INTRODUCTION CHAPTER
Background Information

Today’s students are the first true Internet generation (Chiaramonte, 1997). Their expectations and style of learning are greatly influenced by the computer and other multimedia. In a 1995 study, Collins surveyed 25 corporate executives in the hospitality industry regarding the impact of technology on their businesses. The results revealed that 88% believed that in order to stay competitive, advanced or “cutting edge” technology was essential. In support of this belief, 80% said that their companies’ budgets for technology would increase within the next five years. The use of technology in the industry needs to start in the classroom. According to Kluge (1996), computers and information technology are critical components of the hospitality curriculum.

All areas of the hospitality industry are experiencing vigorous growth. In 1997, 9.5 million people worked in the restaurant industry alone; this number is expected to reach 11 billion by 2005 (NRA 1998 Highlights). Tourism is the third largest industry in the world today and is increasing. In 1996, hotel sales reached $75.4 billion and travel and tourism creates one in every nine jobs globally (AH&MA, 1998). With continuing industry growth, the demand for hospitality professionals is greater than ever. Confounding this need, many of the leaders in hospitality management are nearing retirement, so while the demand increases, the pool of available resources is shrinking (Turner, 1998). To meet this growing need, over 400 colleges and universities offer degrees in Hospitality Management (CHRIE, 1997). Between the years of 1970 and 1989, the gap in pay between college graduates and those with only high school degrees widened from 40% to almost 70% (Becker, 1995). This emphasis on education is encouraging many people already in the industry to further their education. However, due to personal and professional responsibilities, it is not always possible to attain a degree as a
traditional student. Distance learning provides solutions for adults who wish to remain active participants in the workforce (Schneider, 1997).

Distance education is not a new concept. As early at the 1800’s, correspondence courses were offering education to those not able to attain it in a more traditional manner. Since that time, distance education has continued to offer the non-traditional student scholarship opportunities. Until recently, the format and delivery style of these distance education courses remained relatively unchanged from the days of the old correspondence course. Today however, advances in technology are creating new options for the distance student. Satellite, Internet, and CD-ROM courses are improving distance education and making it accessible to an ever-widening audience. The use of E-mail, Internet Relay Chat (IRC), and real-time audio and video streaming techniques are quickly overcoming the most common complaint regarding distance education; the lack of personal interaction between student and teacher. Advances in technology are occurring at a daily rate. These changes bring exciting opportunities but also many questions. Decisions of which delivery method is most appropriate for each course and an assurance that these courses are of a quality that befits the institution that offers it must be considered. The newness of these technologies means that very little research has been done regarding the suitability and effectiveness of these emerging technologies for distance education. The oldest of the distance education technologies, satellite delivery has the greatest amount of published research yet even it has very little available information on the effectiveness of the courses. This is especially true in the area of hospitality education.
Significance/Justification for importance of problem

For many years, advancement in a hotel or restaurant meant working your way up from dishwasher or bell person through the ranks until you earned a management position. Today, rapid expansion, a transient workforce, increased competition, and a global economy require managers to have college degrees in hospitality management. Those who do not will find themselves earning considerably less than their degreed counterparts. Unfortunately, not everyone interested in hospitality as a vocation is able to attain a degree in the traditional manner. This is especially true of those members of the hospitality community that are already working and established in the industry but unable to advance due to the lack of formal education.

Increasing enrollment and funding constraints have affected the availability of faculty resources in higher education. Many schools have been unable to accommodate the number of students wishing to attend these institutions (Blumenstyk, 1998). Most institutions have a limited number of faculty and expertise that they are able to support. The result is specialization and/or limited faculty teaching a broad range of subjects (Connell, 1996). The students attending these institutions graduate with a strong background in some aspects but lacking competencies in others. By taking advantage of courses offered via distance education, these students will be able to attain a more comprehensive education and enter the workforce as well rounded professionals (ADEC, 1997).

Distance education is only as good as the courses available. The distance student should receive the same quality education as the traditional student. This makes evaluating courses in distance education an essential part of the development process. Limited research has been done on the effectiveness of distance education as a teaching method. The available research focuses
on the perceptions and attitudes of the students and teachers involved in a distance education course rather than how much the students learn. To date, the information compiled deals mainly with satellite delivery and has included very little data as to how effective these courses were. The purpose of this study is to evaluate the effectiveness and acceptability of the distance education course, *The History of Cuisine*, using Internet and IRC technologies as the delivery method.

**Objectives of the Study**

The objectives of this study are:

- To evaluate the effectiveness of the distance education course *The History of Cuisine* using student test scores as the unit of measure.
- To evaluate the acceptance to the student of the distance education course *The History of Cuisine*.
- To measure perceptions regarding distance education of the students taking the distance education course, *The History of Cuisine*, both before and after the course.

**Research Questions/Hypothesis**

Ho1. There will be no significant difference in the test scores of students using the two delivery methods (Traditional Classroom and Distance Education) for the course *The History of Cuisine*.

Ho2. There will be no significant difference in acceptance of students using the two delivery methods (Traditional Classroom and Distance Education) for the course *The History of Cuisine*.

Ho3. The perceptions regarding distance education of students taking the distance education course *The History of Cuisine* will not change pre and post course.
The independent variable for this study will be the delivery method (distance or traditional) and the independent variables will include; test scores, acceptance, and perceptions regarding distance education both before and after the course.

**Definition of Terms**

**Test Scores**

Test Scores will be defined as the points earned (out of the points available) for evaluations given by the professor (for both traditional and distance formats). A combination of these scores will be used by the professor to assess the grade that the student will earn for credit at their respective institutions.

**Acceptance**

Acceptance will refer to the attitude of the students regarding the adequacy of the course *The History of Cuisine* and the format in which it is presented and taught.

**Distance Education**

Distance Education (DE) or Distance Learning (DL) is teaching at a distance. It is a model where the students and teachers do not physically meet in a traditional classroom. The lessons are delivered using an alternate medium. These delivery methods include but are not limited to: paper (correspondence courses), one/two way satellite transmission, video and audiocassettes, the World Wide Web/Internet, Desktop Conferencing, CD-ROM, and Hypertext/Hypermedia. As technology expands, the options for delivery methods will likewise expand.
**Hypertext/Hypermedia**

Hypertext and hypermedia are primary modes of access and storage in the computer environment today. Text and media are displayed in the normal manner but hyperlinks on the page allow the user to move through the information in a non-linear fashion. These hyperlinks can connect users to additional information, new documents or even quick-time movies and audio files. Hypertext is the method that is used to travel around the World Wide Web.

**Computer Assisted Instruction (CAI)**

Computer training or education that uses the computer as a stand-alone teaching tool.

**Computer Managed Instruction (CMI)**

An internal tracking program that takes advantage of the computer’s multitasking capabilities to track and record the students’ progress. It is not an educational package in itself, it is used to chronicle the student’s development within a course or program.

**Computer Mediated Communication (CMC)**

The computer is linked to other computers (usually via the World Wide Web or Internet) and allows the student to communicate with others using applications such as e-mail and bulletin boards.

**Computer-Based Multimedia**

Any computer program or combination of programs that integrate hypertext and hypermedia to create powerful and interactive learning experiences.
**Internet**

The Internet refers to the physical network of computers that are linked via smaller, regional networks to cover create a global network.

**World Wide Web (WWW)**

The World Wide Web is the body of information that can be accessed via the Internet.

**Satellite**

Transmissions using satellite technology to transmit lectures to viewers at remote locations in real time. The transmission can be *one way* which allows the students to see the teacher or *two way* in which teacher to also sees the students creating an interactive experience. Other options also include *one way video-two way audio* where the teacher can speak with and hear the students but cannot see them.

**Desktop Video Conferencing**

An emerging technology that allows several participants to sit at their desks and use their computers to communicate in real time, using audio, video and computer desktop resources. It is similar to a video telephone with *whiteboard technology*, which allows the participants to show others what is on their computer desktops.

**Whiteboard Technology**
A software technology which allows several computers to view and edit one computer desktop using the internet.

**Electronic Mail (e-mail)**

A high technology post office service that allows the delivery and receipt of correspondence to other individuals via the Internet.

**Bulletin Board**

A technological open forum where information can be posted and accessed by multiple people and computers in an asynchronous discussion format.

**Internet Relay Chat (IRC)**

Much like a real-time bulletin board, IRC is an open forum that permits discussion between several participants using remote computers in a synchronous manner.

**Knowledge Webs**

A compilation of experts and resources compiled and structured on the World Wide Web to provide information and access to a given topic (Dede, 1995).

**Virtual Reality**

Computer generated experiences developed to give the illusion and perception of reality in which the person experiencing the effect may interact.
Computer Simulation

A computer generated simulation designed to allow a user to experience a situation in a virtual environment.

Assumptions

The assumptions for this study include the assumption that the instruments will be adequate to test the proposed hypotheses. An assumption will also be made that the students used for the study will be representative of the population of students taking the course History of Cuisine. In addition, it will be assumed that the material and content presented in the distance education course will be the same material and content presented in the traditional classroom.

Limitations/Delimitations

This study is using a convenience sample of students who enroll in either the Traditional or Distance Education course, History of Cuisine. It therefore does not reflect or describe all students or distance education courses. In addition, due to the growing number of delivery methods available in distance education and the rapid rate of development and improvement in the existing technologies, similar studies should continue to be done to measure the effects of the improved technology on the results.
Review of Literature
Background

Information Technology

Information technology has changed the way that we view the world. John Beckett (1996) noted that technologies such as e-mail and the Internet are as much a part of today’s students’ lives as the television or telephone. He stated that this is just the beginning. Rapid advances in information technology have caused businesses and universities to reassess the way they operate. Liu (1997-8) indicated that interactive and mediated technology is becoming an integral factor in higher education. The use of these technologies both as formal teaching aids and informal research tools has changed the way that educators teach and students learn.

Distance education has derived tremendous benefit from this proliferation of new educational technologies. Although distance education is not a new concept, innovations such as the Internet, hypertext technology, and digital satellite transmission are a long way from the correspondence courses of the past.

Distance Education

In the late 19th century, a new form of education was introduced. Correspondence courses offered the non-traditional student an opportunity to pursue an education. Since that time, distance education has been available in one form or another as an alternative to the traditional classroom. Recent technological advances have made distance education increasingly popular and helped to bridge the gap between distance education and the traditional classroom. These new technologies have created opportunities for live interaction between teacher and student, even if that student is miles away (Thomerson and Smith, 1996).
Many definitions of distance education have been used over the years. In 1973, Moore defined distance education as:

“Distance teaching may well be defined as a family of instructional methods in which the teaching behaviors are executed apart from the learning behaviors, including those that in a contiguous situation would be performed in the learner’s presence, so that communication between the teacher and the learner must be facilitated by print, electronic, mechanical and other devices.”

More recently, Virginia Steiner of the Distance Learning Resource Network (DLRN) defined distance education as:

“Instructional delivery that does not constrain the student to be physically present in the same location as the instructor. Historically, Distance Education meant correspondence study. Today, audio, video and computer technologies are more common delivery methods” (Distance Education Clearinghouse [DEC], 1997).

As the popularity of distance education has increased, the number of courses available at many of today’s colleges and universities has likewise increased. Several institutions have been created that are devoted exclusively to distance education even offering degree programs without ever having to enter the classroom. The University of Phoenix and The Western Governors University (WGU) are examples of this new “Virtual University” (Blumenstyk, 1998). American Distance Education Consortium (ADEC), a consortium of land grant colleges in cooperation with the National Center for Supercomputing Applications (NCSA), is developing an on-line Virtual Learning Environment (ADEC, 1996).

Higher Education Institutions are not the only organizations to recognize the value of distance education and computer mediated learning. The federal government is devoting millions of dollars to the study and development of distance education and the technologies and teaching paradigms that facilitate and improve its delivery. The United States Department of
Agriculture (USDA) and the Fund for the Improvement of Postsecondary Education (FIPSE) have awarded federal funds and research grants to a multitude of institutions, including Kansas State University for this very purpose. In 1987, FIPSE alone has sponsored over twenty new distance education/computer mediated education studies. In addition to civilian federal programs, the armed services are also investing in the possibilities offered by distance education, the US Army has budgeted $840 million over the next thirteen years to develop access, education and training using distance methods (Phipps et al, 1998).

In addition to educational and governmental sources, the private sector has also discovered the benefits of distance education and educational technologies for the purposes of training and professional advancement. By taking advantage of the available options, companies can now provide consistent and economical quality training to their employees despite geographical and language barriers. Furthermore, vital employees are able to remain in place while pursuing educational opportunities reducing turnover and making valuable employees even greater assets.

However, the greatest benefits are to the individual. Current and future technology is promoting and enhancing the concept of lifelong learning. By utilizing the available resources, people of all ages will be able to augment their traditional education and explore new areas of interest or supplement and update their current education (DETC, 1998; Phipps, et al, 1998).

The same technologies that benefit adult and lifelong learning are also finding acceptance and utilization in pre-college education as well. Chris Dede, a George Mason University
professor in the Graduate School of Education and acknowledged expert in the field of computer mediated education, offered testimony before the US Congress regarding the use of technology in the classroom in the 21st century. He stated that the use of Knowledge Webs, Virtual Communities, Computer Simulation Experiences and Shared Synthetic Environments are the emerging technologies and teaching tools of the future. In his testimony, he stressed the importance of active and collaborative learning using real life examples. By using these technologies, students will be able to have realistic, hands on experiences in a secure environment (Dede, 1995).

Bates (1997) stated that the four most common reasons for using information technologies and distance education were: “1) to improve access to education and training; 2) to improve the quality of learning; 3) to reduce the costs of education; and 4) to improve the cost-effectiveness of education”. He indicated that many of these reasons might be contradictory or incompatible. However, the possibilities and advantages offered by these new technologies far outweigh the drawbacks (Bates, 1997). Nevertheless, many educators and students view distance education as inferior to traditional face-to-face classroom experiences. It is not practical to judge the two educational delivery methods using the same measurements. While both should be held to the same standards of critical appraisal, the approach to learning is different, therefore, the objectives and expectations should also be different. Unlike the traditionally passive classroom approach, distance education requires a commitment to an active learning model. Both students and teachers must keep this in mind when considering distance education (Marsden, 1996). Jonassen, Davidson, Collins, Campbell and Haag (1995) discussed the problems associated with merely transferring the standard classroom lecture model to a distance
education mode. A “constructivist epistemology” must be developed to take full advantage of
distance education technologies (Jonassen et al, 1995). This paradigm shift in teaching and
learning techniques can be advantageous. Recent studies involving learning styles, personality
traits, and evolving student needs can be incorporated into the development of distance education
courses, thereby, tailoring the class to best fit the particular requirements of the student.

Students, Personality Traits and Learning Styles

Kolb’s Learning Theory

In 1994, Esichakiul, Smith and Madey conducted a study that investigated Kolb’s
Experiential Learning Theory and how people with different types of learning styles performed
using a problem solving computer program called HyperSolver. Using Kolb’s Theory and the
LSI (Learning Style Inventory) test, a convenience sample of 34 MBA students at Kent State
were grouped according to their scores into one of four learning styles. The LSI test classified
the learner by scoring them according to their preference for concrete experience vs. abstract
visualization and active experimentation vs. reflective observation. These scores were then
plotted on a grid with four quadrants each representing a different learning style. The four types
were Diverger, Assimilator, Converger and Accomodator. The Diverger has great imagination
but is not an abstract thinker. The Assimilators were good at theoretical models but were
reluctant to take risks. The Convergers exceled at practical applications and were extremely
logical but tended to be somewhat antisocial. The Accomodators were the risk takers, preferring
“hands on” experience but have tendencies toward impatience. The students were not given the
results of this test. Once the subjects were classified, they were each given a set of three business
problems and asked to solve them using HyperSolver. The students were given two hours to
solve the problems. Their performance was rated with two measures: time needed to solve the problems and the quality of the solutions that they came up with. The results of the study indicated that learning style did have a significant impact on the quality of the solutions to the problems but that there was no difference in the aspect of time needed to complete the assignment. Abstract conceptualization oriented learners (converger and assimilator) performed significantly higher quality work than those who preferred concrete experience. These data suggested that computer instruction programs can be developed to test and accommodate the appropriate learning style of the user (Esichakiul et al, 1994).

While an understanding of learning styles has an impact on the future of distance education, perhaps one of the greatest factors that must be considered is the students’ understanding of the technology itself. The rapid advances in technology have affected both the traditional and non-traditional student (Bates, 1997). How quickly the students are adapting to the new technologies and applications have a significant impact on how this technology can be used as a teaching tool.

**Changing Computer Skills of Students**

Khan (1997) conducted a study to track the changes in computer literacy and skills of incoming business majors between 1990 and 1996. A second objective was to discover if computer access was affected by the racial backgrounds of the students. The study used data from a previous study done in 1990 and compared it to new data gathered from a questionnaire administered to a convenience sample of 283 incoming sophomore undergraduate business students enrolled in a Systems course at California State University, Long Beach in the fall of 1996. A significant increase was found in all categories of basic computer skills and literacy except in the area of computer programming. Almost all of the students (99.65%) of the students
had heard of the Internet, however, only a little more than half (58.3%) had actually used it. Only about a third of the students indicated having any knowledge about multimedia. The data also revealed that while more students have access to personal computers than in 1990, Caucasians and Asian Americans had significantly greater access than those students of Hispanic or African American heritage (Khan, 1997).

**Personality Characteristics and Distance Education**

While distance education is a benefit for some students, distance education may not be the best option for everyone. Biner, Bink, Huffman and Dean (1995) conducted a study to identify differences in personality traits between traditional and non-traditional students and determine whether those traits are predictive of success in distance education. The researchers administered *the Sixteen Personality Factor Questionnaire* to a convenience sample of 449 undergraduate and graduate students in a wide variety of areas of study. In all, 178 of the students took the courses via live broadcast from 68 remote sites across the state while 271 students attended the classes on campus. The personality test was administered in class (for both the local and remote students) and the students were asked to sign releases of their grades for the purposes of evaluation. The questionnaire was used to determine specific personality traits of the traditional vs. non-traditional student. The study found that telecourse (non-traditional) students were more intelligent, emotionally stable, compulsive, dependent, trusting and conforming than their traditional counterparts. Additionally, predictors of higher grades differed between traditional and non-traditional students. The traditional students who achieved high grades tended to be more serious, shy, emotionally stable, liberal, and imaginative than their peers. The common traits among the high scoring non-traditional students were self-sufficiency
and a somewhat more relaxed attitude than the other telecourse students. While the non-traditional students were overall more compulsive, those that were not as uptight tended to have higher scores. In addition, while successful traditional students scored high on conscientiousness, the non-traditional student did better with a more expediency-based approach. These data suggested that personality tests could be administered to identify students who are potentially at risk of low-performance and offer intervention strategies (Biner et al., 1995).

In a related study, Biner, et al. (1996) investigated the impact that demographic variables, student attitudes, and previous distance education experiences had on perceptions and satisfaction of a distance education course. This study investigated whether students’ age, gender, socioeconomic status, personal income, and prior telecourse experiences were predictive of satisfaction with certain televised college level courses. A Telecourse Evaluation Questionnaire (TEQ) was given to 699 (447 female, 248 male) undergraduate and graduate students enrolled in 33 telecourses (sent to 122 remote sites) at a large Midwestern University during the 1993-4 and 1994-5 academic years. A Likert-type scale was used to investigate three statistically determined factors: instructor/instructional satisfaction, technical satisfaction, and logistic/management aspects of interactive telecourses. Gender was the main factor affecting satisfaction; females were statistically less satisfied with the instructor and management aspects than were the males. The data also indicated a significant association between experience and satisfaction. As the experience increased, satisfaction with instructors decreased. The researchers speculated that this was due to the increased expectation of production values associated with telecourses. The data, however, did not reveal any significant correlations related to demographic factors such as socio-economic status or age (Biner et al., 1996).
While personality traits may be useful in helping to target students that are potential candidates for distance education, more is involved than just who is most likely to succeed. Perceptions and expectations of the students must be taken into account when developing courses for hospitality students.

**Perceptions of Hospitality Students Regarding Distance Education**

In a 1995 study, Iverson examined the different factors that influence hospitality students’ interest in distance education. The variables of interest for this study were demographics, student motivation, student GPA, external factors, and perceived quality of distance education courses as they related to the students’ interest in taking different types of distance education courses. In particular, this study investigated hospitality students’ perceptions of four forms of distance education (satellite, computer mediated, telecourse, and correspondence) and their motivation for choosing distance education over the traditional classroom. This study examined the students themselves and their interest rates in relation to internal motivation, outside constraints, and GPA. A randomized sample of 65 students was drawn from the 180 hospitality students enrolled at a community college near a large metropolitan area. Participation for this study was voluntary and unpaid. The students were given a four-part survey. The first part contained questions related to demographics. The second asked students about different constraints (i.e. family, time, job etc…) they encountered. A third described the four forms of distance education and asked the student to rate their interest and perceptions of quality using a likert-style scale (ratings from one to five.) The fourth part assessed the students’ motivation and used an adaptation of the Telecourse Prediction Inventory, which classified the students into high, medium and low motivation. Students indicated only
moderate interest in distance education; they were most interested in computer mediated courses. Satellite and computer courses were perceived as having the highest quality of the distance delivery methods but were rated lower than that of the traditional classroom experience. No significant differences were found in ethnic diversity or any of the other demographics (i.e. gender, age, and marital status.) Significant differences were found in employment status. Of the students surveyed, 26% worked full-time, 55% part-time, and 19% did not report working. A significant relationship was found between interest in distance education and employment. The students working full time were considerably more interested in distance education opportunities than those not working. A positive correlation was observed between GPA and interest. A positive correlation was also noted between the amount of constraints on the student and their interest in the use of distance education. Results suggested that the traditional student will probably not opt for distance education courses. However, non-traditional students, working people, and companies who wish to offer training and empowerment to their employees viewed distance education as a feasible alternative to the constraints of a traditional education (Iverson, 1996).

As the demand for distance education grows, the competition for students will also increase. Choosing the appropriate format for a given course will have a significant impact on its effectiveness and success. While the material and content of the class will influence how that course is best presented, there are other factors that must be considered. Given the variety of technologies available, it is important to understand the inherent strengths and limitations of each venue to optimize the learning environment.

Available Technologies
Satellite and Telecourse Education

Satellite courses, the oldest and most studied of the distance education technologies, can be broadcast to a great number of people at one time. Innovations in technology which now allow for interactivity and multimedia enhancements are taking satellite and telecourses beyond the traditional “tele-lecture” (Larson and Bruning, 1996).

Thomerson and Smith (1996) conducted a study that explored the perceptions of the classroom experience of students majoring in education taking courses at Valdosta State University between 1993 and 1994. The variables for this study consisted of the three ways in which courses could be taken (remote, host, & traditional) in relationship to the perceptions of those students in three areas: teacher-student interaction, physical learning environment, and overall enjoyment of the course. A survey was developed using an amalgam of several different and related surveys and administered to a stratified sample of 165 students from each classroom type (n = 495). A total of 346 surveys (69.89%) were returned. The areas of course enjoyment/satisfaction and the physical learning environment were found to be significant. In both instances, the traditional classroom students scored significantly higher. In addition, there were more complaints regarding the ability to hear the instructor in comparison to the other two groups. No significant differences were found in the categories of student-teacher interaction and course structure between the groups (Thomerson and Smith, 1996).

The need for qualified teachers in rural areas has intensified. Distance education (i.e. satellite courses) might be a way to help compensate for the scarcity of teachers in those areas. Distance learning situations are most effective when used in conjunction with a traditional classroom. By offering a course that has both components, the students receive the best of both types of teaching styles. In 1996, Larson and Bruning explored the perceptions and performance
of students and teachers participating in a mediated satellite-based mathematics course. The mathematics course was developed and transmitted using Nebraska Educational Television and offered to schools throughout Nebraska. The class was offered during the 1993-4 school year and targeted high school seniors who intended to continue their education but had not achieved the competencies needed to advance to a higher degree. Each class started with a real-life problem and used full motion video and computer graphics to illustrate the concepts. In addition to the satellite teacher, a second teacher was present in each classroom to answer questions and work with the students. Two-way audio allowed for interaction between classroom and satellite teacher. The participants in this exploratory study consisted of 154 students and 21 teachers. This was a convenience sample that encompassed all of the students and teachers using this forum for the school year. Student performance was measured using a pre and post college placement test for mathematics. The test scores for these students were compared with a control group of 102 traditional instruction students. Perceptions regarding the course were broken down into six categories – three each for teacher and student. The categories for the students included: the satellite format itself, the curriculum and instruction, and student disposition. The teachers were surveyed for perceptions on professional growth, curriculum and instruction, and their viewpoint of the students. Open-ended questionnaires, reflective logs, and classroom observation were used to measure the qualitative data. The results indicated that the main cause for dissatisfaction with the satellite-based course was that the students felt that the student-teacher interaction was lacking and that the broadcast did not allow for changing the pace to fit the needs of the individual. Although there was two-way audio, the students did not feel comfortable asking questions of the remote professor. Despite these concerns, most of the students indicated the format provided a change of pace; the student responded positively to the
opportunity to learn with student from another school. Key words such as “enjoyable”, “new”, “more interesting” and “unique” were among the most common used to describe the experience. In addition, the satellite format motivated the students to do better as the concept of being on TV was fun and the prospect of looking foolish in front of the entire state made many students admit to being better prepared than they normally would have been. The most successful area of the study was in the area of curriculum and instruction. The students felt that the examples were better and more suited to practical application than those in previous courses that they had taken. The use of multiple methods of instruction and use of video segments as well as other visual demonstrations were considered the greatest strengths of the satellite program. The results of the student disposition theme showed that the majority of the students enjoyed the course and found it interesting and perceived it as an important contribution to learning. However, although many stated that they would recommend the course to others, they still preferred the traditional classroom model where the teacher could adjust the pace of the course. More than seven times as many students felt that their knowledge and understanding of the subject matter had improved and twice as many indicated a positive disposition for math in general after the course was completed. The teacher’s perceptions were very positive. The teachers felt that their professional growth due to the interaction with other teachers and introduction to new teaching methods was enhanced considerably. The satellite course also allowed the teachers more time to prepare for other classes as lesson plans and curriculum strategies were already prepared. The opportunity to observe other teachers was identified as a factor most appreciated by the teachers. As with the students, the teachers did express concern regarding the pace at which the course was presented and pointed out that it did not take into account the individual school schedules. The teachers did feel that the students enjoyed the satellite format by a ratio of four-to-one. The
teachers believed that the real life examples helped the students better understand the subject matter. The students were given a college placement exam both before and after the class and showed a significant improvement in the mean score between pre and posttest. The students in the control group did have a higher mean average both pre and posttest, however, those in the traditional class were the students that were already in the advanced track for mathematics. The difference in improvement between the control and satellite groups was significant; the satellite group has a 89.2% improvement rate compared to a 51% improvement for the control group. The mean growth of the students in college placement level was determined for the control and satellite groups. The traditional students actually exhibited a loss with a 0.99 while the students satellite group placement level was 1.32 overall. Data suggested that the satellite course is an effective method of helping college bound students “catch-up” and improve their math skills. This study suggested that the use of satellite technology can be an effective method for teaching and maximizing limited resources (Larson and Bruning, 1996).

**Computer Education**

The computer has been described as the most versatile and rapidly growing option in the field of distance education. Moore’s law stated that computer power will double every 18 months into the foreseeable future. In addition, communications bandwidth (the lines connecting computers to the world) have become less expensive and more abundant almost every day. The affordability and flexibility of the computer as a teaching tool has made it a forerunner in the educational technology/distance education forum. The computer also has another advantage in the distance education race; it can be accessed from one’s own home (Kinnaman, 1997).
Gottschalk (1996) classified computer education applications into four main categories:

1. Computer Assisted Instruction (CAI) uses the computer as a stand-alone teaching tool.
2. Computer Managed Instruction (CMI) takes advantage of the computer’s multitasking capabilities to track and record the students’ progress.
3. Computer Mediated Communication (CMC) uses the computer to access communication applications such as e-mail and bulletin boards.
4. Computer-Based Multimedia integrates hypertext and hypermedia to create a powerful and interactive learning experience.

Schneider, Glass, and Henke (1997) commented that the computer puts virtually any information or solution at your fingertips. This immediacy of response has changed the way that students learn and for the first time, has made lifetime learning a real possibility.

The Internet and World Wide Web

The Internet has quickly become the fastest growing delivery medium for distance education available today. Between November 1995 and March 1996, Internet access in the U.S and Canada increased over 50% (Maddux and Johnson, 1997). It has the capacity for both synchronous and asynchronous transmission and is able to access and download audio, video, graphics and text all at a comparatively low cost. In addition, the Internet has worldwide access with over 25 million computers connected in more than 90 countries. This instantaneous connection across all boundaries has created a true “virtual community” (Hirumi and Bermúdez, 1996). The guidelines for creating a “virtual community” require more than just an Internet connection. Open communication and commitment from the teacher and the student has been identified as essential to the creation and maintenance of Internet Courses.

In a cooperative study Calvani, Sorziot, and Variscot (1997) explored the perceptions and satisfaction of students from two universities on their experiences collaborating from a distance on an Internet web page. The students were from the University of Padua and the University of
Florence. Each site consisted of six students chosen for this study for their particular competencies. These students were enrolled in an advanced course in Educational Technology at their respective universities during the academic year 1995-6. The students were given 22 papers written by experts in the field and given the assignment to work collaboratively with the students from the other university to analyze and abstract these papers and create a web site on which to publish the abstracts. The students never met face to face and their only means of communication was using the e-mail client Eudora. Complete autonomy over the project was given to the students while the teachers served as tutors and several of the authors of the articles served as remote advisors. The researchers hypothesized that by working collaboratively, the students between the two universities would become members of a virtual community. This result was not observed. Surveys using likert-type ratings revealed that the remote relationships were significantly less satisfactory than those that were local. Many problems arose between the two groups due to differences in the interpretation of the class objectives. Further exacerbating the problem was the fact that the students’ only means of interaction with the remote group was e-mail. The asynchronous nature of e-mail made it difficult to discuss and resolve difficulties in a satisfactory manner. In all areas, satisfaction with their local peers scored considerably higher than those of the remote students, teachers (both local and remote), experts and technicians. Integration of software which allows more interpersonal communication between groups and a more direct intervention with the professors were discovered to be the essential (but missing) elements in relationship to student perception and satisfaction (Calvani et al., 1997).

The phrases “Internet” and “World Wide Web” are often used synonymously, however, this is incorrect. The Internet refers to the physical network of computers that are linked via smaller, regional networks to cover create a global network. The World Wide Web is the body
of information that can be accessed via the Internet (Webopedia, 1998). The information on “the Web” is maintained and managed by a variety of sources. Anyone with server access can publish documents to the web. While this open access allows for a great degree of editorial freedom, it also means that the information accessed may or may not be accurate. When retrieving and using information using the World Wide Web, it is necessary to make sure sources are credible (Ferrell, 1997).

**Videoconferencing**

Many of the complaints regarding distance education and computers are related to the isolation of distance students from both teachers and other students (Calvani et al., 1997; Hirumi et al., 1996). New developments in “streaming” technology has allowed “real time” communication between participants (Kinnaman, 1997). Videoconferencing technology can actually create a more interactive environment than the traditional classroom by bringing in experts and groups that would not otherwise be feasible (Gottschalk, 1996). Despite many advantages, videoconferencing has limitations. While the camera allows the participants to see each other, the quality is less than that of satellite or telecourse delivery. In addition, the display on the monitor does not pick up the subtle body language or unconscious signals that are used in face to face communication (NCET, 1996). Until recently, the equipment needed for videoconferencing was cost prohibitive for most colleges and universities. However, the hardware is now available at a cost that will allow this medium be a major market segment through the millenium (Webopedia, 1998).

Sankar, Ford, and Terase (1997) investigated the impact the use of videoconferencing had on students’ perceptions and attention span in a traditionally lecture oriented classroom setting.
For this study, a convenience sample of 152 undergraduate students (predominantly business majors in their junior year) enrolled in MN 314 – Introduction to MIS was used. The objective of this study was “to compare the perceptions of the subjects about the level of desirable features using the videoconferencing method vs. the no videoconferencing method and to investigate the impact of the students’ GPA and computer ownership on their perceptions”. The experiment spanned two class periods. The students were divided into two groups using a random number generator. One group was given the traditional lecture and the other group was given the lesson using videoconferencing technology. In the first lesson, the students were each given the same lecture, the traditional group was shown examples using an overhead projector. The students in the videoconferencing group were given the lecture from the professor’s office using whiteboard technology. During the second class, the professor demonstrated a systems model using overheads and discussed the use of spreadsheets in the traditional classroom. The same model was used for the videoconferencing group. In addition to the professor (still in his office) another colleague was included in the teleconference from another location. The whiteboard was used to discuss and explain the points by both teachers and spreadsheets were used for running “what if” type scenarios. After the two classes, a questionnaire was administered to each student that included questions regarding the students’ perceptions as well as pertinent demographic information. Teaching method and GPA had the greatest impact on perceptions of the students. The data suggest that the teleconferencing teaching method was preferred regardless of GPA or computer ownership. In addition, the students with lower GPAs perceived the classes as more attractive and challenging than the students with higher GPAs (Sankar et al., 1997).

**Hypertext and Hypermedia**
Hypertext and hypermedia have become the primary modes of access and storage in the computer environment today. Text and media are displayed in the normal manner but hyperlinks on the page allow the user to move through the information in a non-linear fashion. These hyperlinks can connect users to additional information, new documents, or even quick-time movies and audio files. Hypertext can be used to travel around the World Wide Web (Webopedia, 1998). However, it can also stand alone using mediums such as Interactive CD-ROMs. The educational opportunities and uses for hypermedia and hypertext are virtually limitless. In addition, the ability to tailor the lesson to the individual student makes this technology extremely valuable as a teaching tool (Maddux and Johnson, 1997).

In an exploratory study, Reed and Oughton (1997) investigated how characteristics such as gender, learning style, and previous computer experience influenced linear and non-linear hypertext navigation. A sample of eighteen students enrolled in a graduate level Introduction to Computers in Education course was used in this study. There is no reference to the population of inference or how the sample was chosen. The students were given a Hypercard Program that contained information about America in the 1960’s. Each subject had the option of accessing the information in two ways. First, the subject could follow the information in a predetermined, traditional lesson order. The second method of navigation gave the subject the option to jump from one subject to any other using links and navigation buttons. These methods of navigation were classified as linear and nonlinear respectively. The students were asked to use the program to learn facts about the 1960’s in several subject areas such as art and politics. While the program was in use, an internal program monitored the way that the individual students worked through the program and counted the number of linear and nonlinear steps that each student made. In addition to the monitoring program, the students were given the 18-item Group
Embedded Figures Test. This test classified learning styles into field dependent (low score) and field independent (high score) groups. Questions were asked regarding demographics such as gender and computer related experiences. The results of the study revealed that “only hypermedia experience continued to be predictor of nonlinear navigation across each of the intervals.” Other early factors such as gender and previous experience in other computer mediums was balanced out as the students attained experience with the program. The efficacy of the program was not evaluated and the authors suggested that future research evaluate how well the program worked in terms of student learning (Reed et al., 1997).

Crooks, Klein, Jones and Dwyer (1996) investigated the effect of cooperative learning in a computer-based medium. This study explored the effect of two different models of learner control and cooperative vs. individual learning on the attitudes, actions, and performance of students. The study used a Computer Based Instruction (CBI) program to teach good writing assessment techniques. The program had been developed in two separate formats; full minus and lean-plus. Both formats contained exactly the same lessons, information and number of mandatory and optional screens as well as practice questions (both mandatory and optional.) The difference was in the way that the screens were presented. The full-minus lead students through a full set of instructions and gave them the option to skip over the optional screens and practices. The lean-plus showed the students only the mandatory screens and gave them the option to pull up the extra information. A convenience sample of 128 undergraduate students (with a 4 to 1 female to male ratio) at a large southwestern university participated in the study. These students were blocked by sex and randomly assigned to either work alone or in a cooperative pair. The students were then randomly assigned to a computer running either the lean-plus or full-minus programs. Students using the full-minus mode and those working in
pairs had higher test scores in both tests. In addition, instructional method had a significant effect on student attitude. While both groups exhibited good attitudes, the individual learners scored higher in overall positive attitude than those in pairs. While the full-minus learners used significantly more of the optional items than did the lean-plus learners, the students using the lean-plus actually exercised more control over their learning as they played an active part in accessing their options (Crooks et al., 1996).

**Computer Mediated Testing**

Over the past 20 years, the computer has become more prevalent in the classroom as not only a tool for teaching but also as a tool for testing. A study by Zandvliet and Farragher (1997) investigated the “overall suitability of the computer as an assessment device.” The purpose of this exploratory study was to compare student achievement and perception of tests given in the traditional pen and paper format and tests conducted using Computer Administered Testing (CAT). A convenience sample of students enrolled in four classes were divided into two groups (A and B) and given two surveys. The first survey, a pretreatment questionnaire, examined demographics and attitudes toward computer testing and students’ previous experience. Over the length of the course, the groups were each given a series of six multiple-choice tests. Each group alternated between traditional pen and paper tests and CAT tests (three of each type) opposite of one another. A second survey questionnaire was given after the tests were administered to assess the change in attitudes of the students toward computer testing. The pretest survey showed that only 20% of the students had two or more years experience with computers; 66% of the students had no experience. Approximately half of the students believed that they would prefer computer testing and 46% believed that their scores would improve overall using this technology (12%
believed not.) Overall the perceptions were that computerized testing would be easier, faster, and more convenient than pen and paper tests. No significant differences were found between the scores regardless of the test medium and contrary to common belief, the computerized tests took significantly longer to complete. The post-treatment survey showed an overall increase in preference for computerized tests (Zandvliet and Farragher, 1997)

**Hospitality Technology and Training Software**

Then National Restaurant Association (NRA, 1998) reported that eight out of ten full service restaurants now use computers. Advances in technology are world and industry wide. Students graduating with degrees will be expected to understand and work with the latest technologies related to their field. These changes will have a considerable impact on the hospitality industry. Everything from the way reservations are made to the way employees are trained will be affected by the same technologies in use at the university level (Beckett, 1996; Kluge, 1996).

Costello, Gaddis, Tamplin and Morris (1997) conducted a study to “compare the effectiveness of two instructional methods for teaching food safety information.” This study contrasted the difference in comprehension and retention using a standard lecture format vs. computer based training. A computer based CD was developed, pilot tested, and refined for the purpose of HACCP training (method 1). The CD was then used as a template for a script to be given as a lecture (method 2). A sample of six individual quick service stores having at least six to eight employees was chosen at random from a list of local qualifying stores. Two stores were chosen as controls (no training), two stores’ employees were given the computer-based training and the final two stores’ employees were given the lecture. In addition, all employees were
tested for computer anxiety (before the training and after) and asked to respond to several demographic questions. The test was divided into three stages. The first, a pretest was given to the employees in all six stores. Second, a posttest was again given to employees of all six stores (including the two controls) immediately after the training. And finally, a second posttest given to the employees who had either the computer or lecture based training, several days after the training period. The data revealed that of the 43 individuals tested, the average age was under 20 and the subjects were predominately females. Approximately 56% of the employees indicated some previous food safety training. No significant differences were found in the pretest among the groups. The first posttest lecture based training yielded a 29% increase while the computer based training yielded a 19.5% increase. However, the second posttest, which tested the retention of information showed a drop of 4.8% in the lecture group while there was no drop in the computer trained group. No significant correlation was found for any of the demographics as factors (age, gender, number of years working in food service, and prior food safety training) and training knowledge and retention. The authors speculated that the reason for the initial higher numbers in the lecture training was due to the particular charisma of the lecturer and will be an inconsistent variable as a rule. In addition to the factor of consistency, the costs and mechanics of gathering everyone for training lectures can be prohibitive while computer based training can be scheduled and implemented consistently on an individual basis (Costello et al., 1997).

**Multimedia in the Classroom**

Educational technology is not limited to education at a distance. The same technologies that are revolutionizing distance education have also been used in the traditional classroom. Multimedia, CD-ROMs, the Internet, e-mail, computer simulations, on-line resources, and a
variety of software applications have offered teachers a veritable smorgasbord of teaching options. Some have found the variety too much. The ever increasing amount of technology has not always been accompanied by the necessary technical support and training causing many teachers to resist the use of technology altogether (Green and Gilbert, 1995). Acceptance and adoption of these new technologies by teachers is a necessary component in creating and maintaining a quality distance education program. Teaching has remained the most important aspect of any class, regardless of the delivery method. Therefore, it is essential that teachers be an integral part of any educational technology development program.

“The best uses of technology occur not when it is used to replace the teacher, but when its role is orchestrated by a master teacher who understands the delicate balance between stimulating and agitating, between probing and providing, and between observing and directing the flow of learning. It is the teacher, not the technology, that possesses a philosophy of education and that has the ability to cultivate in students a hunger for academic and intellectual independence.”

(Kinnaman, 1997)

**Impact on and Importance of Teachers in Distance Education**

Recent increases in the standards and expectations for schools that wish to continue their accreditation status have prompted many institutions to reassess the standards on which their faculty is judged. This reassessment has caused administrators to demand that faculty incorporate the latest in educational technology into their classes and curriculums (Seiminoff and Wepner, 1997). Distance education and other mediated technology will be affected by not only those creating the lessons but also by the traditional classroom teacher who may be using the technology to supplement and enhance their own lessons. The teachers who will eventually use and develop this technology are of great importance. The application of this new technology to
different areas of education requires people who are able to see the potential and are not intimidated by trying something new.

Wells and Anderson (1997) studied Early Adopters and explored how their attitudes evolved in regards to Internet implementation in stages before, during, and after instruction. Early Adopters tended to have a greater familiarity with computer systems, had higher levels of education, demonstrated good communication skills, and maintained current knowledge on the latest innovations. These early adopters were of great concern to the education system as they will most likely be the ones diffusing this new technology to their students and peers. Traditionally, these Early Adopters have been trendsetters and will probably have a good deal of influence on the direction and use of these technologies for the future. A convenience sample of twenty students enrolled in a graduate level Internet based telecommunications course at West Virginia University in the fall of 1994 was used. The majority of these students were public school teachers and deemed to have the characteristics of early adopters. The class was taught using a variety of teaching methods and styles. The data was collected using the Stages of Concern instrument developed by Hall, George and Rutherford (1977). In addition, the students were also asked to provide demographic information on gender, and prior computer knowledge. The data revealed that as instruction increased, internal concerns were lowered and external concerns rose in significance. It is suggested that the reason for this trend is that as the students learn more about the technology, they are able to understand it better but then must start looking for ways to apply it outside of this classroom (Wells and Anderson, 1997).

Not all teachers are categorized as early adapters; many faculty members have resisted the very concept of distance education. A number of reasons have been cited as the rationale for avoiding participation in distance education programs including: a lack of technical knowledge, a
concern for the integrity of the class, personal authority, and the fear of being replaced by the technology. The time and resources needed to create a quality distance education course need to be recognized and accounted for. The need for a supportive institutional framework has been identified as essential for a distance education program to succeed (Olcott and Wright, 1995).

This supposition was further supported and refined by Seminoff and Wepner (1997) who conducted a study to discover what was being done to develop technology based projects, what was motivating the changes, and how this information could be incorporated to create guidelines for tenure and promotion decisions. The sample for this descriptive study consisted of the 121 schools that responded to an earlier survey and indicated at least some experience publishing technology-based projects. Technology based projects included: computer software, CD-ROM, videotdisks, videocassettes, audiotapes, Internet, teleconferencing and other emerging technologies. The hypothesis for this study was that the use and development of these technology-based programs was perceived to be a factor in tenure and promotion consideration. The surveys revealed that 75% of the respondents believed that greater weight was given to teaching when considering tenure and promotion. This figure is greater than the previous study. The results also indicated that 30% of the respondents published a technology-based program at least every two to three years. A variety of mediums were represented including video and audiotapes and the development of assorted teaching and administrating software. Multimedia programs and the Internet were cited as being used both in and out of the classroom. The top four reasons for involvement in technology-based projects were: instructional impact (86%), professional recognition (53%), opportunities for research (49%), and motivation for end-user (35%). Over half of the respondents (58%, 62%) indicated that technology-based programs were recognized as scholarly activities for tenure and promotion, respectively. A majority (51%)
indicated that funds were available for travel to support technology-based programs. Another
36% responded that release time to develop technology-based programs was provided by their
institutions. When queried about suggestions for the future, the majority of respondents
indicated that release time, monetary support, professional development opportunities, and
recognition were the main areas of need for greater involvement in technology-based programs
(Seminoff and Wepner, 1997).

Summary

Distance education has continued to evolve as a teaching medium. Advances in
technology have created many different delivery methods for distance education and educational
advancement. Much of the available research has focused on the perceptions and the acceptance
of students involved in distance education courses. Satellite courses, have been the primary
focus of this research. However, little research has been done on the effectiveness of the various
methods of delivery. The available research suggests that personality characteristics, learning
styles, and the student’s outside constraints affect how a student interacts and accepts the
distance education experience (Esichakiul, et al, 1994; Biner, et al., 1995). In addition, further
studies suggest that the greatest drawback experienced by students involves the lack of
interaction between students and teachers in the distance education format. However, the use of
assorted mediated technologies has proven to be an effective means of education, demonstration,
and training.

Green and Gilbert (1995) stated that education has always been attracted to technology as
a teaching tool and enhancement. The “Microchip Revolution” of the previous decade has
created a virtual Frankenstein. Technologies are evolving so quickly that it is impossible, both
monetarily and pedagogically, to stay current. Furthermore, this increase in technology creates an expectation of increased productivity and the belief by many administrators that less faculty are needed to teach an increasing number of students. However, this is not the case. While technology has helped to reduce labor costs by reducing the amount of support and secretarial staff necessary, it must be remembered that these new technologies are merely tools to support teachers not replace them (Green and Gilbert, 1995)

Despite its drawbacks, distance education is the wave of the future. While distance education will never replace the traditional classroom or university, the expanding distance market and ever evolving technology will have a profound effect on the way that colleges and universities operate (Pelton, 1996). The teaching pedagogues of the past must be forgotten and new models developed for distance education and informational technology to adapt to the students of today (Jonassen et al., 1995; Marsden, 1996). The traditional approach of the lecture oriented teaching style is outdated. A shift in both teaching and learning paradigms is not only possible using the new technologies but is also necessary (Schneider et al., 1997). This influx of educational technologies offers a variety of options for teaching. The “one size fits all” concept of education is outmoded and the availability of computers and connectivity bespeaks of a “global schoolhouse” before the next millennium (Kinnaman, 1997). Technology is changing at an unbelievable rate. It is very easy to get caught up in the hype and gadgetry of these technologies and forget that the computer is merely a tool to implement change and that education is the true objective (Bates, 1997).
METHODOLOGY CHAPTER
Research Objective

This study will investigate the effectiveness, acceptability and student perceptions of the undergraduate course *The History of Cuisine* using two different delivery methods: traditional classroom and distance education via the World Wide Web.

Setting

The data for this study will be gathered over the span of one semester in which the undergraduate course *The History of Cuisine* will be offered as both a traditional class and in a distance education format using the World Wide Web. The web-based course will be developed from the existing traditional class being offered by the Department of Nutrition and Food Sciences at Utah State University. Both courses will provide the identical information to the students. The syllabus, lesson plans, and assignments will be equivalent for both the classroom and distance students. The web-based course will be administrated and taught by the same professor who will teach the on-campus section at Utah State University. In addition, the students taking the web-based course will be able to communicate and interact with the professor and other students using desktop videoconferencing, Internet Relay Chat (IRC), and e-mail technologies.

Population

The population for this study is hospitality students taking the course *The History of Cuisine* being offered by Utah State University during one semester. The study will utilize a
convenience sample of students enrolled in the course using either the traditional or distance
venue during a single semester.

The web-based delivery of *The History of Cuisine* will be developed as a collaborative
effort between Kansas State University (KSU), Utah State University (USU), and The Western
Governors Virtual University (WGU). As a result, most of the students enrolled in the web-
course will be attending or associated with one of these institutions. However, the course will be
available using the World Wide Web, so enrollment is not limited to these schools. The
traditional students will be attending the course at Utah State University in Logan, Utah.

Historically, the number of students taking an undergraduate course via distance is
considerably less than that of those attending a traditional classroom. In addition, *The History
of Cuisine* is a required course for those students enrolled in the Culinary Arts/Food Service
Management program at USU while it will be offered as an elective for students attending KSU.

At present, WGU serves as a conduit to distance courses offered by other universities and does
not offer its own degree. Due to these factors, it is projected that the number of subjects
available for this study will vary greatly between the two delivery methods. In order to
compensate for this inequity, the sample will consist of all of the web-based students and a
random sample of students enrolled in the traditional class. To ensure that the sample is truly
random, a random number generator will select the traditional students using the class enrollment
list as a sampling frame. The web-based students will be recruited when they sign up for the
course.
Ethics

An application will be submitted to the Committees on Research Involving Human Subjects at both Kansas State and Utah State Universities to ensure the protection of the students involved in the study (Appendix A). In addition, each student involved in the study will be given a letter explaining that they have been selected to participate in a study regarding the course The History of Cuisine. The letter will include: the rights of the subject, the appropriate contact persons, a statement that participation in this study is purely voluntary and that there will be no repercussions should they not wish to participate, and a description of how they will be involved (a blind copy of their scores/grades, and the questionnaires). There will also be a section ensuring confidentiality of the information explaining that all data will be identified by number only and that their name will not be linked with the information received. They will then be asked to sign a consent form for their participation and release of their grades – identified by number only. This study will not encroach on or interfere with the daily flow of the course.

Hypotheses, Variables and Research Design

This study will look at three specific hypotheses:

Ho4. There will be no significant difference in the test scores of students using the two delivery methods (Traditional Classroom and Distance Education) for the course The History of Cuisine.

Ho5. There will be no significant difference in acceptance of students using the two delivery methods (Traditional Classroom and Distance Education) for the course The History of Cuisine.

Ho6. The perceptions regarding distance education of students taking the distance education course The History of Cuisine will not change pre and post course.
The independent variable for this study is the method of delivery for the undergraduate hospitality course *The History of Cuisine*. The dependent variables will include test and assignment scores, student grades, student acceptance of the course, and student perceptions of web-based distance education overall. In order to obtain the appropriate information to test these hypotheses, two types of data will be collected: student grades and questionnaire/survey results.

**Measurements**

**Effectiveness of Course**

Course effectiveness will be measured using the test scores and the assignment grades of the students enrolled in the undergraduate course *The History of Cuisine*. The grading system for the course (both distance and traditional) will be calculated using a pre-determined point value for each assignment or test. This point system will be the same for both delivery methods. The syllabus will contain the point listings for each assignment or test and a breakdown of the points needed to attain a specific letter grade (i.e. 300-270 points is an A, 269-240 points is a B, etc…). Data will be collected using the points earned for each assignment, test, class project or quiz as well as an overall letter grade. The results will be compared between the distance and traditional students.

**Acceptability of Course**

In order to evaluate the acceptability of the course, a questionnaire will be distributed to each of the subjects. They will then be asked to evaluate the course in terms of acceptability, interaction, and satisfaction with the teacher and other students, logistics, physical learning environment, and overall enjoyment. These terms will be rated on a likert-type scale with a range of one to seven with one being low satisfaction and seven being high satisfaction. A combination of previously used instruments will be used to attain the best measure of the study.
objectives. A survey developed by Thomerson and Smith (1996) will serve as a basis for the development of the instrument (Appendix B). In addition, a section requesting demographic information will be included in the study. The results of these questionnaires will be compared across delivery methods.

**Student Perceptions of Distance Education**

A questionnaire will be administered to the students taking the web-based course only. Student perceptions of distance education will be measured in a pre-survey at the beginning of the semester and again in a post-survey at the conclusion of the course. The questionnaire will survey the perceptions regarding distance education and computer literacy of the students before and after the class in order to ascertain if their attitudes toward distance education and technology have changed over the course of the semester, as well as their experiences with the course *The History of Cuisine*. An example of questionnaires that may be used to develop the instrument are included in Appendix C.

**Pilot Test**

A pilot test will be conducted to test the reliability, examine and adjust the survey instruments, and ensure validity. The questionnaires along with an evaluation sheet will be distributed to two undergraduate hospitality classes. One class will be selected from Utah State University and the other from Kansas State University. The students will be asked to complete the questionnaires and fill out the evaluation including any suggestions that would make the instrument easier to complete and understand.
Data Analysis

The data collected in this study will be analyzed using a statistical analysis package as yet to be determined. The statistical processes to be used will include two-way t-tests, chi-square, and ANOVA procedures. The data regarding effectiveness will be student test scores and measured on a ratio scale. Percentages based on possible points and the means of the student scores will be the basis for analysis. The acceptability and perception data will be mainly ordinal, using a likert-type scale and will be analyzed using ANOVA blocking for demographic information and delivery method. The demographic variables will be compared using a chi-square analysis. Validity of the instrument will be tested using Cronbach’s alpha (SPSS, 1994).


Chiaramonte, Joan. (1997). It’s cool to show smarts at school. USA Today, October 29, D-1.


DEC (Distance Education Clearinghouse). (1997) . Some Definitions of Distance Education [on-line]. Available: http://www.uwex.edu/disted/definition.html


APPENDIX A

HUMAN SUBJECTS
APPENDIX B

STUDENT ACCEPTANCE SURVEY SAMPLE
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STUDENT PERCEPTION OF DISTANCE EDUCATION SAMPLE
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