrent and to eliminate those that were deemed inappropriate. This process resulted in the elimination of 16 items and ensured that items included in the final survey instrument did not go beyond the bounds of the defining construct.

Finally, a rigorous process of analyzing each element for semantic equivalents served to eliminate item redundancy and ultimately reduced the potential pool to 65 unique items. These items formed the core content for version A of the proposed pilot survey instrument (see Appendix I).

The ability to eliminate 74% of the initially collected items may be taken as evidence of content saturation, which suggest that most if not all potential

deterrents to participation by the target audience had been discovered during the item pool development process. Furthermore, subsequent interviews yielded no new content items, providing additional evidence that the sources consulted in initial pool development had covered the subject area thoroughly.

Construction of the Response Scale

The third task in the overall instrument development process was to design an optimal format to capture respondent data. Several formats were developed and evaluated before we ultimately decided on a six-point Likert scale bounded by "Strongly Disagree" (1) and "Strongly Agree" (6). Respondents' attention was focused on deterrent items with the following instructions: "PERCEPTIONS OF WEB-BASED CPE COURSES. Please answer each statement below by circling only one response." An example of the response scale as it appeared on the finalized pilot survey instrument is illustrated in Table 4.

Table 4

Response Scale

SECTION I:	**PERCEPTIONS OF WEB-BASED CPE COURSES. Please answer each statement below by circling only one response.**						
	Strongly Disagree ◄►						**Strongly Agree**
1. I don't have the *computer hardware* necessary to participate in web-based CPE courses.	1	2	3	4	5	6	
2. I don't have the *computer software* necessary to participate in web-based CPE courses.	1	2	3	4	5	6	

Addition of Background Items

The final step in developing the first version of the pre-pilot survey instrument was to add 10 items intended to collect background information on study participants. The personal and professional variables on the survey

instrument were selected for three reasons: (a) to facilitate the analysis of the third research question ("To what extent are personal and professional variables related to derived deterrent factors?"), (b) to characterize the sample, and (c) to fulfill a request by the Georgia Society of CPAs.

As discussed more fully in Chapter II, a review of the literature supports the inclusion of personal and professional variables in surveys intended to gather information about deterrents. For example, Rogers (1995) indicates that "past research shows many important differences between earlier and later adopters of innovations" (p. 280). Among the characteristics cited are age and years of formal education. Research is inconsistent about the relationship between age and adoption of innovation with some studies indicating no difference, while others show either younger or older individuals as early adopters of innovation. In arguing for convergence of distance education with education as a whole, Jevons (1990) states that the respective clientele for distance education is now merged by age. In contrast, McCormack and Jones (1998) argue that the "older students do not feel comfortable with, or take longer to adapt to, technology or teaching methods that differ from what they are familiar with" (p. 44). Research concerning educational level indicates that early adopters have more years of formal education (Rogers, 1995) while research concerning gender indicate females participate in technology at a lesser rate than males (Canada & Brusca, 1991; Mason & Kaye, 1989; Starr, 1997).

The inclusion of personal and professional variables also helped characterize the sample. Information gathered included age, gender, educational level, arena of accounting practice, years as a CPA, and historical use of the Internet to purchase goods or services (the latter variable included at the request of the Georgia Society of CPAs). Also included were items designed to gather information specifically concerning continuing professional education

practices. These included total number of continuing professional education hours completed during the last reporting period, total of those hours completed using some form of self study, total number of hours completed using Web-based courses, and interest in future Web-based continuing professional education.

In summary, personal and professional variables covered previous experience with self-study continuing professional education courses, previous experience with the Internet, future interest in utilizing Web-based continuing professional education opportunities, and various demographic items. With the addition of these 10 personal and professional variables, version A of the proposed pilot survey instrument contained a total of 75 items (see Appendix I).

Pre-Pilot Review of Proposed Pilot Survey Instrument

The pre-pilot review of the proposed pilot survey instrument consisted of critiques by three separate groups, each with its own perspective and expertise. These groups included (a) an adult educator responsible for developing professional education courses and an adult educator required to participate in continuing professional education, both continuing professional education professionals; (b) the researcher and dissertation supervisor (Perdue and Valentine); and (c) three practicing CPAs representing the public practice, industry, and government arenas of accounting practice. These individuals were selected to participate in the pre-pilot review because of their experience with planning and implementing continuing education or their status as members of the research target audience.

Pre-pilot Review by Continuing Professional Education Professionals

The first pre-pilot review was conducted with two continuing professional education professionals who have extensive backgrounds in adult education and continuing education development and implementation.

The continuing professional education professionals selected to participate in this review were chosen for their extensive experience in continuing professional education and survey design. My purpose in holding this review was to solicit design assistance and expose the draft documents to a set of fresh eyes. In doing so I hoped to minimize the possibility that over familiarity with the pilot survey instrument and cover letter had caused us to overlook potential redundancies among deterrent items or wording errors in the cover letter and survey instructions. The panelists agreed to allow me to tape-record the session for later review. This gave me greater freedom to listen to what the panelists were saying without having to divide my attention between note taking and conversation.

We began the critique session with a general discussion of deterrents to Web-based education as perceived by adult educators. I guided this discussion by asking open-ended questions intended to elucidate their perceptions of necessary areas of inquiry related to deterrents for participating in continuing professional education using Web-based education. After I was satisfied that they understood the purpose of the study, I gave a working definition of the construct being measured and then presented each panelist with written copies of version A of the proposed pilot survey instrument (see Appendix I) and version A of a proposed pilot survey cover letter (see Appendix J). The panelists were asked to review the two documents for completeness, clarity, conciseness, accuracy, problematic wording that could adversely affect respondent comprehension or document reliability, and (in the case of the survey instrument) item redundancy. The critique session lasted approximately 90 minutes.

As a consequence of this session, panelist recommendations for wording changes in the cover letter were adopted (see version B of the proposed pilot

survey cover letter, Appendix K). This version underwent additional review by one of the panelists who later suggested further changes intended to meet my goal of making the letter look more like a marketing tool. Her revisions resulted in the finalized pilot survey cover letter (see Appendix L).

Panelists' recommendations regarding the proposed pilot survey instrument were also considered and adopted. Specifically, I moved two background items into the core content of the instrument and condensed seven additional deterrent items on the grounds that they were redundant. This resulted in a proposed pilot survey instrument that contained 58 deterrent items and 8 background items for a total of 66 items (see Proposed Pilot Survey Instrument - Version B, Appendix M). A summary of the pre-pilot review by CPE professionals appears in Table 5.

Table 5

Pre-pilot Review by CPE Professionals

Proposed Pilot Survey Cover Letter

Original Document	Appendix	Revisions	Resulting Document	Appendix
Version A	J	• multiple changes to format and wording	Version B	K
Version B	K	• multiple changes to wording	Pilot Survey Cover Letter	L

Proposed Pilot Survey Instrument

Version A	I	• bulleted introduction • changed labels on response scale • deleted definition • converted items #1–3 to T/F • added N/A to items #4 – 58 • removed 9 redundant items • converted background items #69-70 to deterrent items	Version B	M

Pre-pilot Review by the Researcher and Dissertation Supervisor

In the second step of the review process Dr. Valentine and I met to discuss the revisions I had made to the pilot survey cover letter and written instrument as a result of the continuing professional education professionals' review. A summary of our review appears in Table 6.

Table 6

Pre-pilot Review by Researchers and Dissertation Supervisor

Original Document	Appendix	Revisions	Resulting Document	Appendix
Proposed Pilot Survey Cover Letter				
Version C	L	• no revisions	Pilot Survey Cover Letter	L
Proposed Study Survey Cover Letter				
Version A	O	• reformatted to match Pilot Survey cover letter	Version B	P
Proposed Pilot Survey Instrument				
Version B	M	• deleted item #31 • converted items #1-3 to standard scale • deleted item #18 • grouped similar items throughout instrument	Pilot Survey Instrument	N

During our meeting Dr. Valentine and I confirmed the finalized pilot survey cover letter (see Appendix L). We also made three changes to the proposed pilot survey. We deleted one additional item (#31: "I prefer not to access the Internet") because the item was deemed to be too broad a concept to gather useful data. We eliminated a newly found redundancy in statements

number 16 ("I prefer traditional classroom instruction over Web-based CPE courses") and number 18 ("I prefer traditional classroom instruction over using Web-based CPE courses") by deleting statement number 18. And, finally, we reordered the statements in order to group similar items. These three changes resulted in a finalized pilot survey instrument (see Appendix N).

The pilot survey cover letter and pilot survey instrument were then delivered to the continuing professional education Director of the Georgia Society of CPAs for duplication and inclusion in materials for pilot study participants. That is, attendees of the 1998 Southeastern Accounting Conference held on August 27-28, 1998, in Atlanta, Georgia.

Based on our meeting, I also elected to revise version A of the proposed study survey cover letter (see Appendix O) to more closely model the pilot survey cover letter. A copy of version B of the proposed study survey cover letter appears in Appendix P.

Pre-Pilot Review by Practicing CPAs

Three practicing certified public accountants holding licenses in the state of Georgia were asked to review version B of the proposed study survey cover letter as well as the finalized pilot survey. These individuals represented three arenas of accounting practice: public practice, industry, and government. Each is required by the Georgia State Board of Accountancy to complete an average of 40 hours of continuing professional education activities each year and is, therefore, well qualified to provide an informed critique. As with the previous review panels, the certified public accountants were asked to critique the two documents for completeness and accuracy. No significant change related to clarity or conciseness was requested in either document. As a result, the pilot survey instrument was simply relabeled "Proposed Study Survey Instrument – Version A" but otherwise reproduced unchanged.

Final Review and Empirical Test of Pilot Survey Instrument

The final review and empirical pilot test consisted of three separate phases: a final review by a university-based group of survey experts, a final review by professional education staff of the Georgia Society of CPAs, and an empirical pilot test administered to approximately 700 CPAs. These groups were chosen to review and pilot the instrument because they either had experience with written survey design in their own research, were experts in planning and implementing continuing professional education, or were members of the research target audience.

Final Review by Survey Experts

The first phase of the final review was conducted with a small panel of University of Georgia-based advanced doctoral students who have participated in, as well as researched, continuing professional education. Like the other review sessions, the purpose of this review was to confirm the clarity, completeness, and accuracy of the survey cover letter and instrument.

The critique session began with the distribution of version B of the proposed study survey cover letter and version A of the proposed study survey instrument. Panelists were asked to read both and then complete the survey as if they were licensed, practicing CPAs. After the group had finished these tasks, an individual discussion of the cover letter was conducted with each participant being asked to identify possible editorial changes. The results of these discussions were incorporated into version C of the proposed study survey cover letter (see Appendix Q).

Participants were then asked to perform two tasks. The first thing they were asked to do was confirm if the instructions at the beginning of the study survey instrument were comprehensible and concise. The second thing they were asked to do was review each individuals deterrent item for clarity and

accuracy. As a result of this process, reviewers identified problematic wording and made recommendations for improvement of both deterrent and background items. A sample of the proposed study survey instrument that incorporates their revisions (version B) appears in Appendix R. A summary of this review process appears in Table 7.

Table 7

Final Review by Survey Experts

Proposed Study Survey Cover Letter

Original Document	Appendix	Revisions	Resulting Document	Appendix
Version B	P	• changed to use of second person • multiple wording changes	Version C	Q

Proposed Study Survey Instrument

Version A	N	• revised introductory statement • revised definition • capitalized section titles • revised 25 deterrent items • separated two conjugated items • renumbered background items	Version B	R

Final Review by Professional Education Staff of the Georgia Society of CPAs

Copies of version B of the proposed study survey instrument and version C of the proposed study survey cover letter were sent to the Director of Continuing Professional Education and the Continuing Professional Education Operations Manager of the Georgia Society of CPAs for review. They were requested to examine the cover letter for content and clarity and the survey instrument for its ability to meet their data collection needs. Samples of the proposed study survey cover letter and proposed study survey instrument that

incorporate their suggestions appear in Appendices S and T respectively. A summary of this review appears in Table 8.

Table 8

Final Review by Professional Education Staff of the Georgia Society of CPAs

Original Document	Appendix	Revisions	Resulting Document	Appendix
Proposed Study Survey Cover Letter				
Version C	Q	• reordered first three bulleted statements • multiple wording changes	Study Survey Cover Letter	S
Proposed Study Survey Instrument				
Version B	R	• inserted "Internet" and put World Wide Web in parentheses • changed wording of item #6	Version C	T

Empirical Pilot Test

An empirical pilot test was conducted to obtain responses and input from a large sample of CPAs similar to those who were included in the actual study sample. The purpose of this test was to (a) calculate item adequacy through the analysis of frequencies and means of individual items and (b) reveal the presence of any remaining inappropriate or redundant items. Respondents for the pilot test included all CPAs attending the Georgia Society of Certified Public Accountants' Southeastern Accounting Show on August 27-28, 1998. This venue was chosen for the pilot survey because of the potential it offered for gathering a large sample. In fact, all of the approximately 700 CPAs who were pre-registered to attend the conference received the pilot survey packet (pilot survey cover letter [Appendix L] and pilot survey instrument [Appendix N]) as part of the conference check-in procedure. On the other hand, choosing to restrict pilot

testing to this venue limited the extent to which the pilot sample could be said to be representative of the entire target study population.

To increase the return rate, an incentive of 15 "CPE dollars" that acted as credit toward future continuing professional education courses sponsored by the Georgia Society of CPAs was provided to all CPAs who returned a completed survey at some point during the two day conference. A sample of a CPE dollars credit certificate appears in Appendix U.

A total of 268 surveys were returned. Of the surveys returned, 99% (266/268) were considered useable and included in the database. A summary of personal and professional characteristics of CPAs completing the pilot survey instrument is provided in Table 9.

Table 9

Personal and Professional Characteristics of Pilot Study Respondents (n = 266)

Variable	Value
Age (in years)	Mean = 44.2 SD = 9.1
Years certified as a CPA	Mean = 14.0 SD = 8.4
Percent of self-study CPE during last reporting cycle	Mean = 11.0 SD = 20.0
Percent interested in Web-based CPE for next reporting cycle	Mean = 21.2 SD = 21.6
Gender	
Female	50.2%
Male	49.8%
Arena of Accounting practice	
Public Practice	45.0%
Industry	39.2%
Education	1.2%
Government	4.2%
Other	10.4%
Participation in self-study course	
Yes	67.3%
No	32.7%
Used Internet to purchase goods or services	
Yes	52.9%
No	47.1%

Responses from the completed surveys were coded and entered as a data set. Using the statistical package SPSS 8.0, the researcher and dissertation supervisor performed the following two analyses on the collected data: frequency analysis of responses and intercorrelation of items. The frequency analysis of responses was undertaken to make certain that items exhibited a sufficient amount of variance. All items for whom more than 70% of the responses fell on only two response choices (from a six point scale) were examined for possible truncated variance. After examining the item frequencies, the distribution for all items was judged to be satisfactory. Although six items exhibited limited variance, in no case did more than 72% of participants select only one response. For all items a percentage of the participants selected each of the six responses. Consequently, no changes were made due to the frequency analysis.

The intercorrelations among items were calculated to make sure that items were not redundant. Any items that correlated above .70 (.49 of variance shared) were examined to make sure they were conceptually different. Although correlation analysis revealed five pairs of items exhibiting correlation greater than .70, in no case were the items judged to be redundant and so no changes were made.

Construction of Final Instrument

The last step in the instrument development process was construction of the final study survey instrument. Changes to this instrument utilized data gathered from the empirical pilot test and dissertation committee review. A summary of changes from the previous proposed version appears in Table 10. A sample of the finalized study survey instrument appears in Appendix C. This instrument contains 57 deterrent items and 9 background items.

Table 10

Changes to Study Survey Instrument as a Result of Empirical Pilot Test and Dissertation Committee Review

Proposed Study Survey Instrument

Original Document	Appendix	Revisions	Resulting Document	Appendix
Version C	T	• reformatted introduction • relocated item #53 to above item #51 • reworded item #42 • reworded items #58-60 • added two background items (educational level, total CPE hours)	Study Survey Instrument	C

Study Sample

The population of interest for this study was certified public accountants in the state of Georgia who are actively involved in continuing professional education. These CPAs constituted the natural target audience for participation in Web-based continuing professional education. The sampling frame for this study was in-state, certified public accountants (CPAs) with membership in the Georgia Society of Certified Public Accountants (N= ~8,000), a professional organization of CPAs with a membership of approximately 10,000. The Georgia Society of CPAs membership includes roughly 80% of the CPAs in the state of Georgia.

The Georgia Society of CPAs Operations Manager, Director of Continuing Professional Education, and members of the Continuing Professional Education Committee were all very supportive of this research. As representatives of the Georgia Society of CPAs, they had expressed a need to evaluate Web-based continuing professional education for its potential use to their membership.

While limited in number, previous distance education offerings by the Georgia Society of CPAs had been evaluated highly by the membership, indicating a willingness to use technology as an educational delivery mechanism (K. Street, personal communication, September 28, 1997).

Gathering data on the perceptions of Georgia Society of CPAs members was considered important if adult educators are to gain a deeper understanding of the deterrents to CPAs' participation in the evolving paradigm of continuing education. Through the expanding influence of newly emerged educational technologies, education and training systems all over the world have begun adopting new models of teaching and learning. And because professional accountants are not exempt from the consequences of this change (Carlozzi, 1998), it is believed that they should have a voice in its development. With over 30 years of experience participating in continuing professional education activities, the Georgia Society of CPAs membership provides a deep base from which to draw useful information about potential deterrents to utilizing distance education.

Participation in the study was restricted to professional accountants who are required to participate in continuing professional education for purposes of relicensure. With approximately 8,000 Georgia Society of CPAs members from which to draw, the sample pool provided a broad diversity of personal characteristics and backgrounds. The actual sample was drawn by systematic sample from the Georgia Society of CPAs 1998-1999 membership database. A computerized random number generator was used to determine a starting point in the database. From that starting point every 15th person in the database was selected, resulting in an initial sample of 800 potential respondents.

The respondents ranged in age from 25 to 72, with a mean age of 42.5 years. The respondents' period of time as a certified public accountant ranged

from 0.5 to 46 years, with a mean of 13.6 years. The number of continuing professional education hours completed during the last reporting period ranged from zero to 300 hours, with a mean of 79.2 hours. The number of these hours completed using some form of self-study ranged from zero to 120, with a mean of 15.5 hours. The number of total hours completed using Web-based courses ranged from zero to 40 with a mean of 0.2 hours. However, 98.4% of the respondents indicated no use of Web-based courses during the last reporting period. The number of hours of Web-based continuing professional education that CPAs were interested in completing in the next reporting period ranged from 0 to 96 with a mean of 13.8 hours.

A majority (63.1%) of respondents were male. With respect to employment, 50.7% of respondents were employed in the arena of public practice, 36.7% in industry, 4.1% in government, 1.6% in education and 6.9% in other various areas. With respect to educational attainment, 66.5% of respondents held a bachelors degree, 30.8% held a masters degree, 1.6% held a doctorate degree and 1.1% marked "other." The majority (55.5%) had used the Internet to purchase goods or services. A summary of personal and professional characteristics of CPAs completing the study survey instrument is provided in Table 11.

Data Collection

Communication with individual respondents closely followed the Total Design Method advocated by Dillman (1978). Data were collected by means of a written survey containing a list of potential deterrents to participating in Web-based continuing professional education. The original mailing included a cover letter describing the research (see Appendix S), a copy of the study survey instrument (see Appendix C), and a stamped return envelope addressed to the Georgia Society of Certified Public Accountants. The return envelope also had a

Table 11

Personal and Professional Characteristics of Study Respondents (n = 444)

Variable	Value
Age (in years)	Mean = 42.5 SD = 9.2
Years certified as a CPA	Mean = 13.6 SD = 8.6
Hours of CPE completed during last reporting cycle	Mean = 79.2 SD = 37.7
Hours of self-study CPE during last reporting cycle	Mean = 15.5 SD = 21.5
Hours of Web-based CPE during last reporting cycle	Mean = 0.2 SD = 2.3
Hours of Web-based CPE during next reporting cycle	Mean = 3.8 SD = 16.2
Gender	
Female	36.9%
Male	63.1%
Arena of Accounting practice	
Public Practice	50.7%
Industry	36.7%
Government	4.1%
Education	1.6%
Other	6.9%
Formal Education	
Bachelors degree	66.5%
Masters degree	30.8%
Doctorate	1.6%
Other	1.1%
Used Internet to purchase goods or services	
Yes	55.5%
No	44.5%

mailing label with the respondent's name and address affixed to the upper left corner (return address location). This was intended to reduce postage costs on subsequent mailings by allowing monitoring of who had and had not returned a

completed survey. Respondent confidentiality was maintained through the following process: As surveys were returned, envelopes were opened and surveys and envelopes separated into two stacks. Envelopes were retained just long enough to record the name of each individual who returned a survey and then were discarded. The master list of returned surveys was maintained in a secure location.

As shown in Appendix S, the cover letter included in the first mailing explained the following points:

- University of Georgia Institutional Review Board policies concerning human subjects,
- the fact that survey participants' names or other identifiers will not be linked with their completed survey,
- the fact that confidentiality of individual responses will be maintained and survey results reported only as aggregate data, and
- the fact that a summary of study results will be available to respondents upon request.

In order to enhance response rate, three additional mailings ultimately took place at two, five and 10 weeks after the original mailing. These mailings were only sent to respondents who had not returned completed surveys.

The second mailing consisted only of a reminder postcard (see Appendix V). The third mailing consisted of a replacement study survey, a stamped return envelope addressed as above, and a letter (see Appendix W) requesting those individuals who may have misplaced their survey to fill out and return the enclosed duplicate in return for a coupon worth 15 CPE dollars. Upon receipt of a completed survey, a coupon worth 15 CPE dollars (see Appendix U) was mailed to the respondent. The addition of this incentive was the result of the lower than expected cumulative response rate as measured two weeks after the

second mailing (22.6%). The decision to add the incentive was made possible by the generosity of the Georgia Society of CPAs.

Unfortunately, even with the inclusion of the incentive, we had still reached a cumulative response rate of only 43% two weeks after the third mailing. As a result, Dr. Valentine and I met to discuss alternative ways of reaching the 57% non-respondent sample subset. Six alternatives were identified as possible approaches to obtain the data necessary to generalize the research findings. These approaches are summarized in Table 12.

Table 12

Considered Alternatives for Reaching Survey Non-Respondents

- Conduct a fourth mailing to all non-respondents
- Conduct a fourth mailing to a random sample of 100 of the non-respondents
- Conduct a telephone survey with a random sample of 10% of the non-respondents
- Conduct a combination of options two and three
- Conduct a fourth distribution of the survey to all non-respondents by faxing
- Conduct a fourth distribution of the survey to all non-respondents by electronic mail

After discussing the research implications of each alternative, Dr. Valentine and I decided that a telephone survey would be the most efficient and effective methodology to pursue. This proposal was presented to the Georgia Society of CPAs' Continuing Professional Education Director, Katrina Street. However, after analyzing the response rates to date and reviewing the correspondence in the first three mailings, Ms. Street suggested that a fourth mailing be conducted instead of a telephone survey. This mailing would contain a direct appeal from her, in her role as continuing professional education Director. It was her belief that this appeal would achieve the 60% response rate that I hoped to achieve. Based on her strong belief in the effectiveness of a

fourth mailing and the willingness of the Georgia Society of CPAs to participate in a fourth mailing, I decided to pursue this alternative.

The fourth and final mailing consisted of a replacement survey, a return envelope addressed in the same manner as mailings one and three, and a letter from Ms. Street (see Appendix X). Her belief was vindicated, the cumulative response rate rose to 55.6% as a result of that mailing. Individual response rates from the four mailings are presented in Table 13. Dr. Valentine and I judged this response rate to be adequate for the purposes of this research.

Table 13

Response Rates from Survey Mailings

Mailing date	Surveys received	Raw response rate (N=800)	Incremental raw response rate	Adjusted response rate (N=799)
10/01/98	154	0.193	0.193	0.193
10/19/98	181	0.226	0.034	0.227
11/09/98	344	0.430	0.204	0.431
12/10/98	444	0.555	0.125	0.556

It is worth noting here that subsequent analysis revealed that respondents who received an incentive scored significantly higher on one of the derived deterrent dimensions. I interpret this to mean that respondents with high deterrence on that factor might never have responded to the survey without an incentive. Consequently, the use of incentives not only improved our response rate, it broadened the diversity of the sample.

Data Preparation

SPSS 8.0, a statistical analysis software package, was used to tabulate and analyze survey results. A codebook was developed to document the 67 items in terms of name, type of measurement, range of valid responses, and value for

missing item information. Upon receiving a completed survey, the first step in data preparation was to assign the survey a chronological identification number. The survey responses were then entered into the SPSS software package.

In addition, all written comments appearing on the surveys were transcribed and referenced by respondent identification numbers. The comments were both general and specific. General comments related to either the survey itself or to Web-based continuing professional education as a whole. Specific comments addressed individual items appearing on the survey, either as the sum of a response or in addition to a response. Appendix Y is a listing of the general comments provided by respondents. Appendix Z is a listing of the question-specific comments provided by respondents. An evaluation of these comments revealed that the majority either related information critiquing the survey itself, indicated that the respondent did not know the answer to a particular item, or expanded on the selection of "other" for a personal or professional variable. Consequently, the comments were ultimately judged not to be particularly useful for illuminating the research questions addressed by this study and are not included in subsequent discussions.

Data Analysis

Data analysis was conducted using the SPSS 8.0 statistical software package. The statistical analyses selected were reflective of the output needed to address the three research questions.

Research question 1 asked: "What is the relative importance of the various deterrents to participation in Web-based continuing professional education for certified public accountants in Georgia?" In order to compare CPAs' ratings of 57 deterrent items, item means were tabulated and ranked.

Research question 2 asked: "Can individual deterrents be reduced to a more parsimonious framework through factor analysis?" Because there was not

sufficient theoretical basis for predicting the factor structure of deterrents to Web-based continuing professional education for CPAs, exploratory factor analytic procedures were utilized. The principal objective of factor analysis is to try to reduce a large amount of information to a manageable form. It is an attempt to combine the variables that correlate with each other to create new, fewer variables (Kerlinger, 1979). This smaller number of variables can more clearly convey the information present in a complex data set (Jaeger, 1986). Because factor analysts have not developed sampling theory, large samples allow researchers to ignore sampling error. A minimum of 5:1 sample-to-variable ratio is required with the ideal ratio being 10:1 (Gorsuch, 1983). The data collection procedures in this study were therefore designed to yield large sample-to-variable ratios. The final ratio, after all surveys with one or more missing values were deleted, was 7.6 respondents to each variable to be factor analyzed.

The factor analysis process in this study involved the examination of the covariation between the 57 deterrent items to determine if there were common, underlying factors present. A principal components analysis was employed to extract the initial factors. Dr. Valentine and I examined and considered the Kaiser criterion and the scree test to suggest possible cutoff points. However, the Kaiser criterion suggested the retention of 20 factors which was far too many to interpret meaningfully. We ultimately decided to run a range of factor solutions from two to eight. In order to obtain uncorrelated factors with the simplest possible structure, we utilized orthogonal rotation using the Varimax procedure to reach a final solution. The selection of a factor solution was based upon at least three criteria: (a) ability to interpret meaning, (b) minimization of crossloaders to enhance parsimony, and (c) avoidance of factors containing too few items.

After the factor solution was selected, factor scores were computed for each individual factor. This was done using additive indices. The purpose in using additive indices was to restrict inclusion in the factor scores to those items with a criterion loading that exceeded .55. The intercorrelations between scores was computed and analyzed to determine the extent to which the factors were related. Coefficient alpha was also computed for each score to determine its internal consistency.

Research question 3 asked: "To what extent are personal and professional variables related to derived deterrent factors?" This third objective of the research was to determine the relationship between respondent personal and professional characteristics and the factor scores identified as deterring Web-based continuing professional education for CPAs. A series of Pearson bivariate correlation analysis were conducted between the factor scores and the following personal and professional characteristics: age, years certified as a CPA, total continuing professional education hours completed during the last reporting period, total continuing professional education hours completed during the last reporting period using some form of self study, and total continuing professional education hours completed during the last reporting period using Web-based courses. The relationship between factor scores and educational credentials was analyzed using a Spearman correlation analysis.

T-tests were used to analyze the relationship between the dichotomous variables and the factor scores. These dichotomous variables included gender, practice arena (public practice or industry), and the previous purchase of goods or services via the Internet. Although practice arena included "government," "education," and "other" as valid replies, "public practice" and "industry" accounted for 87.4% of the respondents participating in the study survey.

Consequently, it was analyzed as a dichotomous variable using only these two categories.

In addition to analyzing the correlation between the personal and professional variables discussed above, one further bivariate correlation analysis was conducted. This involved assessing the relationship between the factor scores and the number of hours that a CPA would want to complete during the next reporting period using Web-based continuing professional education.

Chapter Summary

This chapter described the conceptual framework, instrumentation, study sample, data collection, and data analysis of a study that explored deterrents to participation in Web-based continuing professional education for certified public accountants. Despite the fact that distance education using the World Wide Web is a logical solution to a problem that many certified public accountants face in completing annual continuing professional education requirements, there has been very little research done in understanding the relative importance of deterrents to participation in Web-based continuing professional education by this group of professionals. The survey instrument constructed for this study was designed to determine the relative importance of identified deterrents, to reduce those deterrents to a more parsimonious framework through factor analysis, and to determine the extent to which respondents' personal and professional variables are related to derived deterrent factors.

CHAPTER IV

FINDINGS

The purpose of this chapter is to present the results of the statistical analysis described in the preceding chapter. Results will be presented separately for each of the three research questions.

Findings Related to Research Question #1

The first research question asked, "What is the relative importance of the various deterrents to participation in Web-based continuing professional education for certified public accountants in Georgia?" Mean item means ranged from 1.55 to 4.20 on a 1 (strongly disagree) to 6 (strongly agree) point scale. Appendix AA includes a full rank order listing of all 57 items. Only 13 items demonstrated a mean at or above the 3.5 theoretical half point. The top 10 items are depicted in Table 14.

Table 14

Top 10 Deterrents

Rank	Item #	Item	M	SD
1	17	I prefer hearing CPE lectures in person rather than reading them on a *computer screen.*	4.20	1.55
2	57	It has never occurred to me to participate in Web-based CPE courses to complete my CPE requirements.	4.03	1.80
3	16	I prefer face-to-face interaction with the *instructor* rather than electronic communication used in Web-based CPE courses.	4.01	1.59

Rank	Item #	Item	M	SD
4	13	I prefer traditional classroom instruction over Web-based CPE courses.	4.00	1.53
5	18	I prefer hearing CPE lectures in person rather than hearing them through a *computer speaker*.	3.93	1.58
6	15	I prefer face-to-face interaction with my *peers* rather than electronic communication used in Web-based CPE courses.	3.89	1.59
7	14	I prefer using printed materials over the kind of electronic materials (e.g., computer screens, E-mails) used for Web-based CPE courses.	3.86	1.51
8	41	I am concerned that I don't know how to evaluate the quality of a Web-based CPE course before enrolling in it.	3.79	1.65
9	37	I am concerned that I might have too many interruptions in my office or home to participate in Web-based CPE courses.	3.79	1.73
10	53	I am concerned about submitting *personal* information over the Internet in order to participate in a Web-based CPE course.	3.77	1.79

Theoretically, these items provide the greatest deterrent to respondents' participation in a Web-based continuing professional education course. Of those top 10 items, the majority (7/10) involve educational methodology preferences, with six of these dealing with interaction preferences. The other three items in the top 10 encompass evaluation concerns (1/10), time constraint concerns (1/10), and security concerns (1/10).

Table 15 depicts the 10 bottom ranked deterrents. Theoretically, these items provide the least deterrence to participation in a Web-based continuing professional education course. The means for these bottom 10 items are extreme, ranging from 1.55 to 2.22. All of these items fall conceptually into the

category of access to resources, either technology-associated resources (7/10), personal resources (2/10), or political resources (1/10).

Table 15

Bottom 10 Deterrents

Rank	Item #	Item	M	SD
48	11	I don't have the *patience* to learn how to use the Web for a Web-based CPE course.	2.22	1.36
49	7	I don't have the authority in my work environment that allows me to download the necessary computer software from the Internet (e.g., browsers, sound, video, graphics applications).	2.08	1.70
50	26	I am concerned the cost of *purchasing the computer hardware* needed to participate in Web-based CPE courses is too high.	2.03	1.35
51	3	I don't have the *technical knowledge* necessary to participate in Web-based CPE courses.	1.89	1.31
52	8	I don't have reliable enough access to the *Internet* to participate in Web-based CPE courses.	1.89	1.46
53	2	I don't have the *computer software* necessary to participate in Web-based CPE courses.	1.86	1.52
54	4	I don't have the *confidence* necessary to participate in Web-based CPE courses.	1.83	1.23
55	27	I am concerned the cost of *connecting to the Internet* is too high to justify participating in Web-based CPE courses.	1.80	1.18
56	9	I don't have reliable enough access to *electronic mail (E-mail)* to participate in Web-based CPE courses.	1.79	1.42
57	1	I don't have the *computer hardware* necessary to participate in Web-based CPE courses.	1.55	1.29

Findings Related to Research Questions #2

The second research question asked, "Can individual deterrents be reduced to a more parsimonious framework through factor analysis?" The answer to this question is an unqualified "Yes." The individual and cumulative amount of variance explained by the 10 factors meeting the initial criterion for retention of an eigenvalue of 1.0 or greater is presented in Table 16.

Table 16

Total Variance Explained by Factor Solutions One Through 10

Factor Solution	% of Variance Explained	Cumulative % of Variance Explained
1	35.621	35.621
2	8.515	44.135
3	6.147	50.282
4	3.411	53.693
5	2.917	56.611
6	2.630	59.241
7	2.450	61.691
8	2.360	64.054
9	2.004	66.054
10	1.897	67.951

Using Varimax rotation, seven terminal factor solutions representing two, three, four, five, six, seven, and eight components were computed. An analysis of the various factor components was conducted and appears in Table 17. All solutions were examined and final selection of the best solution was made on the basis of conceptual meaningfulness. This represents the fewest factors capable of explaining a reasonable amount of variance that still make sense in terms of practical utility for users of these findings.

Table 17

Factor Solutions for Two Through Eight Factors

Solution	Provisional Labels
2 Factor Solution	
I	Electronic Communication Concerns
II	Resources/Quality Concerns
3 Factor Solution	
I	Quality Concerns
II	Technology-Associated Resource Concerns
III	Electronic Communication Concerns
4 Factor Solution	
I	Quality Concerns
II	Electronic Communication Concerns
III	Technology-Associated Resource Concerns
IV	Personal Resource Concerns
5 Factor Solution	
I	Quality Concerns
II	Electronic Communication Concerns
III	Technology-Associated Resource Concerns
IV	Personal Resource Concerns
V	Not interpretable
6 Factor Solution	
I	Quality Concerns
II	Electronic Communication Concerns
III	Technology-Associated Resource Concerns
IV	Personal Resource Concerns
V	Availability Concerns
VI	Evaluation Concerns
7 Factor Solution	
I	Electronic Communication Concerns
II	Quality Concerns
III	Technology-Associated Resource Concerns
IV	Personal Resource Concerns
V	Evaluation Concerns
VI	Not interpretable
VII	Availability Concerns
8 Factor Solution	
I	Electronic Communication Concerns
II	Personal Resource Concerns
III	Quality Concerns
IV	Technology-Associated Resource Concerns
V	Not interpretable
VI	Not interpretable
VII	Evaluation Concerns
VIII	Availability Concerns

After inspection of the rotated factor matrices, the most promising solutions were the three factor, four factor, and six factor solutions in term of clarity. The scree test indicated an argument for a four factor solution. Ultimately, the four factor solution was selected as the most conceptually meaningful representation of the data. It appeared detailed enough to be useful and elegant enough for the articulation of theory. This solution accounted for 53.7% of the scale variance.

Kerlinger (1979) indicates that loadings equal to or greater than .40 are considered large enough to warrant interpretation. However, he also provides a caveat stating that sometimes another criterion would be more appropriate. In analyzing the statistical data from the identification of underlying factors, a comparison was conducted for criterion levels of .40, .45, .50, and .55 to determine the most conceptually meaningful solution. The rationale for examining these additional criterion levels was to strive for the ultimate goal of factor analysis: simple structure. A simple structure has no crossloaders and all items load on a single factor. It is the easiest theoretical solution to understand. Table 18 presents the items crossloading on the four factors at these various criterion levels. The .55 criterion level was chosen to maximize conceptual clarity of the four factors.

After factor analysis, 33 of the 57 original items were included in a four factor structure. These four factors are labeled as follows:

- Factor I: Concerns About the Quality of Course Offerings,
- Factor II: Concerns About Electronically-Mediated Education,
- Factor III: Concerns About Access to Technology-Associated Resources
- Factor IV: Concerns About the Availability of Necessary Personal Resources.

These four factors include all items at or above the .55 criterion loading level.

Table 18

Items Crossloading on Four Factors at Criterion Levels of .40, .45, .50, and .55

	Item Number Crossloading at Each Criterion Level			
Factor	0.40	0.45[a]	0.50[b]	0.55[c]
Factor I	31			
	32			
	34			
	54			
	56	56		
	33	33	33	
	38	38		
	36			
	24			
	23			
	37			
	28			
Factor II	33	33	33	
	38	38		
	32			
	37			
	34			
	54			
	31			
Factor III	3	3	3	
	28			
	6	6	6	
	4	4	4	
	29	29		
	5	5		
	10			
Factor IV	10			
	4	4	4	
	6	6	6	
	3	3	3	
	5	5		
	29	29		
	56	56		
	23			
	24			
	36			

[a] Items 5, 23, 24, 28, 29, 33, 34, 36, 37, 54, and 56 fall out of both factors
[b] Item 38 falls out of both factors
[c] There are no crossloaders in the 4 factor solution at the .55 criterion level

The other 24 items failed to load on any factor. At the .55 criterion level none of the items demonstrated cross loading. Overall scale reliabilities (alpha) for the four factors were .93, .93, .91, and .87 respectively.

After the factor solution was selected, factor scores were computed for each individual factor. Although orthogonal rotation was used in selecting the factor solution, I did not use complete estimation factor scores to create the factor scores. Rather, this was done using additive indices. The purpose in using additive indices, as opposed to complete estimation factor scores, was to only include those items in the factor scores with a criterion loading that exceeded .55. This allowed for the elimination of item weightings on the factor scores that fell below the loading criteria established.

These additive indices are more easily interpreted and obtained better conceptual clarity. Since every item loads on every factor at some level, these loadings appear as weights in the complete estimation factor scores. While mathematically more precise for what a factor is, the items loading at above the .55 criterion level are more easily interpretable—a reader can know exactly which items comprised a score. So instead of using complete scores, factor scores comprised of simple additive indices of items loading on specific factors at above .55 were created for each factor. The intercorrelation between scores was computed, and coefficient alpha was computed for each score to determine its internal consistency. An analysis was conducted to examine the intercorrelations among the factors to determine to what extent the factors were related.

An oblique rotation (Promax) was also computed to determine if it yielded a conceptually more meaningful solution. A comparison of the number of items included in each factor for both rotations is presented in Table 19. As can be seen, the factors generated under both rotations are nearly identical. For

Table 19

Comparison of Four Factor Solution at or Above .55 Criterion Level: Orthogonal and Oblique Rotations

	Orthogonal	Loading	Oblique	Loading
Factor 1:	49	0.72	47	0.78
	48	0.71	49	0.74
	50	0.69	48	0.74
	46	0.68	46	0.73
	47	0.68	50	0.72
	52	0.65	52	0.68
	42	0.63	42	0.63
	51	0.62	53	0.61
	43	0.62	51	0.60
	53	0.61	40	0.59
	31	0.61	41	0.56
	41	0.60	31	0.55
	40	0.59	43	0.55
	30	0.58	30	0.52
	32	0.57	32	0.51
Total items loading	**15**		**13**	
Factor 2:	16	0.87	1	0.81
	15	0.87	2	0.79
	17	0.85	8	0.77
	18	0.84	9	0.73
	13	0.83	27	0.73
	14	0.73	26	0.68
	20	0.57	3	0.55
Total items loading	7		7	
Factor 3:	8	0.79	15	0.92
	1	0.78	16	0.92
	2	0.78	17	0.89
	9	0.76	18	0.89
	27	0.75	13	0.86
	26	0.71	14	0.74
	3	0.65	20	0.53
Total items loading	7		**6**	
Factor 4:	11	0.71	11	-0.75
	10	0.67	10	-0.70
	4	0.63	4	-0.65
	6	0.62	6	-0.64
			12	-0.55
Total items loading	**4**		**5**	

this reason I decided to select the Varimax rotation since they are generally easier to interpret.

Factor I: Concerns About the Quality of Course Offerings.

The 15 deterrent items with substantial loading on Factor I consisted mainly of perceptions related to the quality of Web-based continuing professional education. Table 20 provides variable loadings, item means and scale ranks for Factor I.

Table 20

Factor I: Concerns About the Quality of Course Offerings

Item No.	Deterrent item	Loading Value	Item Mean	Scale Rank
49	I am concerned about the *relevancy* of course content in a Web-based CPE course.	0.72	2.44	39
48	I am concerned about the *accuracy* of course content in a Web-based CPE course.	0.71	2.42	40
50	I am concerned that other people might not place as high a value on Web-based CPE courses as on other forms of CPE.	0.69	2.67	33
46	I am concerned that CPE credits may not be properly documented by the provider for a Web-based CPE course.	0.68	2.74	32
47	I am concerned that the State Board of Accountancy will not recognize CPE credits earned in a Web-based CPE course.	0.68	2.91	29
52	I am concerned about submitting *financial* information over the Internet in order to participate in a Web-based CPE course.	0.65	3.68	11
42	I am concerned that I can't get a course recommendation from other CPAs who have taken a Web-based CPE course.	0.63	3.22	19
51	I am concerned about submitting *written comments* over the Internet in order to participate in a Web-based CPE course.	0.62	2.58	34
43	I am concerned that a Web-based CPE course would take too long to complete.	0.62	3.36	16
53	I am concerned about submitting *personal* information over the Internet in order to participate in a Web-based CPE course.	0.61	3.77	10
31	I am concerned that electronic discussion in Web-based CPE courses would lack focus.	0.61	3.02	25

Item No.	Deterrent item	Loading Value	Item Mean	Scale Rank
41	I am concerned that I don't know how to evaluate the quality of a Web-based CPE course before enrolling in it.	0.60	3.79	8
40	I am concerned that a Web-based CPE course might not provide printed reference materials for me to use in my work.	0.59	3.38	15
30	I am concerned that electronic communication could be misinterpreted during participation in Web-based CPE courses.	0.58	2.49	38
32	I am concerned that Web-based CPE courses might not provide immediate feedback.	0.57	3.11	22

The items comprising Factor I look at quality from two perspectives--evaluation of the quality of course offerings to self and quality of course offerings to others. The 12 deterrent items dealing with self assessment of quality reflect professional concerns, security concerns, and personal concerns. Five variables (item numbers 49, 48, 42, 43, 40) reflect professional concerns, three variables (item numbers 52, 51, 53) reflect security concerns, and four variables (item numbers 31, 41, 30, 32) reflect personal concerns. The three deterrent items in which concerns about the ways others might assess the course offerings reflect concerns for others in general (item number 50) and concerns for continuing professional education-associated organizations in particular (item numbers 46, 47). The item means for this factor ranged from 2.42 – 3.80 with an average of 3.03. Only Factor II had a higher mean items mean.

Factor II: Concerns About Electronically-Mediated Communication.

The seven deterrent items with substantial loading on Factor II consisted of preferences concerning various aspects of electronic communication. Table 21 provides the variable loadings, items means, and scale ranks for Factor II. The conceptual content of this factor included rejection of electronically-mediated interpersonal interactions and rejection of electronically-mediated continuing

Table 21

Factor II: Concerns About Electronically-Mediated Communication

Item No.	Deterrent item	Loading Value	Item Mean	Scale Rank
16	I prefer face-to-face interaction with the *instructor* rather than electronic communication used in Web-based CPE courses.	0.87	4.01	3
15	I prefer face-to-face interaction with my *peers* rather than electronic communication used in Web-based CPE courses.	0.87	3.89	6
17	I prefer hearing CPE lectures in person rather than reading them on a *computer screen.*	0.85	4.20	1
18	I prefer hearing CPE lectures in person rather than hearing them through a *computer speaker.*	0.84	3.93	5
13	I prefer traditional classroom instruction over Web-based CPE courses.	0.83	4.00	4
14	I prefer using printed materials over the kind of electronic materials (e.g., computer screens, E-mails) used for Web-based CPE courses.	0.73	3.86	7
20	I don't believe that Web-based CPE courses have sufficient advantages to justify using it for CPE.	0.57	2.75	31

professional education. The two deterrent items indicating rejection of electronically-mediated interpersonal interactions included preferences regarding interactions with continuing professional education instructors (item number 16) and preferences regarding interactions with respondents' peers (item number 15). The five variables reflecting rejection of electronically-mediated continuing professional education include both preferences regarding specific aspects of Web-based continuing professional education and opinions of Web-based continuing professional education in general. Four variables (item numbers 17, 18, 13, 14) cluster into preferences regarding specific aspects of Web-based continuing professional education, and one variable (item number 20) is concerned with Web-based continuing professional education in general.

The item means for this factor ranged from 2.75 – 4.20. With an average of 3.80, Factor II had the highest mean items mean of the four factors.

Factor III. Concerns About Access to Technology-Associated Resources

The seven deterrent items with substantial loading on Factor III were all concerned with access to various technology-associated resources. Table 22 describes the variable loadings, items means, and scale ranks for Factor III.

Table 22

Factor III: Concerns About Access to Technology-Associated Resources

Item No.	Deterrent item	Loading Value	Item Mean	Scale Rank
8	I don't have reliable enough access to the *Internet* to participate in Web-based CPE courses.	0.79	1.89	52
1	I don't have the *computer hardware* necessary to participate in Web-based CPE courses.	0.78	1.55	57
2	I don't have the *computer software* necessary to participate in Web-based CPE courses.	0.78	1.86	53
9	I don't have reliable enough access to *electronic mail (E-mail)* to participate in Web-based CPE courses.	0.76	1.79	56
27	I am concerned the cost of *connecting to the Internet* is too high to justify participating in Web-based CPE courses.	0.75	1.80	55
26	I am concerned the cost of *purchasing the computer hardware* needed to participate in Web-based CPE courses is too high.	0.71	2.03	50
3	I don't have the technical knowledge necessary to participate in Web-based CPE courses.	0.65	1.89	51

The items comprising Factor III address two types of resources: Web-based technology, financial resources, and specialized knowledge resources. Four variables (item numbers 8, 1, 2, 9) reflect Web-based technology resource concerns, two variables (item numbers 27, 26) reflect financial resource concerns, and one variable (item number 3) addresses specialized knowledge resource concerns. The items means on all of these variables are relatively low.

The item means for this factor ranged from 1.55 – 2.03. With an average of 1.82, Factor III had the lowest mean items mean of the four factors.

Factor IV. Concerns About the Availability of Necessary Personal Resources

The four deterrent items with substantial loading on Factor IV consisted mainly of concerns about the personal resources required to participate in Web-based continuing professional education. Table 23 describes variable loadings, item means, and scale ranks for each of the deterrent items in Factor IV.

Table 23

Factor IV: Concerns About the Availability of Necessary Personal Resources

Item No.	Deterrent item	Loading Value	Item Mean	Scale Rank
11	I don't have the *patience* to learn how to use the Web for a Web-based CPE course.	0.71	2.22	48
10	I don't have the *time* to learn how to use the Web for a Web-based CPE course.	0.67	2.31	41
4	I don't have the *confidence* necessary to participate in Web-based CPE courses.	0.63	1.83	54
6	I don't have the *skill* to download the necessary computer software from the Internet (e.g., browsers, sound, video, graphics applications) in order to participate in Web-based CPE courses.	0.62	2.24	47

The conceptual content of Factor IV included two deterrent items (item numbers 11, 4) which address internal characteristics of personality and two deterrent items (item numbers 10, 6) which address external constraints of personal time and specialized skill. The item means for this factor ranged from 1.83 – 2.31 with an average of 2.15. Only Factor III had a lower mean items mean.

Twenty four items failed to load on any factor. However, as can be observed in Table 24, these nonloading items generally support the conceptual integrity of the categories described above.

Table 24

Nonloading Items for Four Factor Solution at .55 Criterion Level

Rank No.	Item No.	Deterrent item	Item Mean	Highest Loading[a]
2	57	It has never occurred to me to participate in Web-based CPE courses to complete my CPE requirements.	4.03	.40 on Factor 4
9	37	I am concerned that I might have too many interruptions in my office or home to participate in Web-based CPE courses.	3.79	.45 on Factor 1 .43 on Factor 2
12	38	I am concerned that I would not participate enough in the on-line discussions in a Web-based CPE course.	3.65	.48 on Factor 1 .47 on Factor 2
13	34	I am concerned that the instructor of a Web-based CPE course may not be available when I need assistance.	3.55	.54 on Factor 1 .43 on Factor 2
14	33	I am concerned about spending too much time staring at a computer screen while participating in Web-based CPE courses.	3.46	.50 on Factor 1 .50 on Factor 2
17	21	I don't believe that there are enough CPE providers offering Web-based CPE courses.	3.35	.44 on Factor 4
18	54	I am concerned that a Web-based CPE course would provide less variety than I could get at a conference.	3.30	.51 on Factor 1 .43 on Factor 2
20	22	I don't believe that the course topics I want are available through Web-based CPE courses.	3.20	.51 on Factor 4
21	23	I'm concerned that downloading CPE course materials from the Web will take too long.	3.17	.46 on Factor 1 .44 on Factor 4
23	45	I am concerned I might not have enough self-motivation to complete a Web-based CPE course.	3.08	.44 on Factor 2
24	44	I am concerned about learning highly technical accounting information on computer in a Web-based CPE course.	3.04	.53 on Factor 1
26	56	I am concerned that using Web-based CPE courses would be too frustrating.	2.98	.51 on Factor 1 .46 on Factor 4

Rank No.	Item No.	Deterrent item	Item Mean	Highest Loading[a]
27	24	I'm concerned that my computer may take too long to bring up screen displays in Web-based CPE courses.	2.96	.47 on Factor 1 .43 on Factor 4
28	35	I am concerned that Web-based CPE courses might involve completion of written work.	2.92	.48 on Factor 1
30	36	I am concerned that Web-based CPE courses might involve completion of exams.	2.89	.48 on Factor 1 .40 on Factor 4
35	5	I am reluctant to download the necessary computer software from the Internet (e.g., browsers, sound, video, graphics applications) in order to participate in Web-based CPE courses.	2.55	.52 on Factor 4 .45 on Factor 3
36	39	I am concerned that the graphics and movies in a Web-based CPE course would be too distracting.	2.55	.48 on Factor 1
37	12	I don't have access to adequate technology support services if I have a computer-related problem during a Web-based CPE course.	2.54	.54 on Factor 4
42	28	I am concerned the cost of printing downloaded course materials is too high to justify participating in Web-based CPE courses.	2.27	.53 on Factor 3 .42 on Factor 1
43	55	I am concerned I would be unable to combine vacation time with fulfilling my CPE obligation if I participated in Web-based CPE courses.	2.25	No loading on any factor
44	29	I'm concerned that I might get lost moving around Web sites during Web-based CPE courses.	2.25	.48 on Factor 3 .48 on Factor 4
45	19	I don't believe participating in Web-based CPE courses is cost-effective.	2.25	No loading on any factor
46	25	I'm concerned that the Web sites used in Web-based CPE courses might change their appearance between the times I use them.	2.24	.42 on Factor 1
49	7	I don't have the authority in my work environment that allows me to download the necessary computer software from the Internet (e.g., browsers, sound, video, graphics applications).	2.08	.51 on Factor 3

[a] Highest loading at or above .40 criterion level

The overall mean score for the 57-item scale was 2.88, roughly equivalent to the scale descriptor "weakly disagree." Likewise, the overall mean score for the 24 items that failed to load on any factor was 2.93, also roughly equivalent to the scale descriptor "weakly disagree."

Table 25 presents the intercorrelations among the four factors: Concerns about Quality of Course Offerings, Concerns about Electronically-Mediated Communication, Concerns about Access to Technology-Associated Resources, and Concerns about the Availability of Necessary Personal Resources.

Table 25

Intercorrelations Among Factors

	Electronically-Mediated Communication	Technology-Associated Resources	Necessary Personal Resources
Quality of Course Offerings	.452	.398	.452
Electronically-Mediated Communication		.237	.347
Technology-Associated Resources			.642

All of the intercorrelations among the factors were statistically significant at the 0.01 level. The greatest correlation occurred between Factor III, Concerns About Access to Technology-Associated Resources, and Factor IV, Concerns About the Availability of Necessary Personal Resources. Forty-one percent of the variance in Factor III was accounted for by the variance in Factor IV. The remaining factor correlations indicated coefficients of determination to be 20% or below. These intercorrelations indicate the factors are conceptually distinct and maintain divergent validity.

Factor analysis revealed four major conceptual factors that might limit participation in Web-based continuing professional education by members of the Georgia Society of Certified Public Accountants (Georgia Society of CPAs). The ranking of the factors by mean item means is presented in Table 26.

Table 26

Mean Item Means for Four Factors at .55 Criterion Level

Rank	Factor	Factor Name	Mean	Minimum	Maximum
1	II	Concerns About Electronically-Mediated Communication	3.80	2.75	4.20
2	I	Concerns About the Quality of Course Offerings	3.03	2.42	3.80
3	IV	Concerns About the Availability of Necessary Personal Resources	2.15	1.83	2.31
4	III	Concerns About Access to Technology-Associated Resources	1.82	1.55	2.03

Findings Related to Research Questions #3

The third research question asked, "To what extent are personal and professional variables related to derived deterrent factors?" The 10 variables about which information was gathered included age, gender, years as a CPA, practice arena, total number of continuing professional education hours completed in the last reporting cycle, number of those total hours completed using some form of self study, number of those total hours completed using Web-based courses, potential number of hours of Web-based continuing professional education to be completed in the next reporting period, and previous use of the Internet to purchase goods or services.

As described more fully in Chapter III, I examined a series of bivariate relationships for each of these personal and professional variables. Of the 10 variables capable of being manipulated though, only nine were used in this

statistical analysis. The number of respondents who had completed any hours of continuing professional education using Web-based courses was extremely small (7/433). Therefore this variable could not be used to generate meaningful statistical relationships. As a result, only 36 of the 40 possible bivariate relationships were analyzed. Depending on the level of measurement, the analysis conducted on these 36 relationships was either a correlation or a t-test. From this analysis, 17 statistically significant findings emerged.

Relationships to Factor I: Concerns About the Quality of Course Offerings

Two relationships emerged for Factor I:

- There was a statistically significant difference between the means for CPAs who had previously purchased goods or services via the Internet and the mean for those who had not previously purchased goods or services via the Internet regarding their Concerns About the Quality of Course Offerings (Factor I). CPAs who had made previous purchases via the Internet were less deterred by concerns about the quality of course offerings than CPAs who had not previously purchased goods or services via the Internet ($t = -5.18$, $df = 427$, $p = .000$).
- There was a statistically significant negative relationship between the total number of hours of Web-based continuing professional education CPAs projected for completion in the next reporting period and Concerns about the Quality of Course Offerings (Factor I). The more hours a CPA projected for completion using Web-based courses, the less likely he or she was deterred from participation in Web-based continuing professional education by concerns about the quality of course offerings ($r = -.32$, $r^2 = .10$, $p = .000$).

Relationships to Factor II: Concerns About Electronically-Mediated Communication

Eight relationships emerged for Factor II:

- There was a statistically significant positive relationship between age and Concerns About Electronically-Mediated Communication (Factor II). The older a CPA was, the more likely he or she was to views aspects of electronically-mediated communication as a deterrent to participation in Web-based continuing professional education ($r = .14$, $r^2 = .02$, $p = .004$).
- There was a statistically significant positive relationship between years certified as a CPA and Concerns About Electronically-Mediated Communication (Factor II). The longer a CPA had held his or her certification, the more likely he or she was to view aspects of electronically-mediated communication as a deterrent to participation in Web-based continuing professional education ($r = .16$, $r^2 = .03$, $p = .001$).
- There was a statistically significant positive relationship between the total number of continuing professional education hours completed during the last reporting period and Concerns About Electronically-Mediated Communication (Factor II). The more hours of continuing professional education a CPA had completed during the last reporting period, the more likely he or she was to view aspects of electronically-mediated communication as a deterrent to participation in Web-based continuing professional education ($r = .12$, $r^2 = .01$, $p = .018$).
- There was a statistically significant negative relationship between the total number of hours of self-study-based continuing professional education completed in the last reporting period and Concerns about Electronically-Mediated Communication (Factor II). The more hours

a CPA completed using self study, the less likely he or she was to view aspects of electronically-mediated communication as a deterrent to participation in Web-based continuing professional education ($r = -.23$, $r^2 = .05$, $p = .000$).

- There was a statistically significant negative relationship between the total number of hours of Web-based continuing professional education CPAs projected for completion in the next reporting period and Concerns about Electronically-Mediated Communication (Factor II). The more hours a CPA projected for completion using Web-based courses, the less likely he or she was to view aspects of electronically-mediated communication as a deterrent to participation in Web-based continuing professional education ($r = -.55$, $r^2 = .30$, $p = .000$).
- There was a statistically significant difference between the means for males and the means for females regarding their Concerns About Electronically-Mediated Communication (Factor II). Males were more deterred by aspects of electronically-mediated communication than were females ($t = -3.36$, $df = 432$, $p = .001$).
- There was a statistically significant difference between the means for CPAs who had previously purchased goods or services via the Internet and those who had not regarding their Concerns about Electronically-Mediated Communication (Factor II). CPAs who had made previous purchases via the Internet were less deterred by concerns about electronically-mediated communication than CPAs who had not previously purchased goods or services via the Internet ($t = -3.88$, $df = 433$, $p = .000$).
- There was a statistically significant difference between the means for CPAs in the arena of public practice and the mean for CPAs in industry regarding Concerns About Electronically-Mediated

Communication (Factor II). CPAs in public practice were more deterred by concerns about electronically-mediated communication than were CPAs in industry ($t = 2.78$, $df = 375$, $p = .006$).

Relationships to Factor III: Concerns About Access to Technology-Associated Resources

Two relationships emerged for Factor III:

- There was a statistically significant negative relationship between the total number of hours of Web-based continuing professional education CPAs projected for completion in the next reporting period and Concerns about Access to Technology-Associated Resources (Factor III). The more hours a CPA projected for completion using Web-based courses, the less likely he or she was to view technology-associated resources as a deterrent to participation in Web-based continuing professional education ($r = -.27$, $r^2 = .07$, $p = .000$).
- There was a statistically significant difference between the means for CPAs who had previously purchased goods or services via the Internet and the mean for those who had not previously purchased goods or services via the Internet regarding their Concerns About Access to Technology-Associated Resources (Factor III). CPAs who had made previous purchases via the Internet were less deterred by concerns about access to technology-associated resources than were CPAs who had not previously purchased goods or services via the Internet ($t = -8.38$, $df = 278$, $p = .000$).

Relationships to Factor IV: Concerns About the Availability of Necessary Personal Resources

Five relationships emerged for Factor IV:

- There was a statistically significant positive relationship between age and Concerns About the Availability of Necessary Personal Resources

(Factor IV). The older a CPA was the more likely he or she was to view limitations on the availability of necessary personal resources as a deterrent to participation in Web-based continuing professional education (r = .14, r^2 = .02, p = .004).

- There was a statistically significant positive relationship between years certified as a CPA and Concerns About Availability of Necessary Personal Resources (Factor IV). The longer a CPA had held his or her certification, the more likely he or she was to view the unavailability of necessary personal resources as a deterrent to participation in Web-based continuing professional education (r = .20, r^2 = .04, p = .000).
- There was a statistically significant negative relationship between the total number of hours of Web-based continuing professional education CPAs projected for completion in the next reporting period and Concerns about the Availability of Necessary Personal Resources (Factor IV). The more hours a CPA projected for completion using Web-based courses, the less likely he or she was to view the availability of necessary personal resources as a deterrent to participation in Web-based continuing professional education (r = -.33, r^2 = .11, p = .000).
- There was a statistically significant difference between the means for CPAs who had previously purchased goods or services via the Internet and the mean for those who had not previously purchased goods or services via the Internet regarding Concerns About the Availability of Necessary Personal Resources (Factor IV). CPAs who had not made previous purchases via the Internet were more deterred by concerns about the availability of necessary personal resources than CPAs who had previously purchased goods or services via the Internet (t = -8.57, df = 351, p = .000).

- There was a statistically significant difference between the means for CPAs in the arena of public practice and the mean for CPAs in industry regarding Concerns About the Availability of Necessary Personal Resources (Factor IV). CPAs in public practice were more deterred by concerns about the availability of necessary personal resources than CPAs in industry ($t = 2.76$, $df = 371$, $p = .006$).

Chapter Summary

This chapter discussed the findings of a study that explored deterrents to participation in Web-based continuing professional education by certified public accountants. Of the top 10 items that acted as individual deterrents to participation Web-based education, the majority (7/10) involved educational methodology preferences. The other three encompassed evaluation concerns, time constraint concerns, and security concerns. All of the 10 bottom ranked items—that is, those that provide the least deterrence to participation by CPAs in Web-based education—fell conceptually into the category of access to resources; either technology-associated resources, personal resources, or political resources.

Moving from specific individual deterrent items to the broad forces that deter CPAs from participating in Web-based continuing professional education, four derived factor structures were identified. These four factors were: Concerns About the Quality of Course Offerings, Concerns About Electronically-Mediated Communication, Concerns About Access to Technology-Associated Resources, and Concerns About the Availability of Necessary Personal Resources.

Finally, relationships between the personal and professional variables and the factor scores were analyzed to provide a better understanding of how CPAs may be affected differently by these broad deterrent factors. Seventeen significant findings emerged from this analysis.

CHAPTER V
DISCUSSION OF FINDINGS

The purpose of this chapter is to present a summary of the study, discuss the survey findings, consider implications for practice and research in continuing professional education, and suggest areas for further investigation.

Study Summary

This study gathered data from a systematic sample of in-state, certified public accountants (CPAs) with membership in the Georgia Society of Certified Public Accountants in order to obtain information concerning their perceptions of Web-based continuing professional education. This study concentrated on identifying phenomenon that would deter CPAs from participating in Web-based continuing professional education. The purpose of the study was to identify deterrents to participation in Web-based continuing professional education for certified public accountants. The following three research questions were studied: What is the relative importance of deterrents to participation in Web-based continuing professional education for certified public accountants in Georgia? Can individual deterrents be reduced to a more parsimonious framework through factor analysis? To what extent are personal and professional variables related to derived deterrent factors?

A research tool in the form of a survey instrument was developed to address the research questions of this study. Specifically, a survey was developed to measure CPAs' perceptions of various deterrents to the use of Web-based continuing professional education. The theoretical framework for the survey and the overall study was adapted from Scanlan and Darkenwald's (1984) and

Darkenwald and Valentine's (1985) deterrent paradigm incorporated into adult education participation theory. The item pool for the survey was created from four sources: (a) a review of Web-based education and continuing professional education literature, (b) E-mail interviews with practicing certified public accountants, (c) telephone interviews with continuing professional education administrators, and (d) E-mail interviews with practitioners of continuing professional education. The item pool refinement process entailed several critique sessions, rewriting of items, administering of the survey to a pilot sample, and further critiques and rewrites. The final instrument consisted of 57 deterrent items and 10 personal and professional variables.

The sample for the survey was selected from the membership of the Georgia Society of CPAs. Members listed as in-state CPAs were eligible to be selected for the random sample of 700 CPAs receiving the survey. After an initial mailing and three follow-up mailings, the overall adjusted response rate for the survey was 55.6%.

Using a ranking of all deterrent items, the relative importance of individual deterrent items was determined. Taken together, the research suggests that some of the deterrent items were relatively more important than others in deterring CPAs from participating in Web-based continuing professional education. Also, factor analysis was used to identify four factor constructs underlying the deterrent items on the survey. These included concerns about quality of course offerings (Factor I), concerns about electronically-mediated communication (Factor II), concerns about access to technology-associated resources (Factor III), and concerns about the availability of necessary personal resources (Factor IV). Factors I and II had more deterrent power over CPAs than did Factor III and IV. In addition, relationships between the factor scores and the personal and professional variables were determined.

Seventeen statistically significant relationships were found between some of the personal and professional variables and the four factor additive indices.

Discussion of Findings

This study has addressed the three stated research questions. Each of the findings is discussed below.

Findings Related to Research Question #1

It is interesting to note the highest-ranking items for these members of the Georgia Society of CPAs relate to concerns about the specifics of electronic education and electronic interaction. This is attitudinal in nature and tends to make a statement of a desire for protection of how they have always completed their continuing professional education requirements.

Specifically, seven of the top 10 highest-ranking deterrents deal directly with concerns about the specifics of electronic education. Their preference for traditional classroom education in general, lectures, and printed materials supports the literature indicating a resistance to change (Rogers, 1995). Also, their concern about the electronic interaction with instructors and interaction with peers supports the literature stating that interaction is a primary stumbling block for electronic education (Eastmond, 1995; McCormack & Jones, 1998; Moore & Kearsley, 1996; Nguyen, Tan, & Kezunovic, 1996; Webb & Street, 1997; Wiesenberg & Hutton, 1995).

Other things that served as individual deterrents ultimately had much lower readings for this group of Georgia Society of CPAs members. Clearly, the reason why they are not participating in Web-based continuing professional education is not principally related to difficulty in accessing necessary resources, particularly those associated with technology. Six of the 10 lowest-ranking individual deterrents express this in several ways in terms of hardware, software, and network connectivity. This is congruent with findings of earlier

research in which a high percentage of CPAs indicated the availability of technology-associated resources necessary to participate in Web-based continuing professional education (Perdue & Valentine, 1998). However, this is in contrast with literature indicating that the availability of technology serves as a barrier to Web-based education for the general population (Filipczak, 1995; Gantz, 1997; Khan, 1997a; Lockheed Idaho Technologies Co., 1995; Mak & Mak, 1995; McCormack & Jones, 1998; Owston, 1997; Webb & Street, 1997; Wulf, 1996). This may be explained by the business context in which CPAs work. Rapid changes in technology and its continued widespread use has driven the use of technology into the accounting profession, and as a consequence, technology-associated resources are necessary tools to be used in their business environments. This would make technology-associated resources more available to CPAs as opposed to the general population.

Items dealing with their own knowledge, patience, and confidence in interacting with Web-based continuing professional education as well as authority to download are also included in the 10 lowest-ranking items. The research can assert that CPAs are not deterred nearly as much by confidence, knowledge, and skill capacity to participate in Web-based continuing professional education. Also, having the authority to participate is not much of a problem. This again appears to contrast with the literature that indicates the lack of personal characteristics and the presence of personal constraints deters participation (Eastmond, 1995; Filipczak, 1995; McCormack & Jones, 1998; Romiszowski, 1997; Webb & Street, 1997). Again, the difference is partially explainable by the contextual arena of the study. As professionals, CPAs have moved to include the use of technology in their business activities. Utilization of the technology, combined with their educational and training achievements,

may serve to enhance their knowledge and skills to interact with Web-based continuing professional education and build their confidence in doing so.

Findings Related to Research Question #2

In moving beyond the specific individual deterrent items to the broad forces that deter, four factors were identified: (a) Concerns About the Quality of Course Offerings, (b) Concerns About Electronically-Mediated Communication, (c) Concerns About Access to Technology-Associated Resources, and (d) Concerns About the Availability of Necessary Personal Resources.

Factor I: Concerns About the Quality of Course Offerings

The second most powerful factor (as measured by mean ratings, see again Table 26) in terms of its power to deter participation is concerns about the quality of Web-based continuing professional education. CPAs are simply not convinced about the quality of the Web-based course offerings. Professionally, CPAs are concerned about the relevancy and accuracy of Web-based course content, the inability to obtain printed materials or course recommendations from other CPAs, and the issue of how long a Web-based course would take to complete. This supports Gantz (1997) and Hawkins (1997) who state that the biggest obstacles to Web-based education are the accuracy of course content and the richness of the offerings. The CPAs also expressed concerns about the quality of security in submitting financial or personal information and written comments over the Internet in order to participate in a Web-based course. This supports claims made by Wiesenberg and Hutton (1995) that learners participating in Web-based education were anxious about putting their written word out on the Internet due to the uncertainty of how it would be used in the future. It also supports Nguyen (1996) and McCormack (1998) who state that learners' concerns about the security of the Web is a significant challenge to overcome.

CPAs also expressed concerns that electronic discussions would lack focus and could be misinterpreted, they don't know how to evaluate the quality of a Web-based course, and Web-based courses might not provide immediate feedback. Concerns about the perception of the quality of courses offerings to others include the value placed on Web-based courses relative to other forms of continuing professional education and concerns about the documentation of continuing professional education and acceptance of those credits by their State Board of Accountancy or other administrative agency.

Factor II: Concerns About Electronically-Mediated Communication

The derived factor with the largest mean deals with concerns about electronically-mediated communication. This factor's mean is twice as high as the CPAs concern about access to the needed technology-associated resources. Collectively, the variables suggest a resistance to change among respondents. Specifically, a resistance to change in the way that continuing professional education has been traditionally conducted. This resistance is reflected as a rejection of electronically-mediated interpersonal communication. This indicates that CPAs clearly prefer face-to-face interaction with instructors and their peers over the electronically-mediated communication used in Web-based courses. This supports previous studies by Moore and Kearsley (1996) asserting that interaction is of critical importance in education facilitated at a distance. It also supports assertions by Simoff and Maher (1997) and Webb and Street (1997) that the loss of interactivity is a considerable challenge in the design of Web-based courses.

Also present are concerns about the use of electronic communication extended to all facets of its use as an educational medium. The CPAs polled in this study prefer hearing lectures given in traditional classroom settings over listening to lectures spoken through a computer speaker or reading them on a

computer screen. They also prefer print materials to E-mail. This is in agreement with McCormack and Jones (1998) who argue that students brought up on force-feeding education methods may have difficulty in adapting to any new method of education. In short, they prefer traditional modes of educational communication to the electronically-mediated variety. In general, most respondents don't believe that Web-based continuing professional education courses have sufficient advantages to justify using it for continuing professional education. This supports the previous study by Perdue and Valentine (1998) that indicated that while these CPAs had the technology-associated resources, they prefer holding onto the status quo.

Factor III: Concerns About Access to Technology-Associated Resources

The derived factor with the least power to deter CPAs from participating in Web-based continuing professional education is concerns about access to technology-associated resources. With the lowest average items mean, this factor indicates the lack of participation in Web-based continuing professional education courses is not principally related to difficulty in accessing necessary technology-associated resources. This is congruent with findings of earlier research by Perdue and Valentine (1998) that most CPAs have the technology-associated resources necessary to participate in Web-based continuing professional education.

The content of this factor is best reflected in three types of resources: Web-based technology-associated resources themselves, the financial resources necessary to obtain Web-based technology, and the specialized knowledge resources necessary to utilize Web-based technology. While the literature reflects lack of access to technology as a significant barrier to participation in Web-based education (Filipczak, 1995; Gantz, 1997; Khan, 1997a; Lockheed Idaho Technologies Co., 1995; Mak & Mak, 1995; McCormack & Jones, 1998;

Owston, 1997; Webb & Street, 1997; Wulf, 1996), CPAs indicate, by and large, that they have access to the technology required. This is in contrast to the literature and indicates that the importance of this barrier is specific to the population.

It is also interesting to note that CPAs, an extremely cost conscious group of professionals, do not perceive that the cost of acquiring the needed technology as important in their willingness to participate in Web-based continuing professional education. Again, this is in conflict with the literature that indicates cost is a major barrier to Web-based education (Dillon, 1997; Lockheed Idaho Technologies Co., 1995; McCormack & Jones, 1998; Owston, 1997). As discussed in Research Question #1, this difference may be explained by the adoption of technology by CPAs in order to perform their professional duties.

Factor IV: Concerns About the Availability of Necessary Personal Resources

The second least powerful derived factor in terms of its power to deter participation concerns the availability of necessary personal resources. Only the factor identified as concerns about technology-associated resources had a lower average items mean. Collectively, the variables suggest CPAs perceived themselves as having the personal resources necessary for participation in Web-based continuing professional education.

The content of this factor includes both internal characteristics and external constraints. Concerns about personal characteristics included respondent fears that they lack the patience to learn how to use the Web for a Web-based continuing professional education course and the confidence necessary to participate in Web-based continuing professional education courses. The CPAs indicate they have the patience and confidence to participate in Web-based continuing professional education. This fails to support the

literature indicating the lack of personal characteristics is a barrier to participation in Web-based education (Eastmond, 1995; Filipczak, 1995; McCormack & Jones, 1998; Romiszowski, 1997). This is partially explained by the level of education and work experience CPAs have received by the time they achieve their certification and by the detailed nature of the work they have selected to perform as their profession.

Concerns about constraints focused on issues external to the respondents and included the lack of time to learn how to use the Web and the lack of skill to download the computer software needed to participate in Web-based continuing professional education courses. Similar to their perceptions on personal characteristics, the CPAs indicated these personal constraints do not deter them from participation in Web-based continuing professional education. This again fails to support the literature claiming lack of time to learn how to use the Web and lack of necessary technical skills deter participation in Web-based education (Filipczak, 1995; McCormack & Jones, 1998; Webb & Street, 1997; Wulf, 1996). CPAs believe they have the skill set to participate in Web-based continuing professional education.

Findings Related to Research Question #3

Although the factor analysis contributes considerably to our understanding of what deters people, it doesn't help us understand for whom those deterrents operate more strongly or weakly than for others. The third research question, in which we examined the relationship between the factor scores and the personal and professional variables, begin to tell us that deterrents operate in different ways for different groups of people. The findings suggest some special considerations related to the personal and professional characteristics of the CPAs that we would have to consider in making use of these findings.

Age. The older a CPAs is, the more he or she is deterred from participation in Web-based continuing professional education by his or her concerns about electronically-mediated communication. Older CPAs are more apt to have a preference for doing things the old way. Also, the older the CPAs were, the more they are deterred from participation in Web-based continuing professional education by their concerns about the availability of necessary personal resources. This is inconsistent with Rogers' (1995) writings in which he asserts that early adopters of innovations are not different from later adopters in terms of age. For this population, age is a relevant characteristic for concerns about electronically-mediated communication and concerns about the availability of necessary personal resources in terms of deterring their participation in Web-based continuing professional education.

Arena of Practice. CPAs in public practice appear to differ from CPAs working in industry in regard as to their concerns about electronically-mediated communication and their concerns about necessary personal resources. CPAs in public practice are more inclined to be deterred from participation in Web-based continuing professional education due to both of these factors. That may be explained by a greater availability of technology and the opportunity to use it in industry organizations as opposed to small and medium-size public practice CPA firms that account for the majority of public CPA practices.

Education. Education did not interact with any of these factor scores. Although Rogers (1995) has indicated that years of formal education is positively correlated in the general population with the early adoption of innovation, that is not evident in this population. That is partially explainable by the fact that this is not a general population. This is a population in which all members are highly educated. Therefore, within this group, education has little or no relevance as a factor for comparison.

Gender. Males seem to be different from females in regard to their concerns about electronically-mediated communication. Males are more deterred by their concerns about electronically-mediated communication than are females. Females appear to be more open to the use of Web-based courses. This is inconsistent with the literature (Canada & Brusca, 1991; Mason & Kaye, 1989; Starr, 1997) that states females tend to participate in technology at a slower rate than their male counterparts. A partial explanation may be the multiple life roles conducted by females and their resulting need to find more flexible ways in which to complete their mandatory education requirements. Also, the influx of females into the accounting field is a fairly recent phenomenon. Consequently, they are less entrenched in the traditional manner in which continuing professional education has been conducted.

Internet Purchases of Goods or Services. The previous use of the Internet to purchase goods or services interacted with all four of the factor scores. CPAs with previous experience using the Internet for purchases were less apt to have concerns about the quality of Web courses or the availability of technology or necessary personal resources. Also, they were less apt to be concerned about electronically-mediated communication. It is interesting to note that at the time of instrument development the inclusion of the previous use of the Internet to purchase goods or services was included as a variable at the request of the Georgia Society of CPAs. It was not included for theoretical basis. However, findings of interaction with all four of the factor scores indicate the variable represents a knowledge of, or trust in, the use of the Internet. This supports Rogers' (1995) assertion that early adopters of innovations have greater knowledge of innovations. For this population, the previous use of the Internet is a relevant characteristic in the power of four of the factors to deter their participation in Web-based continuing professional education.

Total Continuing Professional Education Hours Completed During the Last Reporting Cycle. CPAs completing more total hours of continuing professional education during the last reporting cycle were more apt to have concerns about electronically-mediated communication. This may be explained by the simple fact that individuals completing a greater amount of continuing professional education enjoy doing so under the status quo method. Consequently, their preference for the traditional mode of education is stronger.

Total Continuing Professional Education Hours Completed Using Self-Study During the Last Reporting Cycle. CPAs who completed more of their continuing professional education using self-study methods were less apt to have concerns about electronically-mediated communication. These individuals have already demonstrated a willingness to participate in education that is self-directed and less traditional. This would provide an explanation as to their willingness to view Web-based continuing professional education in a more positive manner.

Total Continuing Professional Education Hours Completed Using Web-Based Courses During the Last Reporting Cycle. CPAs who completed more of their continuing professional education using Web-based methods were less apt to be concern about electronically-mediated communication. Also, they indicate less concern about technology-associated resources and necessary personal resources. However, the number of CPAs actually completing Web-based continuing professional education is extremely small and makes this finding difficult to interpret.

Total Web-based Continuing Professional Education Hours Projected for the Next Reporting Cycle. The total Web-based continuing professional education hours respondents projected for completion during the next reporting cycle interacted with all four of the factor scores. CPAs interested in completing

their continuing professional education through the use of Web-based courses were less apt to have concerns about either the quality of Web courses or the availability of technology or necessary personal resources. Also, they were less apt to be concerned about electronically-mediated communication. For this population, the expressed interest in Web-based continuing professional education is a relevant characteristic in the power of four of the factors to deter their participation in Web-based continuing professional education.

Years Certified as a CPA. The longer a CPA had held their certification, the more apt they are to have concerns about electronically-mediated communication and to be concerned about the availability of necessary personal resources. They prefer doing things in the establishment manner. For this population, years certified as a CPA is a relevant characteristic in the power of concerns about electronically-mediated communication and concerns about the availability of necessary personal resources to deter their participation in Web-based continuing professional education.

Implications for Practice and Research

This study provides practical contributions to the fields of continuing professional education and distance education. The Web is increasingly being used as a valuable augment to traditional classroom-based continuing professional education. By examining the dimensions and perceived deterrents that influence the extent to which professionals participate in continuing professional education via Web-based courses, continuing professional educators will be better prepared to facilitate participation in this increasingly important adjunct form of education. The identification of deterrents to participation in Web-based continuing professional education for certified public accountants may, therefore, result in the development of more responsive programming.

This study will provide a better understanding of deterrents to Web-based training of one particular group of adult students; specifically, certified public accountants. The results of this study will provide program planners with valuable insights into dimensions of influence on professional accountants. From the results of this study, 57 deterrent items were ranked according to their importance in deterring participation in Web-based continuing professional education. These individual deterrent items can be used as a list of prioritized crucial elements which must be addressed in planning of future programs and in communicating about those programs.

The study results also identified four deterrent factors that can be used as a broader framework for identifying issue to address when selecting course offerings and communicating those course offerings to the CPAs. The issues of quality and electronically-mediated communication will need to considered in assisting providers with information about the development of course offerings using a Web-based format. These same issues will need to be addressed in marketing Web-based courses to the CPAs by insuring that a thorough presentation of the Web-based educational process is communicated and appropriate training for this type of education is available.

Finally, this study has identified personal and professional characteristics that relate to the four derived deterrent factors. This information on what type of person is deterred from participation in Web-based continuing professional education by which type of deterrent can be used by program planners to better understand who the potential audience for Web-based education would be. Further, it helps identify the segments of the population who need more information on Web-based education in order to understand it better.

In addition to practical implications, this research provides theoretical contributions to the fields of continuing professional education and distance

education. Within the field of adult education, the literature has provided nonempirical and empirical support for inclusion of deterrents into theories of participation in adult education (Cross, 1981; Darkenwald & Merriam, 1982; Scanlan, 1986; Valentine & Darkenwald, 1990). Nothing, however, has been found in the literature concerning the identification of deterrents influencing participation in continuing professional education offered via Web-based training.

Having identified deterrents to participation to Web-based continuing professional education for a specific population of adults—that is, CPAs, an attempt was made to map the deterrent factors to the deterrent framework proposed in the adult education literature. I discovered some map quite clearly, some partially, and some not at all. This suggests deterrent categories may be context-based. This would indicate a need for further research to determine if different forms of education require reconceptualization of deterrent categories. Further research is also needed to determine if new technology, such as that used in various forms of distance education, would impact the conceptualization of deterrent categories.

Suggestions for Further Investigation

Further studies are needed to extend the current research and to investigate Web-based continuing professional education from a broader perspective. First, there is an important limitation in this study in that the results cannot be generalized to all CPAs or to professionals in general. Additional research is needed to replicate this study with similar populations of CPAs on a regional and national level. Doing so would aid in the understanding of the multidimensional constructs that are deterring CPAs as a population from participating in Web-based continuing professional education. Also needed is the replication of the study with other professional groups such as the legal and

healthcare professions. Although many of the deterrent items seem universally valid, some of the items are not. Given the rate at which Web-based education is proliferating, additional research is needed to identify the multidimensional constructs as they relate to different professional contexts.

Second, there is a need for further research to identify and describe distinctive type of adults, as defined by their perceived deterrents to participating in Web-based continuing professional education. The research objectives would be to divide the research population into distinct subgroups using cluster analysis and to describe the identified subgroups in terms of personal and professional variables. This would allow program planners to know how deterrent forces manifest themselves among a population of potential learners.

Third, there is a need to investigate Web-based continuing professional education deterrents through qualitative research. Through the use of interviewing and focus groups a more comprehensive, in-depth understanding of the deterrent factors would be revealed. Certainly, Factor II represents the strongest factor that exists. Perhaps a qualitative study in which a group of CPAs are interviewed to try to figure out to what extent it really is discomfort with the lack of face-to-face interaction versus a discomfort with the medium utilized in participating in Web-based continuing professional education courses.

Fourth, it would be worthwhile to expand this study to include administrators and providers of continuing professional education programs. Doing so would allow for the development of a more comprehensive and holistic understanding of the factors deterring participation in Web-based continuing professional education.

Finally, as increasing pressure to develop international accounting standards occurs, the Web could become an international delivery medium for

continuing professional education for CPAs. Additional research is needed to explore deterrents as they relate to professional accountants in international settings.

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APPENDICES

APPENDIX A

CPE REQUIREMENTS BY JURISDICTION

Jurisdiction	Requirement
Alabama	40 hours per year.
Alaska	80 hours in 2 years preceding biennial renewal
Arizona	80 hours in 2 years preceding biennial renewal for public practice. 60 hours - industry.
Arkansas	40 hours per year or 120 hours in 3 years preceding renewal.
California	80 hours in 2 years.
Colorado	80 hours in 2-year calendar period preceding biennial renewal.
Connecticut	40 hours per year.
Delaware	80 hours in 2-year period since the biennial renewal date, with a minimum of 20% in accounting, and/or auditing and minimum of 20% in taxation.
DC	80 hours at renewal; 40 hours per year.
Florida	80 hours of continuing education, of which 20 must be in accounting - and auditing - related topics and nor more than 20 can be in behavioral subjects, will be required in each 2-year reestablishment period.
Georgia	80 hours in 2 years immediately preceding the renewal date; 20 hours must be earned per years. May carry over up to 15 hours to next period, provided not in accounting and auditing subjects.
Guam	120 hours in 3 years preceding annual renewal, including at least 20 hours every year.
Hawaii	80 hours in biennium. May carry over excess up to 40 hours.
Idaho	Annual reporting. 80 hours in biennium immediately preceding renewal period. No less than 30/50 split over 2 years.
Illinois	120 hours every 3 years.

Jurisdiction	Requirement
Indiana	120 hours every 3 years.
Iowa	120 hours every 3 years.
Kansas	80 hours in biennium with 20 hours minimum each year. May carry-over 20 hours in each year.
Kentucky	80 hours every 2 calendar years if practicing public accounting; 60 hours every 2 calendar years if not practicing public accounting on a full-time basis.
Louisiana	120 hours every 3 years.
Maine	Minimum 20 hours each year, 120 hours every 3 years.
Maryland	80 hours in 2-year period preceding biennial registration.
Massachusetts	80 hours in 2-year period preceding biennial permit renewal.
Michigan	40 hours per year. 8 minimum hours must be in accounting and auditing subjects. May carry over excess hours to the next year.
Minnesota	120 hours in 3-year period preceding re-licensing.
Mississippi	40 hours per year; at least 20 hours earned during each 12-month period ending on 6/30; a minimum of 20% of the earned requirement must be in accounting and auditing.
Missouri	120 hours in the last 3 reporting years.
Montana	120 hours in 3 years ending 6/30 preceding license calendar year of which 24 must be in accounting or auditing subjects and 2 hours in ethics.
Nebraska	80 hours preceding 2 calendar years.
Nevada	80 hours in each 2-year period; at least 20 hours each calendar year.
New Hampshire	120 hours n 3-year period preceding license renewal. Excess hours may be carried forward to next succeeding triennial period only.
New Jersey	120 hours for each 3-year period.
New Mexico	120 hours in each 3-year period preceding re-registration

Jurisdiction	Requirement
New York	Either 40 hours in the general approved technical subjects or 24 hours exclusively in accounting, auditing, or taxation.
North Carolina	40 hours in each calendar year. Excess hours up to 20 may be carried forward 1 year.
North Dakota	120 hours in the preceding 3-year period. A minimum of 24 credit hours must be earned each year.
Ohio	120 hours every 3 years. Requirements: 24 hours auditing and accounting for licensees signing reports; 24 hours tax for licensees signing tax returns. At least 90 hours must be related to licensee's professional work.
Oklahoma	40 hours in each single calendar compliance period.
Oregon	80 hours in 2 years. May carry forward 20 hours excess for 2 years, but must have at least 60 hours in 2 years. A minimum of 24 hours in any year is required. PAs are required to meet the CPE requirement.
Pennsylvania	80 hours in 2 years immediately preceding renewal, including at least 16 hours of accounting and auditing subjects and 8 hours of tax subjects. May not carry over excess credits.
Puerto Rico	40 hours annually.
Rhode Island	120 hours (15 days) in 3-year period preceding annual registration.
South Carolina	40 hours each year.
South Dakota	120 hours in 3-year period preceding annual licensing.
Tennessee	80 hours in 2 years. Minimum 20 hours per year.
Texas	120 hours every 3 years with at least 20 hours each year.
Utah	80 hours in 2-year renewal period, no less than 20 hours each year. Under certain conditions, may apply for reduced hours after age 65. On application, may carry forward up to 40 hours to a following 2-year period, and 20 hours to the next succeeding period.
Vermont	120 hours in 3-year period preceding triennial registration.
Virginia	120 hours every 3 years. Minimum 20 hours annually.

Jurisdiction	Requirement
Virgin Islands	No CPE requirement.
Washington	Both licensed and non-licensed CPAs must complete 80 hours of CPE in the 1-calendar-year period preceding certificate renewal. The Board provides exemption for retired CPAs and other CPAs who do not use the title commercially or occupationally. Licensed
West Virginia	40 hours minimum first year; 80 hours requirement 2-year period; 120 hours minimum for 3-year rolling period. No less than 20 hours in any given year, provided licensee meets other minimum.
Wisconsin	No CPE requirement.
Wyoming	120 hours in 3-year fiscal period preceding annual licensing.

APPENDIX B

DETERRENTS TO USE OF THE INTERNET

(Wulf, 1996)

- Limited bandwidth
- Lack of sufficient up-to date equipment
- Newness of authoring systems
- Unreliable links
- Lack of Internet skills
- More reliance on student initiative

(Filipczak, 1995)

- Limited bandwidth (the capacity of the communications links)
- Slow modems hamper the delivery of sound, video, and graphics
- Reliance on learner initiative can be a drawback for those who prefer more structure
- Learner success depends on technical skills in computer operation and Internet navigation
- Learner success depends on the ability to cope with technical difficulties

(Wiesenberg & Hutton, 1995)

- Necessitated two to three times more delivery time
- Learners anxious about putting their written word "out there"
- Although course more democratic, less interactive then expected

(Eastmond, 1995)

- Lack of becoming comfortable with technology
- Lack of ability to determine how often to go online
- Lack of ability to deal with textual ambiguity
- Lack of ability to process information on or off line
- Lack of ability to seek and give feedback
- Lack of ability to use one's learning style to personalize the course

(Lockheed Idaho Technologies Co., 1995)

- Mistrust of the unknown
- Difficulty of comprehending the constantly changing, detail-demanding, and often oversold capabilities of the technologies
- A frequent shared opinion that use of technology in the training setting is a surrender to the entertainment media
- Lack of sufficient training for teachers/trainers/course designers/managers in the effective use of technology-based tools
- Incomplete research of specific cost-effectiveness associated with the use of various advanced technology training
- High front-end costs associated with computers and other communication systems
- Expectations on the part of many learners for high-energy, commercial quality, instantaneous, and tailored delivery of most information

(Webb & Street, 1997)

- No face-to-face contact (human interaction)
- Loss of immediacy in communication
- Computer literacy is required of both students and teachers
- Access to computer equipment is required
- Access to the Internet is required

(Simoff & Maher, 1997)

- Loss of interactivity and the single direction of the information flow
- Loss of ability to trace student participation in the sense of interaction with the course material, other students, and tutors

(Shell, 1998)

- People become concerned with the appearance of their text
- Without facial expressions, voice intonations, or gestures, relationships can be strange
- Jokes and irony can lead to misunderstandings
- The distancing safety of the medium can promote casual inflammatory and hurtful remarks

- Words are preserved forever in a computer database with the potential for unknown future use by others
- Large telelearning classes force users to follow gigantic discussions requiring a tremendous amount of reading
- Heavy required searching and browsing of virtually infinite online resources can also be overwhelming
- Limited tools for linking, relating comments, references, and ideas
- Poor mechanisms for viewing and manipulating linkages, or making decisions online
- International standards for graphics and sounds are only just emerging

(Hawkins, 1997)

- Lack of correctness and accuracy in content
- Cannot progress successfully through the course without encountering blind paths, erroneous hyperlinks, etc.

(Gantz, 1997)

- Cannot obtain reliable and fast access to users
- How fast the major IT vendors jump on the Web bandwagon and how rich their offerings are

(Nguyen, Tan, & Kezunovic, 1996)

- Generally recognized that Web client and server security is weak
- Necessitates regular technological assistance and support for the instructor to contact students through email or phone
- Many faculty members may not feel empowered by computer technology
- Lack of an outward orientation among technical support personnel
- Danger of some learners becoming 'lost in hyperspace' without any clear signposts as to where they are going

(Mak & Mak, 1995)

- Internet link down
- Time consuming – traffic slow
- Download time lengthened by graphics and audio or video components

- Sufficient RAM and disk space needed for multi-windows and multi-tasking
- More time spent on graphics, movies, etc. instead of content
- Lack of technical support
- Lack of relevant learning materials
- Too much "irrelevant" information
- Inability to access some materials
- Lack of simple user guides for beginners
- Navigation problem – lost direction
- Long download time
- Unsystematic learning mode
- Unable to play on computers without sound cards
- Network unbearably slow

(Owston, 1997)

- Computer hardware that malfunctions
- Difficult in setting up software to access an educational institution or Internet service provider
- Encountering constant busy signals when dialing up from home
- Heavy on-line traffic can overload popular Web sites so that they respond very slowly or simply do not respond
- Annoying drops in telephone line connections occur all too frequently
- Cost of dialing up the institution if the student is not within local calling distance
- Cost of using an Internet service provider long distance

(Kahan, 1997)

- Text-only format
- Requires downloading to the user's hard drive

(Learn while you surf, 1997)

- Download time
- Slow response time/waiting on screens to come up

(Some state boards offer resistance, 1997)

- Some state boards refuse to recognize certain entry-level technology courses

(Obstacles to improving teaching and learning, 1996)

- Limited and uneven access to equipment, software, and support services
- Expectations for the "products" are too high, too soon

(Dillon, 1997)

- User acceptance closely linked with download time and browser compatibility
- Initial high cost for online training tools

(McCormack & Jones, 1998)

- Students brought up on force-feeding education method may have difficulty in adapting to any new method of education
- Access to the Web and computers
- Access to the Web cost money
- Fees based on usage create anxiety
- Students require some form of training on how to use the Web
- Band width on the Web is limited
- Reliability of the Internet and its sites can be patchy
- Fierce competition between Web browser makers continues to drive nonstandard developments
- Issues of privacy, security and authentication
- Cost of printing materials has been transferred to the student
- Lack of physical cues of instructor and other students
- Lack of balance between educational and technical principles
- Information overload
- Distinguishing between what is necessary and what is useful
- Getting lost among the series of hyperlinks
- The network to which the students have access may not be fast enough to support the material you want to distribute
- Students' computers may not be powerful enough to handle material

- Students may have difficulty reading the material if they are not using a good-quality display
- Reading text on a computer screen.
- Asynchronous communication makes it difficult to determine if other participants have received the student's contributions
- Asynchronous communication can make it difficult to track the progress of a conversation
- Increased time commitment to address level of interaction
- Increased workload when moving from passive learners to active participants
- Spurring participation
- Unwanted or incorrect discussion
- Various forms of harassment

(Hedberg, Brown, & Arrighi, 1997)

- May not be available next time access is attempted
- May no longer exhibit the same form
- May not provide information sources to encourage student to acknowledge the origin and development of ideas
- Current limitations of low level authoring tools

(Khan, 1997b)

- Use of text based browsers limits users to only textual materials
- Limited bandwidth and large file sizes limit the speed of downloading multimedia elements
- Apt to diverge from their original task when they have too many choices
- Slower performance for sound, video and graphics can make WBI less efficient and less effective
- Risk of becoming lost in the Web and not fulfilling learner expectations
- Accessing the Web, downloading multimedia files, and adjusting to a new medium can sometimes be challenging
- Learners may lose focus on a topic due to the wide variety of sources that may be available on a WBI course
- Information may not always be accessed because of common problems related to servers such as connection refusal

- Necessary to take precautionary measures in sending materials to the correct address
- Initial cost of computer equipment and connectivity may be prohibitive for some people
- Many links may become obsolete because they are no longer active

(Starr, 1997)

- Cross-platform, browser-driven nature of HTML document display on the Web creates complexity
- Time to transmit/display large text and image files strikingly slower over Internet than when residing on the local computer

APPENDIX C

STUDY SURVEY INSTRUMENT

[Georgia Society of CPAs Letterhead]

CPE on the Internet (World Wide Web) for CPAs

Although many CPAs have access to computer systems and the Internet, comparatively few are using the Internet as a method of completing their continuing professional education (CPE) requirements. The Georgia Society of CPAs is interested in why this is the case. This questionnaire is designed to measure your perceptions about web based education as a means of completing CPE requirements.

> ***Definition of Web Based Education:*** *In the following questions, web based education means any form of education using computer systems and the Internet in which the professional and instructor are separated in place and/or time.*

SECTION I: PERCEPTIONS OF WEB-BASED CPE COURSES. Please answer each statement below by circling only one response.

	Strongly Disagree ↔ Strongly Agree
1. I don't have the *computer hardware* necessary to participate in web-based CPE courses.	1 2 3 4 5 6
2. I don't have the *computer software* necessary to participate in web-based CPE courses.	1 2 3 4 5 6
3. I don't have the *technical knowledge* necessary to participate in web-based CPE courses.	1 2 3 4 5 6
4. I don't have the *confidence* necessary to participate in web-based CPE courses	1 2 3 4 5 6
5. I am *reluctant* to download the necessary computer software from the Internet (e.g., browsers, sound, video, graphics applications) in order to participate in web-based CPE courses	1 2 3 4 5 6
6. I don't have the *skill* to download the necessary computer software from the Internet (e.g., browsers, sound, video, graphics applications) in order to participate in web-based CPE courses	1 2 3 4 5 6
7. I don't have the *authority* in my work environment to download the necessary computer software from the Internet (e.g., browsers, sound, video, graphics applications).	1 2 3 4 5 6
8. I don't have reliable enough access to the *Internet* to participate in web-based CPE courses.	1 2 3 4 5 6
9. I don't have reliable enough access to *electronic mail (e-mail)* to participate in web-based CPE courses.	1 2 3 4 5 6
10. I don't have the *time* to learn how to use the web for a web-based CPE course	1 2 3 4 5 6

	Strongly Disagree ◄► Strongly Agree
11. I don't have the *patience* to learn how to use the web for a web-based CPE course	1 2 3 4 5 6
12. I don't have access to adequate technology support services if I have a computer-related problem during a web-based CPE course	1 2 3 4 5 6
13. I prefer traditional classroom instruction over web-based CPE courses	1 2 3 4 5 6
14. I prefer using printed materials over the kind of electronic materials (e.g., computer screens, emails) used for web-based CPE courses	1 2 3 4 5 6
15. I prefer face-to-face interaction with my *peers* rather than electronic communication used in web-based CPE courses	1 2 3 4 5 6
16. I prefer face-to-face interaction with the *instructor* rather than electronic communication used in web-based CPE courses	1 2 3 4 5 6
17. I prefer hearing CPE lectures in person rather than reading them on a *computer screen*	1 2 3 4 5 6
18. I prefer hearing CPE lectures in person rather than hearing them through a *computer speaker*	1 2 3 4 5 6
19. I don't believe participating in web-based CPE courses is cost-effective	1 2 3 4 5 6
20. I don't believe that web-based CPE courses have sufficient advantages to justify using it for CPE	1 2 3 4 5 6
21. I don't believe that there are enough CPE providers offering quality web-based CPE courses	1 2 3 4 5 6
22. I don't believe that the course topics I want are available through web-based CPE courses	1 2 3 4 5 6
23. I am concerned that downloading CPE course materials from the web will take too long	1 2 3 4 5 6
24. I am concerned that my computer may take too long to bring up screen displays in web-based CPE courses	1 2 3 4 5 6
25. I am concerned that the web sites used in web-based CPE courses might change their appearance between the times I use them	1 2 3 4 5 6
26. I am concerned that the cost of *purchasing the computer hardware* needed to participate in web-based CPE courses is too high	1 2 3 4 5 6
27. I am concerned that the cost of *connecting to the Internet* is too high to justify participating in web-based CPE courses	1 2 3 4 5 6
28. I am concerned that the cost of *printing downloaded course materials* is too high to justify participating in web-based CPE courses	1 2 3 4 5 6
29. I am concerned that I might get lost moving around web sites during web-based CPE courses	1 2 3 4 5 6

	Strongly Disagree ↔ Strongly Agree
30. I am concerned that electronic communication could be misinterpreted during participation in web-based CPE courses.	1 2 3 4 5 6
31. I am concerned that electronic discussion in web-based CPE courses would lack focus	1 2 3 4 5 6
32. I am concerned that web-based CPE courses might not provide immediate feedback.	1 2 3 4 5 6
33. I am concerned about spending too much time staring at a computer screen while participating in web-based CPE courses.	1 2 3 4 5 6
34. I am concerned that the instructor of a web-based CPE course might not be available when I need assistance	1 2 3 4 5 6
35. I am concerned that web-based CPE courses might involve completion of *written work.*	1 2 3 4 5 6
36. I am concerned that web-based CPE course might involve completion of *exams*	1 2 3 4 5 6
37. I am concerned that I might have too many interruptions in my office or home to participate in web-based CPE courses.	1 2 3 4 5 6
38. I am concerned that I would not participate enough in the on-line discussions in a web-based CPE course.	1 2 3 4 5 6
39. I am concerned that the graphics and movies in a web-based CPE course might be too distracting	1 2 3 4 5 6
40. I am concerned that a web-based CPE course might not provide printed reference materials for me to use in my work.	1 2 3 4 5 6
41. I am concerned that I don't know how to evaluate the quality of a web-based CPE course before enrolling in it.	1 2 3 4 5 6
42. I am concerned that I can't get a course recommendation from other CPAs who have taken a web based CPE course.	1 2 3 4 5 6
43. I am concerned that a web-based CPE course would take too long to complete	1 2 3 4 5 6
44. I am concerned about learning highly technical accounting information in a web-based CPE course.	1 2 3 4 5 6
45. I am concerned that I might not have enough self-motivation to complete a web-based CPE course	1 2 3 4 5 6
46. I am concerned that CPE credits may not be properly documented by the provider for a web-based CPE course.	1 2 3 4 5 6
47. I am concerned that the State Board of Accountancy will not recognize CPE credits earned in a web-based CPE course	1 2 3 4 5 6

Strongly Disagree ◄► Strongly Agree

48. I am concerned about the *accuracy* of course content in a web-based CPE course. 1 2 3 4 5 6

49. I am concerned about the *relevancy* of course content in a web-based CPE course 1 2 3 4 5 6

50. I am concerned that other people might not place as high a value on web-based CPE courses as on other forms of CPE. 1 2 3 4 5 6

51. I am concerned about submitting *written comments* over the Internet in order to participate in a web-based CPE course 1 2 3 4 5 6

52. I am concerned about submitting *financial* information over the Internet in order to participate in a web-based CPE course 1 2 3 4 5 6

53. I am concerned about submitting *personal* information over the Internet in order to participate in a web-based CPE course 1 2 3 4 5 6

54. I am concerned that a web-based CPE course would provide less variety than I could get at a conference 1 2 3 4 5 6

55. I am concerned that I would be unable to combine vacation time with fulfilling my CPE obligation if I participated in web-based CPE courses. 1 2 3 4 5 6

56. I am concerned that using web-based CPE courses would be too frustrating . . . 1 2 3 4 5 6

57. It has never occurred to me to participate in web-based CPE courses to complete my CPE requirements 1 2 3 4 5 6

SECTION II: BACKGROUND – information totally confidential

58. During the last reporting period, approximately how many hours of CPE did you complete? __ Hours

59. Approximately how many of those CPE hours were completed using some form of self-study, including audiocassettes, videocassettes, text or computer? . . . . . ___Hours

60. More specifically, approximately how many of those CPE hours were completed using web based courses? . . . . . ____Hours

61. During the *next* reporting period, approximately how many hours of your CPE would you be interested in completing using web based CPE courses? . . . . . ___Hours

62. Have you ever used the Internet to purchase goods or services? (Circle *one*) . . . . Yes No

63. In what arena do you practice accounting? (Circle *one*.)
Public Practice Industry Education Government Other (specify) _____

64. What is your gender? (Circle *one*) . . . . . Female Male

65. What is your age? . . . . . _____ Years

66. How many years have you been certified as a CPA? . . . . . _____ Years

67. What is your highest educational degree?
Bachelors' Master's Doctorate Other (specify) _____

APPENDIX D

E-MAIL INTERVIEW REQUEST - CPAs

From: "Kathy J Perdue" <kperdue@mindspring.com>
To: "Patty Leathers" <pattyl@iafp.org>
Subject: Request for assistance
Date: Wed, 27 May 1998 12:18:05 -0400
X-Priority: 3
X-MSMail-Priority: Normal
X-Mailer: Microsoft Outlook Express 4.72.2106.4
X-MimeOLE: Produced By Microsoft MimeOLE V4.72.2106.4

Patty,

In reference to my doctoral dissertation, I am requesting feedback from you as a member of the GSCPAs. If you would be kind enough to answer the following questions for me, I would greatly appreciate it!

1. How would you react to earning CPEs on the World Wide Web?

2. What would you like about earning CPEs on the World Wide Web?

3. What would you dislike about earning CPEs on the World Wide Web?

4. What makes it difficult to earn CPEs on the World Wide Web?

I am working with the GSCPA to develop a survey to obtain information on the above and it would help me a lot if you would take the time to reply. Thanks!!

Kathy J. Perdue

APPENDIX E

SAMPLE RESPONSE - CPA

From: "Kathy J Perdue" <kperdue@mindspring.com>
To: "Patty Leathers" <pattyl@iafp.org>
Subject: Re: Request for assistance
Date: Wed, 27 May 1998 13:35:42 -0400
X-Priority: 3
X-MSMail-Priority: Normal
X-Mailer: Microsoft Outlook Express 4.72.2106.4
X-MimeOLE: Produced By Microsoft MimeOLE V4.72.2106.4

Patty,

Thanks for the prompt reply!!

Kathy

-----Original Message-----
From: Patty Leathers <pattyl@iafp.org>
To: 'Kathy J Perdue' <kperdue@mindspring.com>
Date: Wednesday, May 27, 1998 1:34 PM
Subject: RE: Request for assistance

>
>
>> -----Original Message-----
>> From: Kathy J Perdue [SMTP:kperdue@mindspring.com]
>> Sent: Wednesday, May 27, 1998 12:18 PM
>> To: Patty Leathers
>> Subject: Request for assistance
>>
>> Patty,
>>
>> In reference to my doctoral dissertation, I am requesting feedback
>> from you
>> as a member of the GSCPAs. If you would be kind enough to answer the
>> following questions for me, I would greatly appreciate it!
>>
>> 1. How would you react to earning CPEs on the World Wide Web?
> [Patty Leathers] I haven't tried it yet, but it seems like a
> reasonable and cost-effective method. I do use the Web to some extent,
> but have not ventured out very far.
>
>> 2. What would you like about earning CPEs on the World Wide Web?
> [Patty Leathers] Scheduling CPE would be completely at my

> discretion, and could be done from my home, at any time.
>
>> 3. What would you dislike about earning CPEs on the World Wide
>> Web?
> [Patty Leathers] I would miss the interaction with instructors
> and colleagues -- frequently, valuable information is gained from the
> comments and questions of others. The ability to work from my home
> when I pleased could also be a drawback for those of us who prefer the
> formality and structure of a classroom setting. The more flexibility
> available, the more likely I am to procrastinate!
>>
>> 4. What makes it difficult to earn CPEs on the World Wide Web?
> [Patty Leathers] That's hard to say until I've tried it. I
> think initially there will be those who resist using the WWW, just as
> there are those who have resisted learning to use computers. Who will
> maintain and document CPE credits -- state boards? state societies?
>
>
>> am working with the GSCPA to develop a survey to obtain information
>> on the above and it would help me a lot if you would
>> take the time to reply. Thanks!!
>>
>> Kathy J. Perdue
>>
> [Patty Leathers] Kathy, thanks for asking. My answers are
> brief, but hopefully will be helpful in some way.

APPENDIX F

E-MAIL REQUEST - CPE PROFESSIONALS

From: "Kathy J Perdue" <kperdue@mindspring.com>
To: <jcaswell@businessadvisor.com>
Subject: 3 questions!
Date: Thu, 18 Jun 1998 16:45:03 -0400
X-Priority: 3
X-MSMail-Priority: Normal
X-Mailer: Microsoft Outlook Express 4.72.2106.4
X-MimeOLE: Produced By Microsoft MimeOLE V4.72.2106.4

Ms. Caswell,

As an attendee to your session at the AICPA Technology Conference, I am requesting a favor. Would you assist me with my dissertation survey development by answering the following three questions. It would be greatly appreciated by both me and the Georgia Society of CPAs. Thanks!!

We recently did a study at the Georgia Society of CPAs and found:
- CPAs in Georgia have access to email and the Internet
- CPAs in Georgia are interested in the WWW
- CPAs in Georgia are not using the WWW for CPE.

1. Why do you think CPAs don't use Web based CPE?

2. What features would Web based CPE need to have for CPAs to use it?

3. What demographics (personal or professional) might impact on the use of Web based CPE by CPAs?

Thank you for your feedback!!

Kathy J. Perdue, CPA
Doctoral Student, University of Georgia

APPENDIX G

SAMPLE RESPONSE - CPE PROFESSIONAL

From: "Kathy J Perdue" <kperdue@mindspring.com>
To: "Janet Caswell" <jcaswell@businessadvisor.com>
Subject: Re: 3 questions!
Date: Fri, 19 Jun 1998 18:15:49 -0400
X-Priority: 3
X-MSMail-Priority: Normal
X-Mailer: Microsoft Outlook Express 4.72.2106.4
X-MimeOLE: Produced By Microsoft MimeOLE V4.72.2106.4

Ms. Caswell,

Thank you for your prompt feedback to my questions. It will assist me greatly in developing my survey questionnaire for the Georgia Society. While I am in the beginning of the dissertation process, I will let you know when I have information which might be of value to the AICPA.

Again, thank you for taking the time to assist me.

Kathy J. Perdue

-----Original Message-----
From: Janet Caswell <jcaswell@businessadvisor.com>
To: Kathy J Perdue <kperdue@mindspring.com>
Date: Friday, June 19, 1998 3:47 PM
Subject: RE: 3 questions!

>> -----Original Message-----
>> From: Kathy J Perdue [mailto:kperdue@mindspring.com]
>> Sent: Thursday, June 18, 1998 1:45 PM
>> To: jcaswell@businessadvisor.com
>> Subject: 3 questions!
>>
>>
>> Ms. Caswell,
>>
>> As an attendee to your session at the AICPA Technology Conference, I
>> am requesting a favor. Would you assist me with my dissertation
>> survey development by answering the following three questions. It
>> would be greatly appreciated by both me and the Georgia Society of
>> CPAs. Thanks!!
>>
>> We recently did a study at the Georgia Society of CPAs and found:
>> - CPAs in Georgia have access to email and the Internet

>> - CPAs in Georgia are interested in the WWW
>> - CPAs in Georgia are not using the WWW for CPE.
>>
>> 1. Why do you think CPAs don't use Web based CPE?
>
> 1) In general, because they are not online for anything other than e-
> mail access. E-mail is an *intrusion* in their life - an added thing to do,
> not the first thing they think/want to do on a daily basis. (Remember, I
> started this with, "in general.")
> 2) There are not a lot of online CPE providers, and/or they are not aware
> of them.
> 3) Cost does not equal benefit yet - they can get a "live" instructor for
> the same or less cost.
> 4) It's not what they are used to. They cannot conceptualize doing work
> or continuing education on the web - it is not perceived to be a
> comfortable experience.
> 5) Most web CPE products (that I've seen) are not mature enough for the
> average user to deploy in the web environment.
> 6) Many CPAs cannot attend CPE in their normal (office, home)
> environment -too many interruptions - they prefer to go somewhere else
> to attend and participate in CPE.
> 7) Web based CPE does not provide (sometimes it's only a mental
> assumption, often it's reality) the opportunity for the CPA to collaborate
> with other CPAs - a seriously valuable side benefit of going to live CPE
> classes.
> 8) Conferences are in - 8 hours of CPE on the same subject are not.
> 9) Mainly - because they don't *think* about the web as a place to obtain
> CPE. This will be up to the producers to advertise and change their
> mindset.
>>
>> 2. What features would Web based CPE need to have for CPAs to use it?
> Voice/audio/video capabilities. Voting, Polling. Whiteboarding. The
> ability to have side chats with the instructor privately. Open API with
> the ability to view different types of documents. A GOOD instructor.
> The ability to communicate with other participants. Synchronous and
> Asynchronous features.
> Content that is visually (called look & feel in the web industry) and
> editorially correct for the web medium. Shorter, more situation
> relevant content (similar to the Microsoft help characters, e.g. Mr.
> Clipit.)
>>
>> 3. What demographics (personal or professional) might impact on
>> the use of Web based CPE by CPAs?
> The CPA industry trend to move to specialization by industry and/or
> service line. Demand for specialized content is going to increase.
>
> Telecommuting - people working from home will create demand (in the

> past, they used to have in-house CPE - now, they are not going to drive to
> the office for a one or two hour session, so they'll want to do it online.)
>
> Collaboration - the current demand for online collaboration tools which
> are very similar to long-distance learning tools will foster a trend of the
> general population adapting to online CPE.
>
> Demand will increase as the next generation of CPAs enter the CPE
> marketplace because their educational experience included technology-
> based training. (They *think* that way. They expect their training to
> be online.) This is a LONG term trend - it's impact will not be significant
> until the educational experience includes web based training at the
> youngest level possible.
>
>> Thank you for your feedback!!
>>
>> Kathy J. Perdue, CPA
>> Doctoral Student, University of Georgia
>
> you are welcome!
>
> Janet Caswell
>
> Please send me a copy of your paper when you are done... I'm sure that
> the AICPA would be interested in it's contents, as they are working on
> developing a few huge long-distance learning applications right now.
>
> Janet G Caswell, CPA-MI
> @BusinessAdvisor.com, LLC
> 2373 NW 185th, #428
> Hillsboro, OR 97124-7076
> 1.800.404.3858
> jcaswell@businessadvisor.com
> Adding Value for Sustained Profitability

APPENDIX H

INITIAL ITEM POOL

\# = Item number
** = Information collection method
E = E-mail
L = Literature search
I = Interview

#	**	Item
1.	E	Prefer no test, just attendance
2.	E	Dislike lots of reading
3.	E	Internet service is not always reliable
4.	E	Sometimes cannot get on the WWW
5.	E	Noise on phone line causes modem to go "off line"
6.	E	Too slow
7.	E	Download problems
8.	E	Availability of current course subject matter
9.	E	High costs
10	E	Small choice of topics
11.	E	High turn around time on receiving certificate of completion
12.	E	Must be cost effective relative to other modes of delivery
13.	E	Desire availability of a similar type of interactive dialogue/discussion presently available in classroom setting
14.	E	Limited knowledge about the technical side of Web
15.	E	Need to experience to form an opinion
16.	E	Miss the interaction with others, learn a lot from peers also
17.	E	Not sure I would be able to ask questions
18.	E	Concerned it wouldn't be time efficient in resolving issues
19.	E	Difficult to distance yourself from daily work to participate
20.	E	Pricing – prefer to determine course had value before fully completing and paying
21.	E	Would need to be very easy to use
22.	E	Having to install multiple plug-ins before beginning session
23.	E	Need format to be the same style to decrease learning curve time
24.	E	Miss the interaction with instructors and colleagues
25.	E	Prefer formality and structure of a classroom setting
26.	E	Likely to procrastinate
27.	E	Resistance to using the WWW

= Item number
** = Information collection method
E = E-mail
L = Literature search
I = Interview

#	**	Item
28.	E	Concern about who will maintain and document CPE credits
29.	E	Manner in which verification of benefit received will be established
30.	E	Equipment/software/networking compatibility issues
31.	E	Additional training required
32.	E	Not like to see highly technical material presented on the WWW
33.	E	As an auditory learner, prefer lecture type seminar
34.	E	Limited CPE offerings
35.	E	Not have the interaction with other professionals and the knowledge that is gleaned from their experiences
36.	E	Availability of computer during the time I often use for completing some of the CPE programs
37.	E	Lack of face-to-face interaction with peers and facilitator
38.	E	Need to be self-motivated
39.	E	Need to be self-directed
40.	E	Must be able to use the technology
41.	E	Lack of camaraderie with fell CPAs
42.	E	Lack of printed reference materials
43.	E	Tired of staring at a computer screen
44.	E	No faith in the current capability of securing monetary transactions over the Internet
45.	E	Do not know I am getting quality CPE credits
46.	E	Lack of references or attestations to the quality of the CPE
47.	E	Finding out about the availability of these types of CPE
48.	E	Don't have the latest and greatest computer at home to effectively take these courses
49.	I	Worried the State Board of Accountancy will not recognize Web based CPE
50.	I	Requirement to download audio reader to interface with technology
51.	I	Confused with various technology requirements to utilize sound, movie, etc.
52.	L	Limited bandwidth
53.	L	Lack of sufficient up-to date equipment
54.	L	Newness of authoring systems

= Item number
** = Information collection method
E = E-mail
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#	**	Item
55.	L	Unreliable links
56.	L	Lack of Internet skills
57.	L	More reliance on student initiative
58.	L	Limited bandwidth (the capacity of the communications links)
59.	L	Slow modems hamper the delivery of sound, video, and graphics
60.	L	Reliance on learner initiative can be a drawback for those who prefer more structure
61.	L	Learner success depends on technical skills in computer operation and Internet navigation
62.	L	Learner success depends on the ability to cope with technical difficulties
63.	L	Learner success depends on the ability to cope with technical difficulties
64.	L	Necessitated two to three times more delivery time
65.	L	Learners anxious about putting their written word "out there"
66.	L	Although course more democratic, less interactive then expected
67.	L	Lack of becoming comfortable with technology
68.	L	Lack of ability to determine how often to go online
69.	L	Lack of ability to deal with textual ambiguity
70.	L	Lack of ability to process information on or off line
71.	L	Lack of ability to seek and give feedback
72.	L	Lack of ability to use one's learning style to personalize the course
73.	L	"Mistrust of the unknown"
74.	L	Difficulty of comprehending the constantly changing, detail-demanding, and often oversold capabilities of the technologies
75.	L	A frequent shared opinion that use of technology in the training setting is a surrender to the entertainment media
76.	L	Lack of sufficient training for teachers/trainers/course designers/managers in the effective use of technology-based tools
77.	L	Incomplete research of specific cost-effectiveness associated with the use of various advanced technology training
78.	L	High front-end costs associated with computers and other communication systems
79.	L	Expectations on the part of many learners for high-energy, commercial quality, instantaneous, and tailored delivery

= Item number
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E = E-mail
L = Literature search
I = Interview

#	**	Item
80.	L	No face-to-face contact (human interaction)
81.	L	Loss of immediacy in communication
82.	L	Computer literacy is required of both students and teachers
83.	L	Access to computer equipment is required
84.	L	Access to the Internet is required
85.	L	Loss of interactivity and the single direction of the information flow
86.	L	Loss of ability to trace student participation in the sense of interaction with the course material, other students, and tutors
87.	L	People become concerned with the appearance of their text
88.	L	Without facial expressions, voice intonations, or gestures, relationships can be strange
89.	L	Jokes and irony can lead to misunderstandings
90.	L	The distancing safety of the medium can promote casual inflammatory and hurtful remarks
91.	L	Words are preserved forever in a computer database with the potential for unknown future use by others
92.	L	Large telelearning classes force users to follow gigantic discussions requiring a tremendous amount of reading
93.	L	Heavy required searching and browsing of virtually infinite online resources can also be overwhelming
94.	L	Limited tools for linking, relating comments, references, and ideas
95.	L	Poor mechanisms for viewing and manipulating linkages, or making decisions online
96.	L	International standards for graphics and sounds are only just emerging
97.	L	Lack of correctness and accuracy in content
98.	L	Cannot progress successfully through the course without encountering blind paths, erroneous hyperlinks, etc.
99.	L	Cannot obtain reliable and fast access to users
100.	L	How fast the major IT vendors jump on the Web bandwagon and how rich their offerings are
101.	L	Generally recognized that Web client and server security is weak
102.	L	Necessitates regular technological assistance and support for the instructor to contact students through email or phone

= Item number
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E = E-mail
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I = Interview

#	**	Item
103.	L	Many faculty members may not feel empowered by computer technology
104.	L	Lack of an outward orientation should be encouraged among technical support personnel
105.	L	Danger of some learners becoming 'lost in hyperspace' without any clear signposts as to where they are going
106.	L	Internet link down
107.	L	Time consuming – traffic slow
108.	L	Download time lengthened by graphics and audio or video components
109.	L	Sufficient RAM and disk space needed for multi-windows and multi-tasking
110.	L	More time spent on graphics, movies, etc. instead of content
111.	L	Lack of technical support
112.	L	Lack of relevant learning materials
113.	L	Too much "irrelevant" information
114.	L	Inability to access some materials
115.	L	Lack of simple user guides for beginners
116.	L	Navigation problem – lost direction
117.	L	Long download time
118.	L	Unsystematic learning mode
119.	L	Disappointed to find sound/video unable to play on computers without sound cards
120.	L	Network unbearably slow
121.	L	Computer hardware that malfunctions
122.	L	Difficult in setting up software to access an educational institution or Internet service provider
123.	L	Encountering constant busy signals when dialing up from home
124.	L	Heavy on-line traffic can overload popular Web sites so that they respond very slowly or simply do not respond
125.	L	Annoying drops in telephone line connections occur all too frequently
126.	L	Cost of dialing up the institution if the student is not within local calling distance
127.	L	Cost of using an Internet service provider when the institution cannot be accessed directly

= Item number
** = Information collection method
E = E-mail
L = Literature search
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#	**	Item
128.	L	Text-only format
129.	L	Requires downloading to the user's hard drive
130.	L	Download time
131.	L	Slow response time/waiting on screens to come up
132.	L	Some state boards refuse to recognize certain entry-level technology courses
133.	L	Limited and uneven access to equipment., software, and support services
134.	L	Expectations for the "products" are too high, too soon
135.	L	User acceptance closely linked with download time and browser compatibility
136.	L	Initial high cost for online training tools
137.	L	Students brought up on force-feeding education method may have difficulty in adapting to any new method of education
138.	L	Access to the Web and computers
139.	L	Access to the Web cost money
140.	L	Fees based on usage create anxiety
141.	L	Students require some form of training on how to use the Web
142.	L	Band width on the Web is limited
143.	L	Reliability of the Internet and its sites can be patchy
144.	L	Fierce competition between Web browser makers continues to drive nonstandard developments
145.	L	Issues of privacy, security and authentication
146.	L	Cost of printing materials has been transferred to the student
147.	L	Lack of physical cues of instructor and other students
148.	L	Lack of balance between educational and technical principles
149.	L	Information overload
150.	L	Distinguishing between what is necessary and what is useful
151.	L	Getting lost among the series of hyperlinks
152.	L	The network to which the students have access may not be fast enough to support the material you want to distribute
153.	L	Students' computers may not be powerful enough to handle material
154.	L	Students may have difficulty reading the material
155.	L	Reading text on a computer screen.

= Item number
** = Information collection method
E = E-mail
L = Literature search
I = Interview

#	**	Item
156.	L	Asynchronous communication makes it difficult to determine if other participants have received the student's contributions
157.	L	Asynchronous communication can make it difficult to track the progress of a conversation
158.	L	Increased time commitment to address level of interaction
159.	L	Increase workload when moving from passive learners to active participants
160.	L	Spurring participation
161.	L	Unwanted or incorrect discussion
162.	L	Various forms of harassment
163.	L	May not be available next time access is attempted
164.	L	May not longer exhibit the same form
165.	L	May not provide information sources to encourage student to acknowledge the origin and development of ideas
166.	L	Current limitations of low level authoring tools, limits screen layout & constancy of linked information sites
167.	L	Use of text based browsers limits users to only textual materials
168.	L	Limited bandwidth and large file sizes limit the speed of downloading multimedia elements
169.	L	Apt to diverge from their original task when they have too many choices
170.	L	Slower performance for sound, video and graphics can make WBI less efficient and less effective
171.	L	Risk of becoming lost in the Web and not fulfilling learner expectations
172.	L	Accessing the Web, downloading multimedia files, and adjusting to a new medium can sometimes be challenging
173.	L	Learners may lose focus on a topic due to the wide variety of sources that may be available on a WBI course
174.	L	Information may not always be accessed because of common problems related to servers such as connection refusal
175.	L	Necessary to take precautionary measures in sending materials to the correct address
176.	L	Initial cost of computer equipment and connectivity may be prohibitive for some people
177.	L	Many links may become obsolete because they are no longer active
178.	L	Cross-platform, browser-driven nature of HTML document display on the Web

= Item number
** = Information collection method
E = E-mail
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#	**	Item
179.	L	Time to transmit/display large text and image files strikingly slower over Internet than when residing on the local computer
180.	E	Prefer to attend training as opposed to reading/listening to training and answering questions/taking tests
181.	E	Not aware of training on the web
182.	E	No computers available for use at work; would have to do it from home
183.	E	Cost – currently obtain CPE either thru employer or low cost outside offerings
184.	E	Lack of PC and Web knowledge
185.	E	CPE would be earned in "isolation"
186.	E	Have never used CPE over the World Wide Web
187.	E	Wouldn't want to be on line for hours doing a correspondence course
188.	E	To be on line seems a waste of connect time
189.	E	Most correspondence courses always take longer to complete than the credit hours
190.	E	Losing the connection and all your work
191.	E	Getting to the Web site and staying on line for extended periods
192.	E	Paying for the course with security for charges
193.	E	Paying access fees from home
194.	E	Miss camaraderie, social interaction and networking
195.	E	Diversity of topics
196.	E	Quality of instruction
197.	E	Concern about security for credit card payments
198.	E	Concern about how hours earned would be documented
199.	E	Not online for anything other than email access
200.	E	Email is intrusion in their life, added thing to do
201.	E	Not a lot of online CPE providers
202.	E	CPAs are not aware of online CPE providers
203.	E	Cost does not equal benefit yet, can get live instructor for same or less cost
204.	E	Not what CPAs are used to
205.	E	Cannot conceptualize doing work of CE on the web
206.	E	Not perceived to be a comfortable experience

= Item number
** = Information collection method
E = E-mail
L = Literature search
I = Interview

#	**	Item
207.	E	Most web products not mature enough for the average user
208.	E	Too many interruptions in their normal (office, home) environment
209.	E	Does not provide opportunity to collaborate with other CPAs
210.	E	Conferences are in – 8 hours of CPE on the same subject are not
211.	E	Don't think about the web as a place to obtain CPE
212.	I	Lack of knowledge of using Internet
213.	I	Lack of knowing benefits of Internet
214.	I	Trust issue about buying course online – using credit card online
215.	I	Don't trust because instructor not available
216.	I	Don't trust quality of learning experience
217.	I	Can't do during billable hours
218.	I	Limited access on Internet at work – can't roam completely
219.	I	No access to Internet at home
220.	I	No time to search for sites
221.	I	Employer does not recognize value/benefit of Internet training
222.	I	Not the primary learning model they are use to
223.	I	Older members want to use the classroom
224.	E	CPAs don't know how web works
225.	E	CPAs don't know how much it costs
226.	E	CPAs don't know when it is available
227.	E	CPAs don't know what they will get out of it
228.	E	CPAs are slow to change
229.	E	CPAs are so busy they are not looking for new ways to find CPE
230.	E	Not interactive enough to justify spending several hours chained to a computer
231.	E	Not portable like a self-study book
232.	E	CPAs prefer the camaraderie of a group study course
233.	E	Not have time to learn how to master an online course
234.	E	Not have patience to learn how to master on online course
235.	E	CPAs have not yet embraced the Internet (or a computer for that matter)

= Item number
** = Information collection method
E = E-mail
L = Literature search
I = Interview

#	**	Item
236.	E	Web based training is not proven, talked about, or widely considered to be a good solution
237.	E	Fear, uncertainty and doubt makes it easy for a CPA to stay with the old tried and true rather than try something new
238	E	Many CPAs don't have the discipline to sit through 8 hours of online training with classroom structure
239	E	Never heard anyone say that they took a web based training class much less comment that it was good
240	I	Fear of downloading viruses onto computer
241	I	Confusion and concern about cookies being placed on computer by websites visited
242	I	Can't see structure of information on web pages

APPENDIX I

PROPOSED PILOT SURVEY INSTRUMENT

VERSION A

CPA Web-Based Continuing Professional Education Survey

Although many CPAs have access to computer systems and Internet access, comparatively few are using distance education as a method of completing their continuing professional education (CPE) requirements. The Georgia Society of CPAs is interested in why this is the case. This questionnaire is designed to measure your perceptions about "web-based education" as a means of completing CPE requirements.

Definition of Web-Based Education: In the following questions, web-based education means any forms of education using multimedia and computer networking in which the professional and educator are separated in place and/or time.

SECTION I: Perceptions of Web-Based Continuing Professional Education. Please answer each statement below by circling only one response.

The following items represent reasons other CPAs don't participate in web-based education. They are listed here in random order. To what extent do the following items make it difficult for you to use the World Wide Web to complete your continuing professional education?

		Not a Difficulty					Significant Difficulty
1.	I find a limited number of CPE providers offering web-based courses.	0	1	2	3	4	5
2.	I can't get the course topics I want through web-based courses.	0	1	2	3	4	5
3.	I don't like wasting time waiting on download of course materials to my computer hard drive.	0	1	2	3	4	5
4.	I don't like wasting time waiting for screen displays.	0	1	2	3	4	5
5.	I don't like downloading software to use sound, video, and graphics since I don't know what it will do to my computer system.	0	1	2	3	4	5
6.	I dislike having to purchase additional hardware to use sound, video and graphics.	0	1	2	3	4	5
7.	I cannot count on reliable access to the Internet.	0	1	2	3	4	5
8.	I don't know which web browser (Internet Explorer, Netscape, etc.) to use.	0	1	2	3	4	5
9.	I am not comfortable with technology.	0	1	2	3	4	5
10.	I prefer the formality and structure of a traditional classroom.	0	1	2	3	4	5
11.	I am not the type of person who would enjoy learning on a computer.	0	1	2	3	4	5
12.	I don't think web-based courses would provide as much variety as attending a conference.	0	1	2	3	4	5
13.	I am afraid of downloading viruses onto my computer system.	0	1	2	3	4	5

		Not a Difficulty					Significant Difficulty
14.	I don't like the fact that the appearance of websites change.	0	1	2	3	4	5
15.	I get frustrated when I am referred to a web page and I get an error message.	0	1	2	3	4	5
16.	I believe the initial cost of computer equipment to access the Internet is prohibitively high.	0	1	2	3	4	5
17.	I have no evidence that web-based courses are cost effective.	0	1	2	3	4	5
18.	I believe the cost of connecting to the Internet is high.	0	1	2	3	4	5
19.	I don't like paying for printing materials in order to have a hard copy.	0	1	2	3	4	5
20.	I get frustrated with computer hardware malfunctions.	0	1	2	3	4	5
21.	I don't have sufficient up-to-date equipment to take CPE courses on the Web.	0	1	2	3	4	5
22.	I don't have sufficient communication links to prevent slow downloading of web information.	0	1	2	3	4	5
23.	I worry about finding my way through complex web sites.	0	1	2	3	4	5
24.	I would miss the opportunity to learn from my peers.	0	1	2	3	4	5
25.	I would miss the opportunity to interact with the instructor.	0	1	2	3	4	5
26.	I worry the lack of facial expressions, verbal interaction, or gestures can result in miscommunication during a course.	0	1	2	3	4	5
27.	I worry a web-based course would be more difficult for an instructor to keep the discussion on track.	0	1	2	3	4	5
28.	I don't like not being able to get immediate feedback.	0	1	2	3	4	5
29.	I worry it would be difficult to track the progress of a conversation conducted on the web.	0	1	2	3	4	5
30.	I am not sure I would be able to ask questions.	0	1	2	3	4	5
31.	I get tired of staring at a computer screen.	0	1	2	3	4	5
32.	I would miss the camaraderie with other CPAs.	0	1	2	3	4	5
33.	I dislike the requirement to have access to the Internet.	0	1	2	3	4	5
34.	I worry the instructor is not available if I need assistance.	0	1	2	3	4	5
35.	I can't roam the Internet completely due to employer Internet restrictions.	0	1	2	3	4	5
36.	I would miss the instructor's lecture.	0	1	2	3	4	5

	Not a Difficulty					Significant Difficulty
37. I would not want to complete tests.	0	1	2	3	4	5
38. I would have too many interruptions in my office or home to participate in a web-based course.	0	1	2	3	4	5
39. I would not have the time or patience to learn how to take an online course.	0	1	2	3	4	5
40. I would prefer to just listen and take notes instead of actively participating..	0	1	2	3	4	5
41. I worry the computer equipment would not be available at the time I can take a course.	0	1	2	3	4	5
42. I worry the computer equipment would not be available at the location I can take a course.	0	1	2	3	4	5
43. I worry that access to technology support services will not be available when I need them.	0	1	2	3	4	5
44. I would not have access to printed reference materials.	0	1	2	3	4	5
45. I would not be able to determine the quality of a web-based course prior to enrolling.	0	1	2	3	4	5
46. I don't know any other CPA who has taken a web-based course.	0	1	2	3	4	5
47. I worry about the accuracy and relevance of a web-based course.	0	1	2	3	4	5
1. I worry that I will spend a disproportionate amount of my learning time on the graphics, movies, etc.	0	1	2	3	4	5
49. I don't like to read a lot of text on a computer screen.	0	1	2	3	4	5
50. It would be difficult to learn highly technical information on a computer.	0	1	2	3	4	5
51. It would take too much time to complete a course.	0	1	2	3	4	5
52. The Internet and Web would interfere with the way I normally research information.	0	1	2	3	4	5
53. I am concerned about how CPE credits would be documented for a web-based course.	0	1	2	3	4	5
54. I am concerned the State Board of Accountancy will not recognize web-based CPE courses.	0	1	2	3	4	5
55. I am concerned about my employer's perceived value of web-based CPE courses.	0	1	2	3	4	5
56. I don't like to send financial information over the Internet.	0	1	2	3	4	5

	Not a Difficulty					Significant Difficulty
57. I don't like to send personal information over the Internet.	0	1	2	3	4	5
58. I don't like putting things into writing because I don't know how it will be used.	0	1	2	3	4	5
59. I am concerned about being self-motivated to complete a web-based CPE course.	0	1	2	3	4	5
60. I am concerned about getting lost in the web pages and losing focus on the course material.	0	1	2	3	4	5
61. I worry that I haven't had the necessary training to use the Internet and the World Wide Web.	0	1	2	3	4	5
62. I am concerned that I don't understand the Internet and the World Wide Web.	0	1	2	3	4	5
63. I don't have technical knowledge about computers.	0	1	2	3	4	5
64. I just don't see the advantage of Web-based training.	0	1	2	3	4	5
65. I would not be able to combined vacation with taking my CPE course.	0	1	2	3	4	5

SECTION II: Continuing Professional Education Experience

66. Have you ever purchased/participated in self study courses (i.e. audio, video, text) as a method of completing CPE requirements? (Circle *one*.) Yes No

67. What percent of your CPE have you completed during the last reporting period using self-study courses? _____ %

68. What percent of your CPE would you be interested in completing during the next reporting period using "web-based courses"?

_____ %

SECTION III: Background Information

69. Do you have access to electronic mail? (Circle *one*) Yes No

70. Do you have access to the Internet? (Circle *one*) Yes No

71. Have you ever used the Internet to purchase goods or services? (Circle *one*) Yes No

72. In what arena do you practice accounting? (Circle *one*.)

Public Practice Industry Education Government Other

73. What is your gender? (Circle *one*) Female Male

74. What is your age? _____

75. How many years have you been certified as a CPA? _____

APPENDIX J

PROPOSED SURVEY COVER LETTE

VERSION A

CPA Web based Continuing Professional Education Survey

September 15, 1998

Dear Member of the Georgia Society of CPAs:

In the past few years, distance education and self study have played an increasingly important role in continuing education for certified public accountants. Some of the questions being asked in the Adult Education Department at the University of Georgia include these: What are the deterrents preventing certified public accountants from participating in web based continuing professional education? What are the features desired by certified public accountants concerning web based continuing professional education? What is the level of participation in these courses over the last two years? The Georgia Society of CPAs' Strategic Planning Committee has these issues on their agenda as well.

This study is being conducted because we feel that the certified public accountants in the state of Georgia should have their opinions heard on these important matters. You are one of a small sample of accountants in Georgia being asked to give your opinion. The sample was drawn randomly from the 1998-99 membership of the Georgia Society of Certified Public Accountants. It is very important to the success of the study that each questionnaire be completed and mailed by September 30 to ensure that a report can be made to the Georgia Society of CPAs' Strategic Planning Committee in November.

You may be assured of complete confidentiality. The questionnaire has an identification number for mailing purposes only. This is so that we may check your name off of the mailing list when your questionnaire is returned. Your name will never be placed on the questionnaire or on any reports of research results.

The results of this research will be made available to the Georgia Society of Certified Public Accountants to provide information in the planning of future continuing education courses. You may receive a copy of the executive summary by enclosing a business card in the return envelope. The business card will be immediately separated from the survey to maintain your confidentiality.

We would be most happy to answer any questions you might have. Please write, call, or email. The telephone number is 770.934.5239 or 770.939.9211. The email address is kperdue@mindspring.com.

Thank you for your assistance.

Sincerely,

Kathy J. Perdue, CPA
Survey Coordinator

Katrina Street
CPE Director
Georgia Society of CPAs

Thomas Valentine
Associate Professor
University of Georgia

Research at The University of Georgia which involves human participants is overseen by the Institutional Review Board. Questions or problems regarding your rights as a participant should be addressed to Institutional Review Board; Office of V. P. for Research; The University of Georgia; 606A Graduate Studies Research Center; Athens, Georgia 30602-7411; Telephone (706) 542-6514.

APPENDIX K

PROPOSED PILOT SURVEY COVER LETTER

VERSION B

[Georgia Society of CPAs letterhead]

Complete Survey and Earn CPE $$$s
CPA Web based Continuing Professional Education Survey

August 27, 1998

Dear CPA:

In the past few years, distance education and self study have played an increasingly important role in continuing education for certified public accountants. Some of the questions being asked by the Georgia Society of CPAs' Strategic Planning Committee include these:

- What are the deterrents preventing certified public accountants from participating in web based continuing professional education?
- What is the level of participation in these courses over the last two years?
- What is the anticipated demand for these courses in the future?

In order to develop a meaningful survey, you are being asked to:

- Complete the attached draft survey
- Turn it in during the conference to the booth at the end of the registration desk
- Receive $15 of CPE credit toward a future Georgia Society of CPAs' course

You may be assured of complete confidentiality. Your name will never be placed on the questionnaire or on any reports of research results. The results of this research, conducted at the University of Georgia, will be made available to the Georgia Society of Certified Public Accountants to provide information in the planning of future continuing education courses.

We would be most happy to answer any questions you might have concerning this survey. Please drop by the booth at the end of the registration table during the conference. After the conference you may write, call, or email for any additional information about this study. The telephone number is 770.934.5239 or the email address is kperdue@mindspring.com.

Thank you for your assistance!

Sincerely,

Kathy J. Perdue, CPA
Survey Coordinator

Katrina Street
CPE Director
Georgia Society of CPAs

Thomas Valentine
Associate Professor
University of Georgia

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APPENDIX L

PILOT SURVEY COVER LETTER

[Georgia Society of CPAs Letterhead]

Complete Survey and Earn CPE $$$s

CPA Web-Based Continuing Professional Education Survey

August 27. 1998

Dear CPA:

Have you ever thought about using the World Wide Web (WWW) to complete your mandatory continuing education commitment? Thought about it but didn't get any farther than that? No matter what your answer to either of these questions we want to hear from you. The Georgia Society of CPA's Strategic Planning Committee wants to know:

- What are the deterrents preventing certified public accountants from participating in web-based continuing professional education?
- What is the level of participation in these courses over the last two years?
- What is the anticipated demand for these courses in the future?

In order to develop a tool that will efficiently and effectively collect this information, please:

- Complete the attached draft survey
- Turn it in during the conference at the booth at the end of the registration desk
- Receive $15 of CPE credit toward a future Georgia Society of CPAs' course. (Really!)

Your opinions are safe with us. Your name will never be placed on the questionnaire or on any report of research results. The results of this research, conducted at the University of Georgia, will be made available to the Georgia Society of Certified Public Accountants in summary form only to provide information for the planning of future continuing education courses.

Have questions concerning this survey? Please drop by the booth at the end of the registration table during the conference, call us (770.934.5239), or email (kperdue@mindspring.com).

Thank you for your opinions!

Sincerely,

Kathy J. Perdue, CPA
Survey Coordinator

Katrina Street
CPE Director
Georgia Society of CPAs

Thomas Valentine
Associate Professor
University of Georgia

Research at The University of Georgia which involves human participants is overseen by the Institutional Review Board. Questions or problems regarding your rights as a participant should be addressed to Institutional Review Board; Office of V. P. for Research; The University of Georgia; 606A Graduate Studies Research Center; Athens, Georgia 30602-7411; Telephone (706) 542-6514.

APPENDIX M

PROPOSED PILOT SURVEY INSTRUMENT

VERSION B

CPA Web-Based Continuing Professional Education Survey

CPAs are not using the World Wide Web (WWW; web) to complete their continuing professional education (CPE) requirements. Why? This questionnaire is designed to collect your opinions about this subject.

- **These statements are intentionally presented in random order.**
- **Please circle only <u>one</u> response for each statement.**
- **For any statement that you circle "Not Applicable" please indicate why by indicating the question number and your reason on the blank sheet provided.**

1. It never occurred to me to use the web to complete my CPE requirements (**If True, skip to number 4.** and complete the rest of the questions based on your opinions rather than experience. **If False, continue answering the rest of the questions** based on your experience and opinions.) True False

2. Not enough CPE providers offer web-based courses. True False

3. The course topics I want are not available through web-based courses. True False

		N/A	Strongly Disagree ◄► Strongly Agree					
4.	I don't have the necessary computer hardware to access the web	0	1	2	3	4	5	6
5.	I am willing but not able to purchase the necessary computer hardware to access the web	0	1	2	3	4	5	6
6.	I do not have enough technical knowledge about computers to use the web for CPE	0	1	2	3	4	5	6
7.	I do not have the necessary computer software to access the web	0	1	2	3	4	5	6
8.	I am not willing to download the necessary software from the web (e.g., browsers, sound, video, graphics applications) in order to use the web for CPE	0	1	2	3	4	5	6
9.	I am willing but lack the skill to download the necessary software (e.g., browsers, sound, video, graphics applications) from the web in order to use the web for CPE	0	1	2	3	4	5	6
10.	I do not have permission to download the necessary software (e.g., browsers, sound, video, graphics applications) from the web	0	1	2	3	4	5	6
11.	I do not have reliable or full enough access to the Internet	0	1	2	3	4	5	6
12.	I do not have reliable enough access to electronic mail (e-mail)	0	1	2	3	4	5	6

	N/A	Strongly Disagree ↔ Strongly Agree					
13. Downloading CPE course materials from the web takes too long	0	1	2	3	4	5	6
14. Loading screen displays takes too long	0	1	2	3	4	5	6
15. I dislike it so much when web sites change their appearance and method of use that I avoid using those sites for CPE	0	1	2	3	4	5	6
16. I prefer traditional classroom instruction over self-study courses for CPE	0	1	2	3	4	5	6
17. I prefer using pencil and paper materials over electronic materials (e.g., computers) for CPE	0	1	2	3	4	5	6
18. I prefer traditional classroom instruction over using the WWW for CPE	0	1	2	3	4	5	6
19. The cost of connecting to the internet is too high to justify using the web for CPE	0	1	2	3	4	5	6
20. The cost of printing downloaded course materials is too high to justify using the web for CPE	0	1	2	3	4	5	6
21. I have no evidence that using the web for CPE is cost-effective	0	1	2	3	4	5	6
22. Using links to move around among web sites without getting lost is too complicated for me to use the web for CPE	0	1	2	3	4	5	6
23. I prefer interacting directly with my peers as part of the learning process over using the web for CPE	0	1	2	3	4	5	6
24. I prefer interacting directly with an instructor over using the web for CPE	0	1	2	3	4	5	6
25. It is too easy to misinterpret what is being communicated over the web because you don't have an opportunity to place statements in visual context (e.g., speaker's facial expression and body language)	0	1	2	3	4	5	6
26. It is too difficult for a CPE instructor to retain control of a web-based discussion	0	1	2	3	4	5	6
27. I prefer receiving more immediate feedback during CPE courses than is possible using the web	0	1	2	3	4	5	6
28. I do not have the technical skill to participate in on-line discussions as part of a web-based CPE course	0	1	2	3	4	5	6
29. I lack the confidence to participate in on-line discussions as part of a web-based CPE course	0	1	2	3	4	5	6
30. Using the web for CPE would involve too much time staring at a computer screen	0	1	2	3	4	5	6

	N/A	Strongly Disagree ↔ Strongly Agree					
31. I prefer not to access the Internet	0	1	2	3	4	5	6
32. The risk is too high that the instructor of a web-based course may not be available when I need assistance	0	1	2	3	4	5	6
33. I prefer hearing CPE lectures in person to reading them on a computer screen or hearing them through a computer speaker	0	1	2	3	4	5	6
34. I would be less likely to complete assignments and tests over the web than through other forms of CPE	0	1	2	3	4	5	6
35. I have too many interruptions in my office or home to participate in a web-based course	0	1	2	3	4	5	6
36. I do not have the time to learn how to take a web-based course	0	1	2	3	4	5	6
37. I do not have the patience to learn how to take a web-based course	0	1	2	3	4	5	6
38. I so much prefer listening and taking notes over actively participating in discussions that I would not participate fully in a web-based course	0	1	2	3	4	5	6
39. The graphics and movies in web-based courses are too distracting	0	1	2	3	4	5	6
40. I do not have reliable enough access to technology support services if I run into a computer-related problem during a web-based course	0	1	2	3	4	5	6
41. A web-based course would not give me convenient enough access to printed reference materials	0	1	2	3	4	5	6
42. It is not possible for me to determine the quality of a web-based course prior to enrolling in it	0	1	2	3	4	5	6
43. I do not know any other CPAs who have taken a web-based course	0	1	2	3	4	5	6
44. A web-based course would take too long to complete	0	1	2	3	4	5	6
45. Using the web would interfere with how I normally research information	0	1	2	3	4	5	6
46. It is too difficult to learn highly technical information on a computer	0	1	2	3	4	5	6
47. I have insufficient self-motivation to complete a web-based CPE course	0	1	2	3	4	5	6
48. I am concerned enough that CPE credits may not be properly documented for a web-based course to avoid taking one	0	1	2	3	4	5	6

	N/A	Strongly Disagree ◄► Strongly Agree					
49. I am concerned enough that the State Board of Accountancy will not recognize CPE credits earned in a web-based course to avoid taking one	0	1	2	3	4	5	6
50. I am concerned enough about the accuracy and relevancy of a web-based course to avoid taking one	0	1	2	3	4	5	6
51. My employer does not place as high a value on web-based courses as on other forms of CPE	0	1	2	3	4	5	6
52. I am unwilling to submit financial information over the Internet	0	1	2	3	4	5	6
53. I am unwilling to submit personal information over the Internet	0	1	2	3	4	5	6
54. I am unwilling to substitute web-based CPE for going to CPE conferences	0	1	2	3	4	5	6
55. I am unwilling to put things in writing and submit them over the Internet	0	1	2	3	4	5	6
56. Web-based training has insufficient advantages to justify using it for CPE	0	1	2	3	4	5	6
57. I would be unable to combine vacation time with fulfilling my CPE obligation if I did my CPE through web-based courses	0	1	2	3	4	5	6
58. Using the web is too frustrating to justify using it for CPE	0	1	2	3	4	5	6

SECTION II: Background

1. Have you ever purchased/participated in self study courses (i.e. audio, video, text) as a method of completing CPE requirements? (Circle *one*.) Yes No

2. What percent of your CPE have you completed during the last reporting period using self-study courses? _____ %

3. What percent of your CPE would you be interested in completing during the next reporting period using "web-based courses"? _____ %

4. Have you ever used the Internet to purchase goods or services? (Circle *one*) Yes No

5. In what arena do you practice accounting? (Circle *one*.)
   Public Practice Industry Education Government
   Other

6. What is your gender? (Circle *one*) Female Male

7. What is your age? _____

8. How many years have you been certified as a CPA? _____

APPENDIX N

PILOT SURVEY INSTRUMENT

PROPOSED STUDY SURVEY INSTRUMENT – VERSION A

[Georgia Society for CPAs Letterhead]

CPE on the World Wide Web for CPAs

Although many CPAs have access to computer systems and the Internet, comparatively few are using distance education as a method of completing their continuing professional education (CPE) requirements. The Georgia Society of CPAs is interested in why this is the case. This questionnaire is designed to measure your perceptions about "web-based education" as a means of completing CPE requirements.

Definition of Web-Based Education: In the following questions, "web-based education" means any form of education using multimedia and computer networking in which the professional and instructor are separated in place and/or time.

SECTION I: Perceptions of Web-Based CPE Courses. Please answer each statement below by circling only one response.

		Strongly Disagree ← → Strongly Agree					
1.	It never occurred to me to participate in web-based CPE courses to complete my CPE requirements.	1	2	3	4	5	6
2.	I don't have the *computer hardware* necessary to participate in web-based CPE courses.	1	2	3	4	5	6
3.	I don't have the *technical knowledge* about computers to participate in web-based CPE courses.	1	2	3	4	5	6
4.	I don't have the *computer software* necessary to participate in web-based CPE courses.	1	2	3	4	5	6
5.	I don't have the *technical skills* needed to participate in the on-line discussions during a web-based CPE course.	1	2	3	4	5	6
6.	I don't have the *confidence* to participate in the on-line discussions during a web-based CPE course.	1	2	3	4	5	6
7.	I am *reluctant* to download the necessary computer software from the Internet (e.g., browsers, sound, video, graphics applications) in order to participate in web-based CPE courses.	1	2	3	4	5	6
8.	I don't have the *knowledge* to download the necessary computer software from the Internet (e.g., browsers, sound, video, graphics applications) in order to participate in web-based CPE courses.	1	2	3	4	5	6
9.	I don't have a work environment that *allows* me to download the necessary computer software from the Internet (e.g., browsers, sound, video, graphics applications).	1	2	3	4	5	6
10.	I don't have reliable enough access to the *Internet* to participate in web-based CPE courses.	1	2	3	4	5	6

	Strongly Disagree ← → Strongly Agree					
11. I don't have reliable enough access to *electronic mail (e-mail)* to participate in web-based CPE courses.	1	2	3	4	5	6
12. I don't have the *time* to learn how to use the web for a web-based CPE course.	1	2	3	4	5	6
13. I don't have the *patience* to learn how to use the web for a web-based CPE course.	1	2	3	4	5	6
14. I don't have reliable enough access to technology support services if I run into a computer-related problem during a web-based CPE course.	1	2	3	4	5	6
15. I prefer traditional classroom instruction over web-based CPE courses	1	2	3	4	5	6
16. I prefer using printed materials over the kind of electronic materials (e.g., computer screens, emails) used for web-based CPE courses.	1	2	3	4	5	6
17. I prefer face-to-face interaction with my *peers* over the type of electronic communication used in web-based CPE courses.	1	2	3	4	5	6
18. I prefer face-to-face interaction with the *instructor* over the type of electronic communication used in web-based CPE courses.	1	2	3	4	5	6
19. I prefer hearing CPE lectures in person to reading them on a computer screen or hearing them through a computer speaker.	1	2	3	4	5	6
20. I don't believe participating in web-based CPE courses is cost-effective.	1	2	3	4	5	6
21. I don't believe that web-based CPE courses have sufficient advantages to justify using it for CPE.	1	2	3	4	5	6
22. I don't believe that there are not enough CPE providers offering web-based CPE courses.	1	2	3	4	5	6
23. I am concerned that the course topics I want are not available through web-based CPE courses.	1	2	3	4	5	6
24. I'm concerned that downloading CPE course materials from the web will take too long.	1	2	3	4	5	6
25. I'm concerned that my computer may take too long to bring up screen displays in web-based CPE courses.	1	2	3	4	5	6
26. I'm concerned that the web sites used in web-based CPE courses would change their appearance between the times I use them.	1	2	3	4	5	6
27. I am concerned the cost of *purchasing the computer hardware* needed to participate in web-based CPE courses is too high.	1	2	3	4	5	6
28. I am concerned the cost of *connecting to the Internet* is too high to justify participating in web-based CPE courses.	1	2	3	4	5	6
29. I am concerned the cost of *printing downloaded course materials* is too high to justify participating in web-based CPE courses.	1	2	3	4	5	6

	Strongly Disagree ← → Strongly Agree					
30. I'm concerned that I might get lost moving around web sites during web-based CPE courses.	1	2	3	4	5	6
31. I am concerned that electronic communication could be misinterpreted during participation in web-based CPE courses.	1	2	3	4	5	6
32. I am concerned that electronic discussion in web-based CPE courses would	1	2	3	4	5	6
33. I am concerned that web-based CPE courses would not provide the immediate feedback I expect.	1	2	3	4	5	6
34. I am concerned about spending too much time staring at a computer screen while participating in web-based CPE courses.	1	2	3	4	5	6
35. I am concerned that the instructor of a web-based CPE course may not be available when I need assistance.	1	2	3	4	5	6
36. I am concerned that I might have to complete assignments and tests in a web-based CPE course.	1	2	3	4	5	6
37. I am concerned that I might have too many interruptions in my office or home to participate in web-based CPE courses.	1	2	3	4	5	6
38. I am concerned that I would not participate enough in the on-line discussions in a web-based CPE course.	1	2	3	4	5	6
39. I am concerned that the graphics and movies in a web-based CPE course would be too distracting.	1	2	3	4	5	6
40. I am concerned that a web-based CPE course would not provide printed reference materials for me to use in my work.	1	2	3	4	5	6
41. I am concerned that I don't know how to evaluate the quality of a web-based CPE course before enrolling in it.	1	2	3	4	5	6
42. I am concerned that I don't know other CPAs who have taken a web-based CPE course.	1	2	3	4	5	6
43. I am concerned a web-based CPE course would take too long to complete.	1	2	3	4	5	6
44. I am concerned about trying to learn highly technical accounting information on computer in a web-based CPE course.	1	2	3	4	5	6
45. I am concerned I might not have enough self-motivation to complete a web-based CPE course.	1	2	3	4	5	6
46. I am concerned that CPE credits may not be properly documented by the provider for a web-based CPE course.	1	2	3	4	5	6
47. I am concerned that the State Board of Accountancy will not recognize CPE credits earned in a web-based CPE course.	1	2	3	4	5	6

	Strongly Disagree ← → Strongly Agree					
48. I am concerned about the *accuracy* of a web-based CPE course.	1	2	3	4	5	6
49. I am concerned about the *relevancy* of a web-based CPE course to my work.	1	2	3	4	5	6
50. I am concerned that other people might not place as high a value on web-based CPE courses as on other forms of CPE.	1	2	3	4	5	6
51. I am concerned about submitting *financial* information over the Internet in order to participate in a web-based CPE course.	1	2	3	4	5	6
52. I am concerned about submitting *personal* information over the Internet in order to participate in a web-based CPE course.	1	2	3	4	5	6
53. I am concerned about submitting *written comments* over the Internet in order to participate in a web-based CPE course.	1	2	3	4	5	6
54. I am concerned that a web-based CPE course would provide less variety than I could get at a conference.	1	2	3	4	5	6
55. I am concerned I would be unable to combine vacation time with fulfilling my CPE obligation if I participated in web-based CPE courses.	1	2	3	4	5	6
56. I am concerned that using web-based CPE courses would be too frustrating.	1	2	3	4	5	6

SECTION II: Background

1. Have you ever participated in self-study courses of any type, including audiocassettes, videocassettes, text, or computer, as a method of completing CPE requirements? (Circle *one*.)

   Yes No

2. During the *last* reporting period, what percent of your CPE have you completed using self-study CPE courses?

   _____ %

3. During the *next* reporting period, what percent of your CPE would you be interested in completing using "web-based CPE courses"?

   _____ %

4. Have you ever used the Internet to purchase goods or services? (Circle *one*) Yes No

5. In what arena do you practice accounting? (Circle *one*.)

   Public Practice Industry Education Government Other

6. What is your gender? (Circle *one*) Female Male

7. What is your age? _____ Years

8. How many years have you been certified as a CPA? _____ Years

Thank you for participating!!

APPENDIX O

PROPOSED STUDY SURVEY COVER LETTER

VERSION A

CPA Web-Based Continuing Professional Education Survey

September 15, 1998

Dear Member of the Georgia Society of CPAs:

In the past few years, distance education and self study have played an increasingly important role in continuing education for certified public accountants. Some of the questions being asked in the Adult Education Department at the University of Georgia include these: What are the deterrents preventing certified public accountants from participating in web-based continuing professional education? What are the features desired by certified public accountants concerning web-based continuing professional education? What is the level of participation in these courses over the last two years? The Georgia Society of CPAs' Strategic Planning Committee has these issues on their agenda as well.

This study is being conducted because we feel that the certified public accountants in the state of Georgia should have their opinions heard on these important matters. You are one of a small sample of accountants in Georgia being asked to give your opinion. The sample was drawn randomly from the 1998-99 membership of the Georgia Society of Certified Public Accountants. It is very important to the success of the study that each questionnaire be completed and mailed by September 30 to ensure that a report can be made to the Georgia Society of CPAs' Strategic Planning Committee in November.

You may be assured of complete confidentiality. The questionnaire has an identification number for mailing purposes only. This is so that we may check your name off of the mailing list when your questionnaire is returned. Your name will never be placed on the questionnaire or on any reports of research results.

The results of this research will be made available to the Georgia Society of Certified Public Accountants to provide information in the planning of future continuing education courses. You may receive a copy of the executive summary by enclosing a business card in the return envelope. The business card will be immediately separated from the survey to maintain your confidentiality.

We would be most happy to answer any questions you might have. Please write, call, or email. The telephone number is 770.934.5239 or 770.939.9211. The email address is kperdue@mindspring.com.

Thank you for your assistance.

Sincerely,

Kathy J. Perdue, CPA
Survey Coordinator

Katrina Street
CPE Director
Georgia Society of CPAs

Thomas Valentine
Associate Professor
University of Georgia

Research at The University of Georgia which involves human participants is overseen by the Institutional Review Board. Questions or problems regarding your rights as a participant should be addressed to Institutional Review Board; Office of V. P. for Research; The University of Georgia; 606A Graduate Studies Research Center; Athens, Georgia 30602-7411; Telephone (706) 542-6514.

APPENDIX P

PROPOSED STUDY SURVEY COVER LETTER

VERSION B

[Georgia Society of CPAs Letterhead]

October 1, 1998

Dear Member of the Georgia Society of CPAs:

Have you ever thought about using the World Wide Web (WWW) to complete your mandatory continuing education commitment? Thought about it but didn't get any farther than that? No matter what your answer to either of these questions we want to hear from **you**. The Georgia Society of CPAs' Strategic Planning Committee wants to know:

- What are the deterrents preventing certified public accountants from participating in web-based continuing professional education?
- What is the level of participation in these courses over the last two years?
- What is the anticipated demand for these courses in the future?

In order to develop a tool that will efficiently and effectively collect this information, please:

- Complete the attached survey.
- Mail it back to the GSCPA in the enclosed stamped envelope.
- Enclose a business card if you would like a copy of the final executive summary of the study.

Your opinions are safe with us. Your name will never be placed on the questionnaire or on any report of research results. The results of this research, conducted at the University of Georgia, will be made available to the Georgia Society of Certified Public Accountants in summary form only to provide information in the planning of future continuing education courses.

Have questions concerning this survey? Please call us at 770.934.5239 or email kperdue@mindspring.com.

Thank you in advance for your opinions!

Sincerely,

Kathy J. Perdue, CPA
Survey Coordinator

Katrina Street
CPE Director
Georgia Society of CPAs

Thomas Valentine
Associate Professor
University of Georgia

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APPENDIX Q

PROPOSED STUDY SURVEY COVER LETTER

VERSION C

[Georgia Society of CPAs Letterhead]

October 1, 1998

Dear Member of the Georgia Society of CPAs:

Have you ever thought about using the World Wide Web (WWW) to complete your mandatory continuing education commitment? Although more continuing professional education providers are offering web-based courses, most CPAs haven't participated in one. That's why we want to hear from **you**. The Georgia Society of CPAs' Strategic Planning Committee wants to know:

- What are the things that might make it difficult for you to participate in web-based continuing professional education?
- What is your level of participation in these courses over the last two years?
- What is your anticipated demand for these courses in the future?

This research is important in order to identify courses that fit your life the best. If you're going to help us with this research, please do the following things:

- Complete the attached survey.
- Mail it back to the GSCPAs in the enclosed stamped envelope by October 15.
- Enclose a business card if you would like a copy of the final executive summary of the study.

Your opinions are safe with us. Your name will never be placed on the questionnaire or on any report of research results. The results of this research, conducted at The University of Georgia, will be made available to the Georgia Society of Certified Public Accountants in summary form only to provide information in the planning of future continuing education courses.

If you have questions concerning this survey, please call us at 770.934.5239 or email kperdue@mindspring.com.

Thank you in advance for your opinions!

Sincerely,

Kathy J. Perdue, CPA
Survey Coordinator
CPE Committee Member

Katrina Street
CPE Director
Georgia Society of CPAs

Thomas Valentine
Associate Professor
University of Georgia

Research at The University of Georgia which involves human participants is overseen by the Institutional Review Board. Questions or problems regarding your rights as a participant should be addressed to Institutional Review Board; Office of V. P. for Research; The University of Georgia; 606A Graduate Studies Research Center; Athens, Georgia 30602-7411; Telephone (706) 542-6514.

APPENDIX R

PROPOSED STUDY SURVEY INSTRUMENT

VERSION B

[Georgia Society of CPAs Letterhead]

CPE on the World Wide Web for CPAs

Although many CPAs have access to computer systems and the Internet, comparatively few are using the Internet as a method of completing their continuing professional education (CPE) requirements. The Georgia Society of CPAs is interested in why this is the case. This questionnaire is designed to measure your perceptions about "web based education" as a means of completing CPE requirements.

> ***Definition of Web based Education:*** *In the following questions, "web based education" means any form of education using computer systems and the Internet in which the professional and instructor are separated in place and/or time.*

SECTION I: PERCEPTIONS OF WEB BASED CPE COURSES. Please answer each statement below by circling only one response.

	Strongly Disagree ← → Strongly Agree					
1. I don't have the *computer hardware* necessary to participate in web-based CPE courses.	1	2	3	4	5	6
2. I don't have the *computer software* necessary to participate in web-based CPE courses.	1	2	3	4	5	6
3. I don't have the *technical knowledge* necessary to participate in web-based CPE courses.	1	2	3	4	5	6
4. I don't have the *confidence* necessary to participate in web-based CPE courses	1	2	3	4	5	6
5. I am *reluctant* to download the necessary computer software from the Internet (e.g., browsers, sound, video, graphics applications) in order to participate in web-based CPE courses	1	2	3	4	5	6
6. I don't have the *knowledge* to download the necessary computer software from the Internet (e.g., browsers, sound, video, graphics applications) in order to participate in web-based CPE courses	1	2	3	4	5	6
7. I don't have the *authority* in my work environment to download the necessary computer software from the Internet (e.g., browsers, sound, video, graphics applications).	1	2	3	4	5	6
8. I don't have reliable enough access to the *Internet* to participate in web-based CPE courses.	1	2	3	4	5	6
9. I don't have reliable enough access to *electronic mail (e-mail)* to participate in web-based CPE courses.	1	2	3	4	5	6
10. I don't have the *time* to learn how to use the web for a web-based CPE course	1	2	3	4	5	6

	Strongly Disagree ← → Strongly Agree
11. I don't have the *patience* to learn how to use the web for a web-based CPE course	1 2 3 4 5 6
12. I don't have access to adequate technology support services if I have a computer-related problem during a web-based CPE course	1 2 3 4 5 6
13. I prefer traditional classroom instruction over web-based CPE courses	1 2 3 4 5 6
14. I prefer using printed materials over the kind of electronic materials (e.g., computer screens, emails) used for web-based CPE courses	1 2 3 4 5 6
15. I prefer face-to-face interaction with my *peers* rather than electronic communication used in web-based CPE courses	1 2 3 4 5 6
16. I prefer face-to-face interaction with the *instructor* rather than electronic communication used in web-based CPE courses	1 2 3 4 5 6
17. I prefer hearing CPE lectures in person rather than reading them on a *computer screen*	1 2 3 4 5 6
18. I prefer hearing CPE lectures in person rather than hearing them through a *computer speaker*	1 2 3 4 5 6
19. I don't believe participating in web-based CPE courses is cost-effective	1 2 3 4 5 6
20. I don't believe that web-based CPE courses have sufficient advantages to justify using it for CPE	1 2 3 4 5 6
21. I don't believe that there are enough CPE providers offering quality web-based CPE courses	1 2 3 4 5 6
22. I don't believe that the course topics I want are available through web-based CPE courses	1 2 3 4 5 6
23. I am concerned that downloading CPE course materials from the web will take too long	1 2 3 4 5 6
24. I am concerned that my computer may take too long to bring up screen displays in web-based CPE courses	1 2 3 4 5 6
25. I am concerned that the web sites used in web-based CPE courses might change their appearance between the times I use them	1 2 3 4 5 6
26. I am concerned that the cost of *purchasing the computer hardware* needed to participate in web-based CPE courses is too high	1 2 3 4 5 6
27. I am concerned that the cost of *connecting to the Internet* is too high to justify participating in web-based CPE courses	1 2 3 4 5 6
28. I am concerned that the cost of *printing downloaded course materials* is too high to justify participating in web-based CPE courses	1 2 3 4 5 6
29. I am concerned that I might get lost moving around web sites during web-based CPE courses	1 2 3 4 5 6

	Strongly Disagree ← → Strongly Agree
30. I am concerned that electronic communication could be misinterpreted during participation in web-based CPE courses.	1 2 3 4 5 6
31. I am concerned that electronic discussion in web-based CPE courses would lack focus	1 2 3 4 5 6
32. I am concerned that web-based CPE courses might not provide immediate feedback.	1 2 3 4 5 6
33. I am concerned about spending too much time staring at a computer screen while participating in web-based CPE courses.	1 2 3 4 5 6
34. I am concerned that the instructor of a web-based CPE course might not be available when I need assistance	1 2 3 4 5 6
35. I am concerned that web-based CPE courses might involve completion of *written work*.	1 2 3 4 5 6
36. I am concerned that web-based CPE course might involve completion of *exams*	1 2 3 4 5 6
37. I am concerned that I might have too many interruptions in my office or home to participate in web-based CPE courses.	1 2 3 4 5 6
38. I am concerned that I would not participate enough in the on-line discussions in a web-based CPE course.	1 2 3 4 5 6
39. I am concerned that the graphics and movies in a web-based CPE course might be too distracting	1 2 3 4 5 6
40. I am concerned that a web-based CPE course might not provide printed reference materials for me to use in my work.	1 2 3 4 5 6
41. I am concerned that I don't know how to evaluate the quality of a web-based CPE course before enrolling in it.	1 2 3 4 5 6
42. I am concerned that I don't know other CPAs who have taken a web-based CPE course.	1 2 3 4 5 6
43. I am concerned that a web-based CPE course would take too long to complete	1 2 3 4 5 6
44. I am concerned about learning highly technical accounting information in a web-based CPE course.	1 2 3 4 5 6
45. I am concerned that I might not have enough self-motivation to complete a web-based CPE course	1 2 3 4 5 6
46. I am concerned that CPE credits may not be properly documented by the provider for a web-based CPE course.	1 2 3 4 5 6
47. I am concerned that the State Board of Accountancy will not recognize CPE credits earned in a web-based CPE course	1 2 3 4 5 6

	Strongly Disagree ← → Strongly Agree					
48. I am concerned about the *accuracy* of course content in a web-based CPE course	1	2	3	4	5	6
49. I am concerned about the *relevancy* of course content in a web-based CPE course	1	2	3	4	5	6
50. I am concerned that other people might not place as high a value on web-based CPE courses as on other forms of CPE.	1	2	3	4	5	6
51. I am concerned about submitting *written comments* over the Internet in order to participate in a web-based CPE course	1	2	3	4	5	6
52. I am concerned about submitting *financial* information over the Internet in order to participate in a web-based CPE course	1	2	3	4	5	6
53. I am concerned about submitting *personal* information over the Internet in order to participate in a web-based CPE course	1	2	3	4	5	6
54. I am concerned that a web-based CPE course would provide less variety than I could get at a conference	1	2	3	4	5	6
55. I am concerned that I would be unable to combine vacation time with fulfilling my CPE obligation if I participated in web-based CPE courses.	1	2	3	4	5	6
56. I am concerned that using web-based CPE courses would be too frustrating	1	2	3	4	5	6
57. It has never occurred to me to participate in web-based CPE courses to complete my CPE requirements	1	2	3	4	5	6

SECTION II: BACKGROUND – information totally confidential

58. Have you ever participated in self-study courses of any type, including audiocassettes, videocassettes, text, or computer, as a method of completing CPE requirements? (Circle *one*.) . . . Yes No

59. During the *last* reporting period, what percent of your CPE have you completed using self-study CPE courses, including audiocassettes, videocassettes, text or computer? _____ %

60. During the *next* reporting period, what percent of your CPE would you be interested in completing using "web-based CPE courses"? _____ %

61. Have you ever used the Internet to purchase goods or services? (Circle *one*) . . . . Yes No

62. In what arena do you practice accounting? (Circle *one*.)
Public Practice Industry Education Government Other (specify)_____

63. What is your gender? (Circle *one*) . . . . . Female Male

64. What is your age? _____ Years

65. How many years have you been certified as a CPA? _____ Years

66. What is your highest educational degree?
Bachelors' Master's Doctorate Other (specify)_____

Thank you for participating!!

APPENDIX S

STUDY SURVEY COVER LETTER

[Georgia Society of CPAs Letterhead]

October 1, 1998

Dear Member of the Georgia Society of CPAs:

Have you ever thought about using the Internet (World Wide Web) to complete your mandatory continuing education commitment? Although more continuing professional education providers are offering web based courses, most CPAs haven't participated in one. That's why we want to hear from **you.** The Georgia Society of CPAs' Strategic Planning Committee wants to know:

- What is your level of participation in these courses over the last two years?
- What is your anticipated demand for these courses in the future?
- What are the things that might make it difficult for you to participate in web based continuing professional education?

This research is important in order to identify courses that best fit your life. To help us with this research, please do the following:

- Complete the attached survey.
- Mail it back to GSCPA in the enclosed stamped envelope by October 15.
- Enclose a business card if you would like a copy of the final executive summary of the study.

Your opinions are safe with us. Your name will never be placed on the questionnaire or on any research report. The results of this research, conducted at The University of Georgia, will be made available to the Georgia Society of Certified Public Accountants in summary form only. Your answers to these questions will provide information to assist in the planning of future continuing education courses.

If you have questions concerning this survey, please call Kathy at 770.934.5239 or email kperdue@mindspring.com.

Thank you in advance for your opinions!

Sincerely,

Kathy J. Perdue, CPA	Katrina Street	Thomas Valentine
Survey Coordinator	CPE Director	Associate Professor
CPE Committee Member	Georgia Society of CPAs	University of Georgia

APPENDIX T

PROPOSED STUDY SURVEY INSTRUMENT

VERSION C

[Georgia Society of CPAs Letterhead]

CPE on the Internet (World Wide Web) for CPAs

Although many CPAs have access to computer systems and the Internet, comparatively few are using the Internet as a method of completing their continuing professional education (CPE) requirements. The Georgia Society of CPAs is interested in why this is the case. This questionnaire is designed to measure your perceptions about "web based education" as a means of completing CPE requirements.

> ***Definition of Web based Education:*** *In the following questions, "web based education" means any form of education using computer systems and the Internet in which the professional and instructor are separated in place and/or time.*

SECTION I: PERCEPTIONS OF WEB BASED CPE COURSES. Please answer each statement below by circling only one response.

	Strongly Disagree ↔ Strongly Agree
1. I don't have the *computer hardware* necessary to participate in web-based CPE courses.	1 2 3 4 5 6
2. I don't have the *computer software* necessary to participate in web-based CPE courses.	1 2 3 4 5 6
3. I don't have the *technical knowledge* necessary to participate in web-based CPE courses.	1 2 3 4 5 6
4. I don't have the *confidence* necessary to participate in web-based CPE courses	1 2 3 4 5 6
5. I am *reluctant* to download the necessary computer software from the Internet (e.g., browsers, sound, video, graphics applications) in order to participate in web-based CPE courses	1 2 3 4 5 6
6. I don't have the *skill* to download the necessary computer software from the Internet (e.g., browsers, sound, video, graphics applications) in order to participate in web-based CPE courses	1 2 3 4 5 6
7. I don't have the *authority* in my work environment to download the necessary computer software from the Internet (e.g., browsers, sound, video, graphics applications).	1 2 3 4 5 6
8. I don't have reliable enough access to the *Internet* to participate in web-based CPE courses.	1 2 3 4 5 6
9. I don't have reliable enough access to *electronic mail (e-mail)* to participate in web-based CPE courses.	1 2 3 4 5 6
10. I don't have the *time* to learn how to use the web for a web-based CPE course	1 2 3 4 5 6

	Strongly Disagree ↔ Strongly Agree
11. I don't have the *patience* to learn how to use the web for a web-based CPE course.	1 2 3 4 5 6
12. I don't have access to adequate technology support services if I have a computer-related problem during a web-based CPE course.	1 2 3 4 5 6
13. I prefer traditional classroom instruction over web-based CPE courses.	1 2 3 4 5 6
14. I prefer using printed materials over the kind of electronic materials (e.g., computer screens, emails) used for web-based CPE courses	1 2 3 4 5 6
15. I prefer face-to-face interaction with my *peers* rather than electronic communication used in web-based CPE courses	1 2 3 4 5 6
16. I prefer face-to-face interaction with the *instructor* rather than electronic communication used in web-based CPE courses.	1 2 3 4 5 6
17. I prefer hearing CPE lectures in person rather than reading them on a *computer screen*	1 2 3 4 5 6
18. I prefer hearing CPE lectures in person rather than hearing them through a *computer speaker*	1 2 3 4 5 6
19. I don't believe participating in web-based CPE courses is cost-effective	1 2 3 4 5 6
20. I don't believe that web-based CPE courses have sufficient advantages to justify using it for CPE	1 2 3 4 5 6
21. I don't believe that there are enough CPE providers offering quality web-based CPE courses.	1 2 3 4 5 6
22. I don't believe that the course topics I want are available through web-based CPE courses.	1 2 3 4 5 6
23. I am concerned that downloading CPE course materials from the web will take too long	1 2 3 4 5 6
24. I am concerned that my computer may take too long to bring up screen displays in web-based CPE courses.	1 2 3 4 5 6
25. I am concerned that the web sites used in web-based CPE courses might change their appearance between the times I use them	1 2 3 4 5 6
26. I am concerned that the cost of *purchasing the computer hardware* needed to participate in web-based CPE courses is too high	1 2 3 4 5 6
27. I am concerned that the cost of *connecting to the Internet* is too high to justify participating in web-based CPE courses	1 2 3 4 5 6
28. I am concerned that the cost of *printing downloaded course materials* is too high to justify participating in web-based CPE courses.	1 2 3 4 5 6
29. I am concerned that I might get lost moving around web sites during web-based CPE courses	1 2 3 4 5 6

	Strongly Disagree ← → Strongly Agree					
30. I am concerned that electronic communication could be misinterpreted during participation in web-based CPE courses.	1	2	3	4	5	6
31. I am concerned that electronic discussion in web-based CPE courses would lack focus	1	2	3	4	5	6
32. I am concerned that web-based CPE courses might not provide immediate feedback.	1	2	3	4	5	6
33. I am concerned about spending too much time staring at a computer screen while participating in web-based CPE courses.	1	2	3	4	5	6
34. I am concerned that the instructor of a web-based CPE course might not be available when I need assistance	1	2	3	4	5	6
35. I am concerned that web-based CPE courses might involve completion of *written work.*	1	2	3	4	5	6
36. I am concerned that web-based CPE course might involve completion of *exams*	1	2	3	4	5	6
37. I am concerned that I might have too many interruptions in my office or home to participate in web-based CPE courses.	1	2	3	4	5	6
38. I am concerned that I would not participate enough in the on-line discussions in a web-based CPE course.	1	2	3	4	5	6
39. I am concerned that the graphics and movies in a web-based CPE course might be too distracting	1	2	3	4	5	6
40. I am concerned that a web-based CPE course might not provide printed reference materials for me to use in my work.	1	2	3	4	5	6
41. I am concerned that I don't know how to evaluate the quality of a web-based CPE course before enrolling in it.	1	2	3	4	5	6
42. I am concerned that I don't know other CPAs who have taken a web-based CPE course.	1	2	3	4	5	6
43. I am concerned that a web-based CPE course would take too long to complete	1	2	3	4	5	6
44. I am concerned about learning highly technical accounting information in a web-based CPE course.	1	2	3	4	5	6
45. I am concerned that I might not have enough self-motivation to complete a web-based CPE course	1	2	3	4	5	6
46. I am concerned that CPE credits may not be properly documented by the provider for a web-based CPE course.	1	2	3	4	5	6
47. I am concerned that the State Board of Accountancy will not recognize CPE credits earned in a web-based CPE course	1	2	3	4	5	6

	Strongly Disagree ← → Strongly Agree					
48. I am concerned about the *accuracy* of course content in a web-based CPE course	1	2	3	4	5	6
49. I am concerned about the *relevancy* of course content in a web-based CPE course	1	2	3	4	5	6
50. I am concerned that other people might not place as high a value on web-based CPE courses as on other forms of CPE.	1	2	3	4	5	6
51. I am concerned about submitting *written comments* over the Internet in order to participate in a web-based CPE course	1	2	3	4	5	6
52. I am concerned about submitting *financial* information over the Internet in order to participate in a web-based CPE course	1	2	3	4	5	6
53. I am concerned about submitting *personal* information over the Internet in order to participate in a web-based CPE course	1	2	3	4	5	6
54. I am concerned that a web-based CPE course would provide less variety than I could get at a conference	1	2	3	4	5	6
55. I am concerned that I would be unable to combine vacation time with fulfilling my CPE obligation if I participated in web-based CPE courses.	1	2	3	4	5	6
56. I am concerned that using web-based CPE courses would be too frustrating	1	2	3	4	5	6
57. It has never occurred to me to participate in web-based CPE courses to complete my CPE requirements	1	2	3	4	5	6

SECTION II: BACKGROUND – information totally confidential

58. Have you ever participated in self-study courses of any type, including audiocassettes, videocassettes, text, or computer, as a method of completing CPE requirements? (Circle *one*.) . . . Yes No

59. During the *last* reporting period, what percent of your CPE have you completed using self-study CPE courses, including audiocassettes, videocassettes, text or computer? _____ %

60. During the *next* reporting period, what percent of your CPE would you be interested in completing using "web-based CPE courses"? _____ %

61. Have you ever used the Internet to purchase goods or services? (Circle *one*) . . . . Yes No

62. In what arena do you practice accounting? (Circle *one*.)
Public Practice Industry Education Government Other (specify) _____

63. What is your gender? (Circle *one*) . . . . . Female Male

64. What is your age? _____ Years

65. How many years have you been certified as a CPA? _____ Years

66. What is your highest educational degree?
Bachelors' Master's Doctorate Other (specify)_____

Thank you for participating!!

APPENDIX U

CPE DOLLARS CREDIT COUPON

CPE Dollars

$15

The Georgia Society of CPAs
3340 Peachtree Rd Ste 2700
Atlanta, GA 30326
404-231-8676 ext 500
CPE Customer Service

Re: CPE Survey

This certificate is good for $15 toward the CPE registration fee of any course or conference sponsored by the Georgia Society of CPAs, CPE Division. Programs co-sponsored by other groups may not be eligible. If you have any questions, please call CPE Customer Service 404-231-8676 ext 500 to verify a program's eligibility.

Fill out a regular registration form for the class you wish to attend. Fill out the information on this form. Mail this original certificate (no faxes) along with any additional money owed for the program. If the class fee is less than $75 no refund will be made. This certificate has no cash value and is non-transferable.

This certificate expires May 31, 1999.

Control number _____ CPE Survey at SE Accounting Show _____

Authorized signature _____

Redeemed for Course Number _____Redemption Date _____

Recipient's name _____

Firm name _____

Address _____

Phone _____ FAX _____

APPENDIX V

STUDY SURVEY SECOND MAILING

October 15, 1998

Two weeks ago a questionnaire seeking your opinion about the use of web-based education by certified public accountants was mailed to you. Your name was drawn in a random sample of members of the Georgia Society of Certified Public Accountants.

If you have already completed and returned it to us, please accept our sincere thanks. If not, please do so today. Because the survey has been sent to only a small, but representative sample of Georgia Society members, it is extremely important that your response be included in the study if the results reported to the Georgia Society's Strategic Planning Committee are to accurately represent the opinions of Georgia Society members.

If by some chance you did not receive the questionnaire, or it got misplaced, please call us right now, collect 770.934.5239 or email kperdue@mindspring.com. We will get another one in the mail to you today.

Sincerely,

Kathy J. Perdue, CPA
Survey Coordinator
CPE Committee Member

Katrina Street
CPE Director
Georgia Society of CPAs

Tom Valentine
Associate Professor
University of Georgia

APPENDIX W

STUDY SURVEY THIRD MAILING

Complete Survey and Earn CPE $$$s

CPA Internet (Web Based) Continuing Professional Education Survey

November 9, 1998

Dear (Mr./Ms. name):

As an accountant myself, I really understand how valuable your time is and how difficult it can be to respond to special requests. However, I also know how important continuing professional education is to professionals in our field and that's one of the reasons why I have been working closely with Katrina Street of the Georgia Society of CPAs to identify the best possible CPE format to meet your needs.

As I mentioned in earlier correspondence, we are currently engaged in a study to determine how well web based CPE fits into CPE opportunities currently offered to CPAs in the state of Georgia. Your response is extremely important to the success of this study. Although we have received many responses so far, we haven't yet received yours.

In order for the association to decide whether or not to expand its current CPE offerings to include web based courses, it is extremely important to hear the opinions of **everyone** we surveyed. Consequently, in order to induce you to add your opinion to the group's, they have decided to offer a special incentive with this mailing: **$15 of CPE credit** toward a future Georgia Society CPE course. In order to earn your inventive, please:

- Complete the attached survey
- Mail it back to the Georgia Society in the postage paid return envelope
- Watch your mailbox for $15 of CPE credit toward a future Georgia Society CPE course.

In the event that your questionnaire has been misplaced, a replacement is enclosed. We hope to hear from you in the near future. Your cooperation is greatly appreciated!

Cordially,

Kathy J. Perdue, CPA
Survey Coordinator

770.934.5239
kperdue@mindspring.com

Research at The University of Georgia which involves human participants is overseen by the Institutional Review Board. Questions or problems regarding your rights as a participant should be addressed to Institutional Review Board; Office of V. P. for Research; The University of Georgia; 606A Graduate Studies Research Center; Athens, Georgia 30602-7411; Telephone (706) 542-6514.

APPENDIX X

STUDY SURVEY FOURTH MAILING

[Georgia Society of CPAs Letterhead]

December 10, 1998

Dear Member,

Could you give us 10 minutes of your valuable time? By answering these survey questions, you will direct the way the Georgia Society embraces technology in our training curriculum. We need to hear from you whether or not you have ever logged on to the Internet. Even if you answered a version of this survey at the SE Accounting Show, please respond to this new survey. You represent a portion of the GSCPA membership and we need to have your input no matter what your opinions are!

Please take a few minutes before January 4 and fill out the survey. We will send you 15 CPE dollars as a "thank you" for sharing your opinions with us. The $15 credit can be used for any class sponsored by the CPE department in 1999.

Thank you in advance for your assistance. In helping us, you will be helping direct the future of technology in our CPE curriculum.

Sincerely,

Katrina N. Street
CPE Director

APPENDIX Y

PARTICIPANTS' GENERAL COMMENTS

Survey Number	Comments
87	"Too Many Questions!!"
102	"Note: I don't know what is out there or how to get to it. I would love to use the Web if you could give me information about it."
127	"I already use Internet based CPE Bisk.com"
140	"I find the web tedious & slow. I haven't seen any web based CPE advertised."
202	"Use of Double negatives is very frustrating. Poor Survey."
225	"I have no interest at this time in taking CPE other than at conferences."
254	"Why not training course on use of Internet & web based education?"
255	"I spend the majority of my day sitting at my desk working on a computer, therefore, I prefer a change of pace when I need to go for CPE credits."
270	"I selected '3' when I didn't believe I had adequate knowledge to answer the question, in most instances. I am interested in knowing more, however."
387	"I am not at all interested!"
391	"This is a horrible survey! Where are yes & no on this survey??"
435	"My work provides CPE credits with videotapes. I have no need for CPE via the web."
437	"My employer, PriceWaterhouse Coopers LLP, provides for all of my CPE requirements through instructor-based courses. I am not a current candidate for web-based CPE courses."

APPENDIX Z

PARTICIPANTS' SPECIFIC COMMENTS

Question No.	Survey No.	Comments
4	81	"I may need training"
7	39	"Ok at home"
	135	"N/A"
	241	'N/A"
	404	"?"
13	254	"This would change as experience with web & Internet increased"
	408	"Important to me."
14	254	"This would change as experience with web & Internet increased"
	408	"Important to me."
15	254	"This would change as experience with web & Internet increased"
	408	"Important to me."
16	254	"This would change as experience with web & Internet increased"
	408	"Important to me."
17	254	"This would change as experience with web & Internet increased"
	408	"Important to me."
18	254	"This would change as experience with web & Internet increased"
	408	"Important to me."
19	155	"?"
	326	"?"
	391	"Don't know"
	408	"Don't know"
20	178	"Don't know"
	326	"?"
	384	"I just do not know enough to know the answers to these questions."
	391	"Don't know"
	408	"Don't know"

Question No.	Survey No.	Comments
21	31	"I have no information about what is available"
	56	"Not sure what's available"
	74	"?" above answer
	102	"Don't know"
	129	"Don't know (Didn't know they existed.)
	134	"DK"
	155	"?"
	178	"Don't know"
	214	"?"
	236	"?"
	238	"Don't know"
	268	"?" added after answer
	277	"Don't know"
	326	"?"
	254	"Don't know"
	367	"?" added to answer of 3.5
	384	"I just do not know enough to know the answers to these questions."
	391	"Don't know"
	408	"Don't know"
	410	"?"
22	31	"I have no information about what is available"
	74	"?" above answer
	102	"Don't know"
	129	"Don't know (Didn't know they existed.)
	134	"DK"
	155	"?"
	178	"Don't know"
	214	"?"
	236	"?"
	238	"Don't know"
	277	"Don't know"
	326	"?"
	253	"?" added after answer
	254	"Don't know"
	367	"?" added to answer of 3.5"
	384	"I just do not know enough to know the answers
	391	"Don't know"
	408	"Don't know"
	410	"?"
23	74	"?" above answer
	178	"Don't know"
	326	"?"

Question No.	Survey No.	Comments
	253	"?" added after answer
	384	"I just do not know enough to know the answers to these questions."
	391	"Don't know"
24	74	"?" above answer
	149	"N/A"
	178	"Don't know"
	326	"?"
	384	"I just do not know enough to know the answers to these questions."
	391	"Don't know"
25	74	"?" above answer
	178	"Don't know"
	326	"?"
	384	"I just do not know enough to know the answers to these questions."
	391	"Don't know"
26	135	"N/A"
	178	"Don't know"
	384	"I just do not know enough to know the answers to these questions."
	391	"Don't know"
27	178	"Don't know"
	384	"I just do not know enough to know the answers to these questions."
28	178	"Don't know"
	384	"I just do not know enough to know the answers to these questions."
29	178	"Don't know"
	384	"I just do not know enough to know the answers to these questions."
30	178	"Don't know"
31	178	"Don't know"
32	178	"Don't know"
33	178	"Don't know"
34	178	"Don't know"

Question No.	Survey No.	Comments
35	178	"Don't know"
	408	"Don't care"
36	178	"Don't know"
	408	"Don't care"
37	178	"Don't know"
38	178	"Don't know"
39	56	marked out distracting and inserted "slow"
	178	"Don't know"
	310	"Too much time in download"
40	178	"Don't know"
41	178	"Don't know"
42	178	"Don't know"
	254	"Don't know"
43	178	"Don't know"
	254	"Don't know"
44	178	"Don't know"
45	178	"Don't know"
46	178	"Don't know"
47	178	"Don't know"
48	178	"Don't know"
49	178	"Don't know"
50	178	"Don't know"
51	178	"Don't know"
	408	"Don't care"
52	178	"Don't know"
	268	"I will not send my financial info - i.e. change card over Internet"
	354	"Of my clients yes; Discussed no"
	408	"Not a consideration"

Question No.	Survey No.	Comments
53	178	"Don't know"
	268	"I will not send my financial info - i.e. change card over Internet"
54	178	"Don't know"
55	135	"N/A"
	178	"Don't know"
	305	"what?"
	408	"Don't like to vacation with CPAs"
56	178	"Don't know"
57	95	Below the item - "I did not know they were available."
	178	"Don't know"
58	6	"10 months"
	42	"150/3 yrs 100/2yrs"
	47	"1/96 - 12/97"
	57	"Requirement"
	70	"N/A new CPA"
	82	Added "/yr" after Hours
	100	"Required min"
	102	"40-60"
	116	"/yr" added
	123	"none were required since this was 1st year"
	127	"+" added after answer
	128	"/year" added after Hours
	145	"+" added after answer
	150	"normally complete 40 hours/year" added after answer
	152	"I do not have the information at home - it is in my office."
	155	circled the term period and added "for who GA, AICPA, GSCPA"
	169	">" added before answer
	173	"+" added after answer
	177	"??" added before answer
	192	"(1996-1997)" added above the term period
	155	circled the term period and added "for who GA, AICPA, GSCPA"
	169	">" added before answer
	173	"+" added after answer
	177	"??" added before answer
	192	"(1996-1997)" added above the term period

Question No.	Survey No.	Comments
	224	"1 year I presume" written above last reporting period
	232	"+" added after answer
	234	"+" added after answer
	235	"+" added after answer
	236	"+" added after answer
	259	"+" added after answer
	268	"+" added before answer and "/yr" added after answer
	284	"per year" added after answer
	290	"N/A"
	297	"per yr" added after Hours
	298	"year" written in to replace reporting period, "+" added after answer
	299	"77 (1 year) 138/2 yr"
	300	"120 hours in GSCPA period, 40 Hours/yr"
	312	"80 hrs minimum" added after answer
	324	"?"
	329	"yr" added after answer
	338	"+" added after answer
	340	"Jan 1, 96-Dec 31,97"
	349	"?" added after answer
	377	"+" added after answer
	386	">" added before answer
	397	"+" added after answer
	402	"2 yrs" added after answer
	434	"over" added before answer
	436	"+" added after answer
	444	"+ in 1 yr" added after answer of 40
59	23	"1/2" - hours marked out
	42	"12/3yrs 6/2yrs"
	57	"50%"
	116	"/yr" added
	127	"+" added after answer
	177	"??" added before answer
	226	circle videocassettes
	277	"100% self study"
	290	"N/A"
	433	"25%"
60	57	"0%"
	127	"+" added after answer
	290	"N/A"

Question No.	Survey No.	Comments
61	11	"?"
	12	"75%"
	20	"?"
	21	"8-16"
	22	"?"
	23	"some"
	28	"8-16"
	31	"Only if it was a very technical, very specific course that I needed."
	33	"?"
	43	"?"
	56	"40-80"
	57	"50-75%"
	69	"?"
	74	"0 at present"
	77	"?" above answer
	81	"8-16"
	85	"some"
	96	"?"
	97	"+" added after answer
	100	"?"
	107	added "(as a test)"
	127	"+" added after answer
	133	"25-30%"
	135	"?" added after answer
	136	"8-16"
	146	"12-20"
	154	"1/3 - 1/2"
	155	"?"
	159	"would consider the possibility"
	163	"20-40"
	164	"8-16"
	166	"?"
	167	"?"
	170	"Don't know"
	174	"20-30"
	177	"8-10"
	183	"16-20"
	193	"12-20"
	196	"8-16"
	204	"?"
	209	"?"
	214	"?"
	215	"8-16"
	216	"?"
	218	"?"

Question No.	Survey No.	Comments
	234	"20-40"
	248	"Not sure"
	254	"As a test" added after answer
	257	"8-24"
	259	"?"
	259	"+" added after answer
	261	"4-8"
	270	"+" added after answer
	276	"Don't know"
	290	"N/A"
	291	"(?)" added before answer of "0"
	294	"?"
	298	"20-40"
	312	"80 total" added after answer
	315	"any"
	324	"?"
	334	"All A&A"
	335	"20-40"
	347	"?"
	360	"?"
	369	"ALL"
	372	"?"
	378	"16-24"
	392	"4-8"
	397	"?"
	404	"at this time" added after answer of "0"
	414	"?"
	433	"25%"
	436	"maybe" added after answer of "10"
	438	"8-16"
62	107	"(see 52 and 53)"
63	16	"Consulting"
	47	"Trust & Investment Services"
	48	"Convention Center"
	60	"Self-employed"
	79	"Stay-at-home mother"
	81	"Consulting"
	89	"Nonprofit corporation"
	99	"Recruiting"
	112	"Hospital (Business Analyst)"
	114	"Consulting"
	143	"private"
	159	"Consulting"
	175	"Healthcare"

Question No.	Survey No.	Comments
	208	"Consulting"
	213	"Personal Financial Planning"
	234	"Financial Application Consulting"
	235	"Consulting"
	265	"Resort"
	273	"Consulting"
	274	"Management"
	307	"Retired - Consultant"
	328	"Nonprofit"
	329	"Currently unemployed H.W."
	357	"Home Health"
	361	"Retired"
	371	"Law Firm - I don't keep up w/CPE - just ICCE"
	432	"Financial Consulting"
	440	"tax return prep"
65	157	"How is this relevant?"
66	31	"+ CA"
67	12	"ABD"
	19	"Some College"
	91	"2 Bachelors'"
	131	"J.D./LLM"
	268	"Law Degree"
	316	"Professional" added in addition to answer
	420	"No degree"
	433	"30+ hrs Post-Bach"

APPENDIX AA

RANK ORDER LISTING OF ITEMS

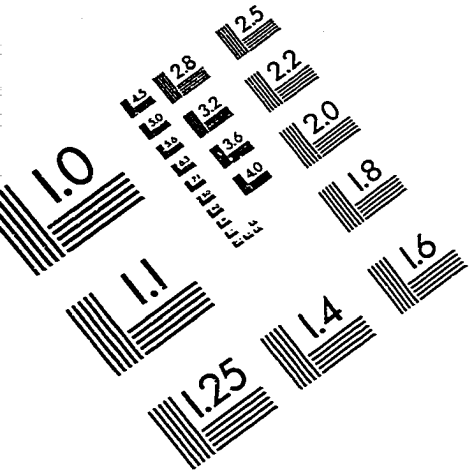
Rank	Item #	Item	M	SD
1	17	I prefer hearing CPE lectures in person rather than reading them on a *computer screen*.	4.20	1.55
2	57	It has never occurred to me to participate in Web-based CPE courses to complete my CPE requirements.	4.03	1.80
3	16	I prefer face-to-face interaction with the *instructor* rather than electronic communication used in Web-based CPE courses.	4.01	1.59
4	13	I prefer traditional classroom instruction over Web-based CPE courses.	4.00	1.53
5	18	I prefer hearing CPE lectures in person rather than hearing them through a *computer speaker*.	3.93	1.58
6	15	I prefer face-to-face interaction with my *peers* rather than electronic communication used in Web-based CPE courses.	3.89	1.59
7	14	I prefer using printed materials over the kind of electronic materials (e.g., computer screens, emails) used for Web-based CPE courses.	3.86	1.51
8	41	I am concerned that I don't know how to evaluate the quality of a Web-based CPE course before enrolling in it.	3.79	1.65
9	37	I am concerned that I might have too many interruptions in my office or home to participate in Web-based CPE courses.	3.79	1.73
10	53	I am concerned about submitting *personal* information over the Internet in order to participate in a Web-based CPE course.	3.77	1.79
11	52	I am concerned about submitting *financial* information over the Internet in order to participate in a Web-based CPE course.	3.68	1.77
12	38	I am concerned that I would not participate enough in the on-line discussions in a Web-based CPE course.	3.65	1.58
13	34	I am concerned that the instructor of a Web-based CPE course might not be available when I need assistance.	3.55	1.44
14	33	I am concerned about spending too much time staring at a computer screen while participating in Web-based CPE courses.	3.46	1.69
15	40	I am concerned that a Web-based CPE course might not provide printed reference materials for me to use in my work.	3.38	1.61
16	43	I am concerned that a Web-based CPE course would take too long to complete.	3.36	1.57
17	21	I don't believe that there are enough CPE providers offering quality Web-based CPE courses.	3.35	1.24

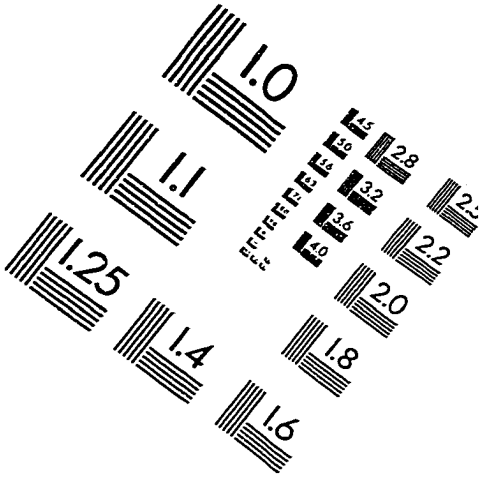
Rank	Item #	Item	M	SD
18	54	I am concerned that a Web-based CPE course would provide less variety than I could get at a conference.	3.30	1.50
19	42	I am concerned that I can't get a course recommendation from other CPAs who have taken a Web-based CPE course.	3.22	1.48
20	22	I don't believe that the course topics I want are available through Web-based CPE courses.	3.20	1.14
21	23	I am concerned that downloading CPE course materials from the web will take too long.	3.17	1.52
22	32	I am concerned that Web-based CPE courses might not provide immediate feedback.	3.11	1.48
23	45	I am concerned I might not have enough self-motivation to complete a Web-based CPE course.	3.08	1.63
24	44	I am concerned about learning highly technical accounting information in a Web-based CPE course.	3.04	1.51
25	31	I am concerned that electronic discussion in Web-based CPE courses would lack focus.	3.02	1.45
26	56	I am concerned that using Web-based CPE courses would be too frustrating.	2.98	1.50
27	24	I'm concerned that my computer may take too long to bring up screen displays in Web-based CPE courses.	2.96	1.49
28	35	I am concerned that Web-based CPE courses might involve completion of *written* work.	2.92	1.47
29	47	I am concerned that the State Bo: :d of Accountancy will not recognize CPE credits earned in a Web-based CPE course.	2.91	1.64
30	36	I am concerned that Web-based CPE courses might involve completion of *exams*.	2.89	1.57
31	20	I don't believe that Web-based CPE courses have sufficient advantages to justify using it for CPE.	2.75	1.36
32	46	I am concerned that CPE credits may not be properly documented by the provider for a Web-based CPE course.	2.74	1.50
33	50	I am concerned that other people might not place as high a value on Web-based CPE courses as on other forms of CPE.	2.67	1.47
34	51	I am concerned about submitting *written comments* over the Internet in order to participate in a Web-based CPE course.	2.58	1.44
35	5	I am *reluctant* to download the necessary computer software from the Internet (e.g., browsers, sound, video, graphics applications) in order to participate in Web-based CPE	2.55	1.56
36	39	I am concerned that the graphics and movies in a Web-based CPE course might be too distracting.	2.55	1.31
37	12	I don't have access to adequate technology support services if I have a computer-related problem during a Web-based CPE course.	2.54	1.56

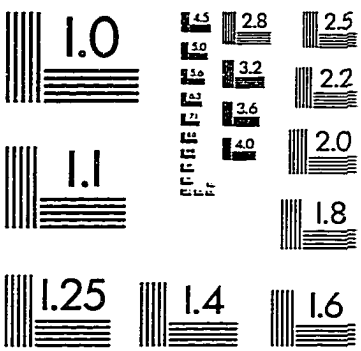
Rank	Item #	Item	M	SD
38	30	I am concerned that electronic communication could be misinterpreted during participation in Web-based CPE courses.	2.49	1.32
39	49	I am concerned about the *relevancy* of course content in a Web-based CPE course.	2.44	1.24
40	48	I am concerned about the *accuracy* of course content in a Web-based CPE course.	2.42	1.26
41	10	I don't have the *time* to learn how to use the web for a Web-based CPE course.	2.31	1.45
42	28	I am concerned the cost of *printing downloaded course materials* is too high to justify participating in Web-based CPE courses.	2.27	1.38
43	55	I am concerned that I would be unable to combine vacation time with fulfilling my CPE obligation if I participated in Web-based CPE courses.	2.25	1.47
44	29	I am concerned that I might get lost moving around web sites during Web-based CPE courses.	2.25	1.40
45	19	I don't believe participating in Web-based CPE courses is cost-effective.	2.25	1.11
46	25	I am concerned that the web sites used in Web-based CPE courses might change their appearance between the times I use them.	2.24	1.19
47	6	I don't have the *skill* to download the necessary computer software from the Internet (e.g., browsers, sound, video, graphics applications) in order to participate in Web-based CPE courses.	2.24	1.44
48	11	I don't have the *patience* to learn how to use the web for a Web-based CPE course.	2.22	1.36
49	7	I don't have the authority in my work environment to download the necessary computer software from the Internet (e.g., browsers, sound, video, graphics applications).	2.08	1.70
50	26	I am concerned the cost of *purchasing the computer hardware* needed to participate in Web-based CPE courses is too high.	2.03	1.35
51	3	I don't have the *technical knowledge* necessary to participate in Web-based CPE courses.	1.89	1.31
52	8	I don't have reliable enough access to the *Internet* to participate in Web-based CPE courses.	1.89	1.46
53	2	I don't have the *computer software* necessary to participate in Web-based CPE courses.	1.86	1.52
54	4	I don't have the *confidence* necessary to participate in Web-based CPE courses.	1.83	1.23

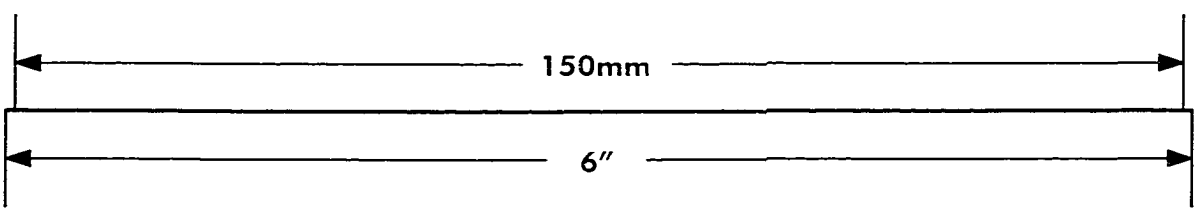
Rank	Item #	Item	M	SD
55	27	I am concerned the cost of *connecting to the Internet* is too high to justify participating in Web-based CPE courses.	1.80	1.18
56	9	I don't have reliable enough access to *electronic mail (e-mail)* to participate in Web-based CPE courses.	1.79	1.42
57	1	I don't have the *computer hardware* necessary to participate in Web-based CPE courses.	1.55	1.29
		Average	**2.88**	

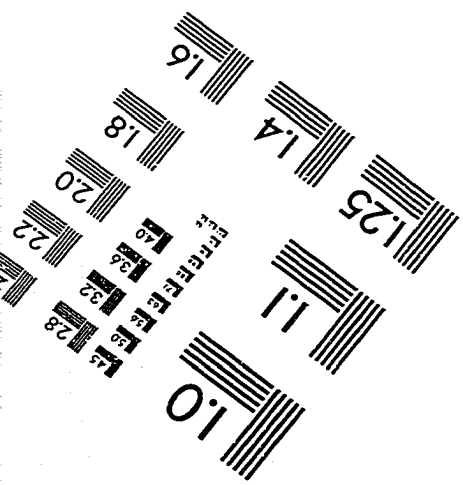
IMAGE EVALUATION TEST TARGET (QA-3)

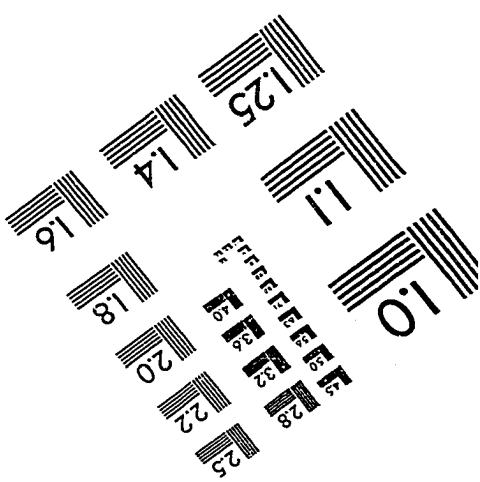












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