**DETERMINE LEADING FACTORS WHICH CONTRIBUTE TO THE
SUCCESS OR FAILURE RATE OF STUDENTS ENROLLED
IN WEB-BASED COURSES OFFERED THROUGH
WAUKESHA COUNTY TECHNICAL COLLEGE**

By

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A Research Paper

**Submitted in Partial Fulfillment of the
Requirements for the
Master of Science Degree
With a Major in**

Training and Development

**Approved: (4) Semester Credits
198-750 Field Study in Training and Development**

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May, 2001**

ABSTRACT
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<u>**Title:**</u> **Determine leading factors that contribute to the success or failure rate of students enrolled in Web-based courses offered through Waukesha County Technical College.**

<u>**Graduate Major:**</u> **Master of Science in Training and Development**

<u>**Research Advisor:**</u> **Dr. Michael Galloy**

<u>**Month/Year:**</u> **May, 2001**

<u>**Number of Pages:**</u> **74**

<u>**Style Manual used in this Study:**</u> **APA**

The purpose of this study was to identify factors that contribute to the success and/or failure rate of students enrolled in Web-based courses offered through Waukesha County Technical College (WCTC).

WCTC is considering the development of an instructional course aimed at helping students to successfully complete Web-based courses. Currently, there is no data that identifies what factors contribute to student success or failure. Therefore, the identification of the factors is necessary for the development of this proposed instructional course or other actions deemed necessary from the results of this study.

The objectives of this study were to:

1) Determine factors that caused students to drop out of Web-based courses offered through WCTC.

2) Identify the factors that contributed to the success of students who have completed Web-based courses at WCTC.

3) Provide instructors with data that would aid them in the development of Web-based courses providing structure for student success.

4) Give WCTC the necessary information to develop an instructional course focusing on the needs of students and faculty for the success in Web-based courses.

It is the intention of WCTC to install the latest most technologically advanced software package for the instruction of Web-based courses. Previous attempts of the college to gather accurate data regarding the success and/or failure rate of students enrolled in Web-based courses have been limited and inconclusive in many areas.

For this study, a survey was sent to all students enrolled only in *TopClass* Web-based courses offered in the spring semester of 2000. The results of this survey were intended to identify what factor(s) were the leading causes to the success and/or failure rate of these enrolled students. The necessary information and approval of the survey was distributed and critiqued by Dr. Randall Coorough, Technical Director at WCTC.

Previous surveys and results utilized by the instructional technology department were provided as a tool in the construction of the actual survey instrument used in this study. Interviews with Dr. Coorough were conducted on several occasions in order to attain the most accurate and necessary

information. The facilitating factors identified to justify a more thorough investigation were as follows:

- A lack of access to student e-mail addresses enrolled in Web-based courses.

- A limited amount of participation from instructors in providing e-mail addresses to the technical staff.

- A lack of significant response from the e-mail questionnaires sent out.

- College contractual rules and regulations preventing the structural -technical department at Waukesha County Technical College to gather specific information regarding instructor performance.

Inconclusive responses led instructional technology administrators to consider the construction of a preliminary Web-based training and/or preparation course delivered prior to students beginning a course on-line. Because there was no accurate data pointing to such a course however, WCTC was searching for other more effective avenues to increase the success of students enrolled in distance learning courses.

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ACKNOWLEDGMENTS

I finished my undergraduate degree at the University of Wisconsin Stout in 1994, with a degree in Hospitality/Tourism...against my "father's better judgment", a phrase I've heard quite often. More commonly put...."The one who learns the hard way". I am the first to admit that my field of choice was both challenging and demanding. My regrets, however, are few if any. My experiences in the "corporate world" are invaluable. Upon returning to school to obtain my Master's Degree in Training and Development my head was no longer "in the clouds". I approached my advanced degree with a realistic approach, both academically and professionally.

There are many individuals to whom I owe a great deal of thanks and gratitude. Dr. Joseph Benkowski, Program Director for Training and Development, is one of the most respected professors among faculty and students alike. I had the pleasure of having Dr. Benkowski for three course requirements. My thanks to him are certainly not for straight A's, as straight A's is not what I received! Knowledge about the course work and the future in which we (as individuals) must prepare for is without doubt what students in this degree gain from him. Dr. Benkowski approaches his courses and students alike with honesty, integrity, and advice. He is one of the few faculty members who portray a sincere interest in what and where his students are about to embark upon. My wish is that someday I will be able to influence individuals in a similar manner in which has he has influenced others and myself.

Dr. Michael Galloy served as my research advisor as my course work was entering its final stages. I first met Dr. Galloy in a grueling two-week/weekend course entitled *Adult Education*. Though the premise of my thesis revolved around distance education, Dr. Galloy's title as Program Director for Adult Education was only the start as to why I asked him to advise me in the final stages of my master's program.

I had come to know Dr. Galloy on a more one-to-one basis after delivering (in my opinion) a devastating speech in his course incorporating a "slip of the tongue". His experience in both adult education and distance learning, coupled with the assurance of "it happens to the best of us" led me to believe that Dr. Galloy was the best decision to advise me through the final process of my degree.

Failing to acknowledge *all* of the graduate professors who work endlessly to help graduate students through instruction, advisement, and guidance would make my own acknowledgments incomplete. Each and every one of my graduate professors contributed in so many ways that allowed me to reach the goal I began with: the recipient of that 'golden' piece of paper proclaiming "Master of Science in...". My goal in obtaining my Master's Degree would not have been achieved without all of the above mentioned, thank you.

There is no way I could complete ANY sort of acknowledgment(s) without mentioning those whom I hold nearest and dearest to my heart, my family. Memories of my childhood are many, and honestly memories that many only dream of. My upbringing was a combination of fun, family, fair discipline, and most importantly, unconditional love.

My mother quit her job as a third grade teacher to raise my brother, sister, and I (each of us born within 3 1/2 years) taking care of other neighborhood children as well. It is at this point in my life, that I realize her incredible selflessness. I say this in complete honesty, as it is one trait I'm not sure I could ever do as successfully as my mom has done. As individually unique as my sister, brother, and I have become, it is the ongoing and passionate, personal differences that prove we are three good people. People who possess three different perspectives, all from the same great parents who taught us that respectful individuality is what we have to make a difference (Wow, I think I was actually paying attention!).

Growing up hearing the consistently: "you are your father's daughter" is one I've tried too long to live up to. In reality I've lived a much different life, but with the same goals. I've learned that my success and/or failure are a result of my own actions. There are no words in the world to convey my gratitude, admiration, thanks, and love to my parents. To those who know me best, as 'the one who learns the hard way', I did it! Did you ever doubt me dad?

I will be forever thankful.

Chapter I
Problem Statement and Objectives

<u>Introduction</u>

Web-based technologies have dramatically changed in how instruction is being delivered. Educators are expected to not only provide students with the technology that allows for effective Web-based instruction, but also to develop, design, and deliver instruction in a manner best suited to the student and instructor alike.

Few instructors have the skills and knowledge necessary to successfully deliver a Web-based instructional course. "Too often we all become enamored with the technological capabilities of our bright and shiny devices and ignore the fundamental learning theory." (Alden, 1998, p. ix.) It is for this reason that the integration of learning processes and Web-based learning environments is crucial to the success and/or failure rate of students to complete a Web-based course.

In an attempt to narrow this study, the researcher will target WCTC [Web-based courses] as its database. Starting in the fall of 1998, WCTC began using a software package called *TopClass*. In order to conform to WCTC contractual regulations, the Technical Design Department allowed instructors the freedom to design a Web-based course on the original format or through *TopClass* (the newly purchased software package for the design of Web courses). Despite the switch from a more unstructured basic HTML format used in Web-based training, a majority of WCTC Instructor's continued to utilize the original HTML format. The rate of increased success has, at best, remained the same.

With inadequate feedback from Web course students, determining the

factors that contributed to the success or failure of these students was difficult.

The WCTC Technical Design Department received only 23 responses from their

on-line questionnaire related to Web courses. Furthermore, the design of these

courses was in two separate formats, the low rate of responses to the surveys

limited the research even more.

To better target why a student is successful or not in a Web-based course,

only those enrolled   in a *TopClass* Web course in the spring of 2000

(approximately 300 students) will be asked to participate in this study. In addition,

it is the intention of the researcher to identify why a Web course was withdrawn

from, as previous surveys failed to survey students who withdrew within the first

two weeks into the semester.

<u>Purpose Statement</u>

The purpose of this study was to identify factors that contribute to the

success or failure rate of students enrolled in Web-based courses offered through

WCTC.

WCTC is considering the development of an instructional course aimed at helping

students to successfully complete Web-based courses. Currently, there is no data

that identifies what factors contribute to student success or failure. Therefore, the

identification of the factors is necessary for the development of this new

instructional course.

The objectives of this study were to:

5) Determine factors that cause students to drop out of Web-based courses offered through WCTC.

6) Identify what factors contribute to the success of students who have completed Web-based courses at WCTC.

3) Provide instructors with data that will aid them in the development and delivery of Web-based courses that provides structure for student success.

4) Provide WCTC with the accurate information on student success and failure, which will be used to develop a course (focusing on the needs of students and faculty for the success in Web-based instruction).

Significance of the Study

As Web-based instruction emerges as an effective alternative in delivery methods, colleges must provide students and faculty with the appropriate skills to be successful. They must be particularly attentive to the technical skills needed to navigate the sophisticated software, which are basic to Web-based instruction.

From the fall of 1998 to the spring of 1999, WCTC has been offering Web-based courses through a web package called *TopClass*. Despite this move from a basic HTML structure, the rate of success continues to average 60% in these courses.

The research findings of this study will identify factors that contribute to the success and failure rates of students enrolled in Web-based courses. This will enable WCTC course designers and support staff to develop and administer a

preparation and/or training courses for students prior to enrolling in any Web-based course. This course will provide students the necessary skills, preparation, and information to successfully complete a Web-based course. In addition, instructors creating and facilitating a Web-based course will have insight as to the most effective design strategies for the success of the participating students.

<div align="center">Limitations of the Study</div>

1.   WCTC offers Web-based training through the original basic HTML and a software package integrated in the fall of 1998 called *TopClass*. Instructors teaching these courses may use to their discretion, which format in which to instruct from. Due to the optional nature of Web-based instruction, the study population is narrow.

2.   In order for this study to remain as current as possible, only those students enrolled in the spring semester of 2000, *TopClass* formatted Web courses (approximately 300 total) will be asked to participate. This will narrow the research in that the response level will be much lower than if the population sample was larger.

3.   As WCTC begins to advance to a new, more updated software package in which to deliver Web-based instruction, the results of this study may be short-lived.

<div align="center">Assumptions of the Study</div>

The results of this study will be used by WCTC for the purpose of increasing the success rate of students enrolled in Web-based courses. With an expected implementation of a new software package in the fall of 2001, WCTC

will use these results to aid the instructors in the successful design and delivery of courses offered.

The primary intent of the research is to identify the needs of the students. As Web-based instruction increases in use and effectiveness as a delivery method for education, it remains unknown as to its dominance in the learning environment. The fact remains, however, that Web-based instruction continues to emerge as an effective and obtainable delivery method for students and instructors alike.

Definition of Terms

Administration

The group of individuals at Waukesha County Technical College

responsible for

success rate of Web-based instruction.

Distance Learning

A system that connects learners to educational resources regardless of time

and place.

HTML

An abbreviation for *Hypertext Markup Language.* The language used to

define the appearance of text and images on the computer screen. The

standardization of the language allows all computer systems to connect to

the Internet to display roughly the same screens, regardless of their

operating systems.

Instructional Design

A systematic process for assessing instructional needs and goals, defining

instructional objectives, selecting instructional methods and media,

developing materials to accomplish the objectives, and implementing and

assessing the learning of students.

Student

Those individuals enrolled in a Web-based course through *TopClass* at

Waukesha County Technical College in the spring semester of 2000.

TopClass

> The software package used by Waukesha County Technical College allowing instructors to deliver Web-based instruction through a pre-constructed format.

Waukesha County Technical College

> The database for this study.

Web-based Instruction

> A learning event that uses computers as the distribution method for instruction.

Chapter II
Review of Literature

<u>Introduction</u>

The Review of Literature will examine the history of distance education and it's evolution into both present and future society. A narrative of the current offerings in distance education through WCTC and where it is looking to emerge to will be explained in addition to how this study will reflect courses of action intended to better provide students with the exceptional educational experience they are committed to.

<u>History of Distance Education</u>

Distance education is defined as "…a method of education in which the learner is physically separate from the teacher…it may be used on its own, or in conjunction with other forms of education, including face to face." (Schlosser, 1994 p. 1). In other words, generally the learners are physically separated from the institutions that sponsor the instruction.

Distance education dates back 150 years ago when in 1833 a Swedish newspaper advertised the opportunity to study through the "…medium of the Post…" This avenue included study through print, publication, and newspapers. In 1840, England took distance education to higher levels by offering instructional opportunities through correspondence. In 1873, correspondence study was founded in Boston by Anna Eliot Ticknor to encourage individuals most specifically with occupational, family, and social commitments to study at home. Within twenty-four years, this attracted more than 10,000 students. Most of these

students were women and corresponded monthly with teachers who offered readings and tests.

By this time several forms of instruction were being offered through correspondence including certain academic degrees from the state of New York through the Chautauqua College of Liberal Arts and mining courses which exploded in 1891 lasting into the 1920's with more than 2,000,000 enrollments. Correspondence studies continue to expand in England and the United States ranging in craftsmanship degrees to doctoral degrees.

Eventually distance education expanded to audio recordings and radio as advances in electronic communications technology took form. As the 1930's approached, distance education through television began at the University of Iowa, Purdue University, and Kansas State College (Holmberg, 1977, p. 120). In the 1960's satellite dishes eventually paved the way for a more cost-effective method of instruction, allowing learners to come together in one of many locations as instruction was performed at a distance.

Though forms of distance education have been in existence since the 1830's and continue to thrive, leading scholars in the field expressed concern regarding a lack of attention students were receiving. Experts felt distance education lacked a form definition or according to Holmberg, a "theory". Four elements of distance education emerged: a teacher, a learner(s), a communication system, and a topic in which to be learned. The key to success then is simply the *relationship* between the teacher and student. It is with theory that the mode of

communication used became a primary tool in not only what was taught but how it was taught as well.

" The best current evidence is that media are mere vehicles that deliver instruction but do not influence the student achievements anymore than the truck that delivers our groceries causes changes in nutrition" (Schlosser, 1994 p. 23).

<div align="center">Current Characteristics of Distance Education</div>

Currently distance education is offered through many and varied mediums. Among them are compressed video, microwaves, community TV programs, teleconferencing, audio conferencing, Intranet, and Web-based instruction through the Internet is the most common form of distance delivery.

The amount and sophistication of the equipment needed for a distance education enterprise depends on the chosen method of delivery, or type of system already in place. According to Dr. Randall Coorough, Technical Director for Waukesha County Technical College: "…what is not being done on the Internet presently [in education] rests only with the fact that we haven't yet learned how to do it…"

> *The rapid development of the Internet has provided a powerful medium for the delivery of computer aided learning materials…Advantages include the availability of information at all times from remote locations, reduced work load for instructors, and the diversity of media that can convey a message. These range from the infrastructure needed to cope with the increased use of the Internet…*(Mudge, 1998 p. 11).

John Kinglin, Director of Telecommunications at Iowa State University takes the previously quoted definition of distance education and adds, "…Inter-related information is provided via some electronic means…" (Video tape V, Iowa District Educational Alliance). As technology continues to advance, both instructors and students must be prepared in order to be successful in distance educational courses. Instructors have the responsibility of actively engaging in student learning despite the distance. Support (and support staff) is the key to successful distance learning. Are local facilitators provided? Is the instructor accessible by phone or e-mail? Is there an initial meeting of the instructors and students prior to beginning the course? The support staff in distance education is more often than not the individuals responsible for these points. The support staff are individuals responsible for aiding the instructor in effective communication with the students and the instructor.

Often the support staff will act as liaisons, being the only visible person to the students. They relay information, questions, and concerns back to the instructor. As widespread and common as distance education has become lack of human contact is one of small concern. Concerns regarding successful instruction, learner experience, and on-line cheating, though not completely undetectable are forcing organizations to focus more seriously upon.

The use of tutors or face-to-face facilitators allows for testing in a classroom setting. This, however, is not always possible. George Edwards, the Development Director with the Institute for Supervision and Management (http://www.ismstowe.demon.co.co.uk) insists that despite measures taken,

software packages are developing programs that tracks the start score, module quizzes, and the end score and gives a time scale for training. Such a program, called *Test Proctor*, has the ability to graph student scores that can show "spikes" in graphical scores if modules were completed in an unrealistic timeframe.

Other preventative on-line cheating measures include *Biometrics Authentication* that uses the ability to fingerprint students in order to identify the learners. *Performance Testing* allows the instructor student knowledge, making cheating almost impossible. Though not foolproof, they are a giant step forward in the progress of distance education, especially in Web-based course offerings.

<u>An Overview of WCTC's Distance Education Offerings</u>

WCTC offers teleconferencing and Web-based courses through either a basic HTML format or *Topclass* (a newly purchased software package in the fall of 1998). Teleconferencing, as a means of distance instruction was introduced to students' eleven years ago. Web-based courses began almost six years ago in 1995 though a basic HTML format. Without a structured format for instructors, courses and their delivery styles are all very unique in nature. Although this gives the instructors the freedom to construct an on-line course to his or her discretion, students who enroll (often completely in Web-based courses) express confusion when taking Web courses designed in two different formats.

In the fall semester of 1998, WCTC introduced *TopClass*. *TopClass* is a structured software program that gives instructors a limited amount of freedom in the designing of their courses. It was the intention of WCTC to provide students with a universal package allowing them the freedom to take all classes via the

Web without having to determine which instructor has the format easiest for an individual to succeed in.

Unfortunately *TopClass* was not received as enthusiastically as the Technical Design Department anticipated. Although some instructors were anxious to format their course(s) through *TopClass*, still others did not. To compromise, WCTC Administration, the Board of Education, and the Union Officers representing WCTC Instructors decided to allow instructors to chose between their original Web course outlines and the newly introduced *TopClass* software package. The dual nature in which Web-based courses were being introduced at WCTC, obtaining feedback related the success and/or failure rate of Web courses was inconclusive.

In 1998, prior to *TopClass* being introduced, the drop out rate of students enrolled in Web-based courses was 60%. Currently, that statistic remains very similar despite the purchase and institution of a formatted software package (*TopClass*). Surveys to determine the factors contributing to this consistent high drop out rate were sent out in the fall semester of 1999. With close to 250 Web-based enrolled students, the WCTC Technical Design Department received only twenty-three responses, a return rate of only 9%.

WCTC's Technical Design Department has contemplated over the necessity of offering Web enrolled students the option of taking a preliminary training and/or preparation course in which to better help prepare them for the class in which they have enrolled. Making the course a requirement with the option of testing out was the intention of the Technical Design Department.

The Design of a Web-based Course

As the design phase begins to emerge, one must carefully consider several aspects to develop a successful instructional Web course. In preplanning it is crucial for the designer to first consider the time in which the Web-based course will be delivered. For example in an instructional college oriented atmosphere, will this course be designed as a condensed short-term experience, delivered as a quarter or half semester course, or for an entire semester? Depending on the learning environment and topic of instruction, time is an extremely important factor.

As an independent learning environment, the designer must then consider demographically based information of the audience. Characteristics such as: distance, age, gender, technical skill level, and the reason for enrolling in the course are a few aspects that will aid the designer in constructing a course designed to meet the needs of his or her students.

One of the most important factors, according to Dr. Randy Coorough of the Technical Design Department at WCTC, is the technical support provided from the institution in which the Web course will be delivered. In order for any Web-based course to achieve success in design and delivery there must be support and back up. Generally when an institution offers the opportunity for distance education via the Web, there is a support staff solely for the aid of both the students and instructors.

A support staff can provide a variety of functions depending on the nature of the course. For the instructor to make up the lack of human contact, a support

staff is often responsible for acting as a liaison in an atmosphere where two or more students can meet at an agreed upon location while taking the on-line course. As the "course aide", that person has the ability to interact with the learners and help with any problems on the spot. In addition, this aspect of support provides a connection to the instructor and the students other than just electronically. The support staff provides a variety of functions to the instructor and student to make the delivery a success for all.

According to a Florida Community College Panel on the Development of Web-based Courses, it is important for any Web course designer to allow for at least two years in order to make revisions based upon the design of the course. "Selecting a template [software program] that is college wide accepted is one way to provide a universal design." (Rowntree, 1986 p. 23). WCTC, for example, implemented *TopClass* in the fall of 1998 to achieve the universal learning in Web-based course offerings. Learners' characteristics differ tremendously; even those enrolled in the same course. As distance education becomes the only avenue for many students, providing a course delivered in a similar manner allows the student to concentrate more so on course content and less on the construction of the course.

In addition, "...using the latest technology is not always the answer...of the many aspects to consider, course content, the audience, and subject matter are a priority. As such, the 'latest technology' is not always the answer." (Holmberg, 1990 p. 103). As the instructor moves into the delivery phase of Web courses, he or she must take into consideration how the interaction will take place. For

example, some programs require a mandatory, face-to-face orientation class prior to starting the course. Other courses have had each enrolled student develop a home page for all of the participants to be able to view during the course. Though this type of interaction is still "electronic", the home page offers personal information about each student, and allows other participants the opportunity to know who is making what comment. However achieved, one characteristic important in the success of Web-based delivery is the interaction that occurs.

<div align="center">The Delivery of Web-based Courses</div>

As the design phase comes to a close, delivery of the course is the next consideration in successful Web-based courses. In a discussion panel at the University of Iowa consisting of the Iowa Distance Education Alliance Group, the chairwoman of curriculum and instruction, Dr. Anne Thompson, discussed the role of the instructor. "The demands in a distance educational setting are more demanding and more intense." (The Teacher, 1999 part I). According to Thompson among the "traditional" course necessities such as a course syllabi, Web-based courses need to be accompanied with a basic terminology list, a pre-test giving the instructor the knowledge as to the level of technology his students are at, as well as a carefully thought out visualization process provided to students throughout the course.

Outside class time, it is essential the instructor provide a means of communication to the students. Options such as set office hours for teleconferences, mail, both postal and electronic, and local facilitators (often the support staff or an assigned student) for face-to-face communication, paper

distribution and question answering are some ways in which Web instructors provide for better communication while class is out. A commonly used medium is providing communication in before and after classroom discussions, allowing student the opportunity for more effective communication when class is not in session.

As delivery begins, the student must also take several aspects into consideration. On a positive note, Web-based courses can provide a wider variety of course selection in a much broader atmosphere, however, it is also for many a new learning environment accompanied by new work habits. Planning is the key. Because most Web-based courses are at a self-paced level, it is the student capable of planning and pacing himself in a way that allows for successful completion.

A student of distance education needs to be heard. Asking questions and utilizing handouts and terminology list is essential, as distance learning is much closer to learning on your own than the traditional classroom is. The instructor in turn must encourage study groups and be as accessible as possible to students. Kathy Yiandra, the Director for Distance Education Research at WCTC believes "most [students] enrolling in Web-based courses think it will be easier...the truth, however, is that Web-based courses almost doubles in the workload. Students are not prepared for the added expectations of a [Web-based course] and often drop [the course] within the first two weeks of enrollment".

Chapter III
Research Method

<u>Introduction</u>

The purpose of this study was to identify factors that contribute to the success or failure rate of students enrolled in Web-based courses through WCTC. WCTC is considering the development of a preliminary instructional course aimed at assisting these students to successfully complete a Web-based course. With no current data to identify these specific factors, WCTC will use the information obtained to develop a course, if necessary, to assist these students based upon survey results.

Specifically, the objectives of this study were:

1) Determine factors that cause students to drop out of Web-based courses offered through WCTC.

2) Identify what factors contribute to the success of students who have completed Web-based courses at WCTC.

3) Provide instructors with data that will aid them in the development and delivery of Web-based courses that provides structure for student success.

4) Provide WCTC with the accurate information on student success and failure, which will be used to develop a course (focusing on the needs of students and faculty for the success in Web-based instruction).

Research design, population and sample, instrumentation, and research schedule are the subjects covered in this research methods chapter.

Research Design

The research was conducted through mail survey, both exploratory and formal. The research goal was to determine the factors that contribute to the success and/or failure rates of students enrolled in WCTC's Web-based courses. As an exploratory study, the research was attempting to identify what these factors are through mail out surveys. As a formal study is the intention of WCTC's Technical Design Department to construct a preliminary preparation/training course based upon the researcher's conclusive results.

The Research Design was experimental in nature. The purpose of this study was to learn why or how particular variables affect another; this research was therefore casual. In addition, the time dimension is cross-sectional. Due to the technological advancements of Web-based courses at WCTC, data collected must be acted upon immediately to allow the design department the ability to increase the success factors of students enrolled in Web-based courses.

This research was statistically based in the topical scope. The goal of the research was to obtain characteristics of the population sampled and therefore make inferences based upon the survey results. The research environment of this study was a field study in which the participants were analyzed under normal conditions, with no simulation-type processes such as role-playing. In addition, the survey conducted was completely anonymous.

Population

The population of this research was based upon only those students who enrolled in a Web-based course formatted in *TopClass.* This consisted of three semesters as *TopClass* was introduced in the fall of 1999.

The population size was exactly 299, only those enrolled in the spring of 2000. Students were selected in early fall of 1999 to proceed with surveying for the most recent feedback possible.

Instrumentation

The purpose of this study identified success and/or failure rates of students who enrolled in *TopClass* in the spring of 2000. The sample size was provided by the Technical Design Department at WCTC. The factors were identified through survey results mailed to the sample group.

The intention of the research was to divide the survey participants into Group A, those who withdrew from a Web course and Group B, those who completed a Web course. Each participant was mailed identical surveys, however asked to respond based upon completion of the course.

The survey incorporated demographic questions allowing the researcher to better identify the characteristics of the participants and groups. The survey included questions asking the participants to rate aspects of the Web courses using a Likert scale.

Data Analysis

All surveys related to individuals enrolled in *TopClass* Web-based courses at WCTC were conducted based upon the spring of 2000. The surveys were sent

out to the participants in mid-April of the year 2000. Tracking of all survey results

has been recorded into a preliminary tracking spreadsheet. The results of the

surveys were completed in August of the year 2000.

This data received was used to enhance the Web-based learning

experience through WCTC. The research results were analyzed and recorded

through a specifically designed Excel Spreadsheet and the graphed based on the

calculated statistics.

Chapter IV
Results

<u>Introduction</u>

WCTC's Technical Design Department has attempted to determine the factors relating to the success and failure rate of students enrolled in Web-based courses. A low response rate from previous surveys has given them little information in which to better instruct through the Web. The research of this study therefore was intended to reach a much larger group of people through a mail-out survey (as opposed to the e-mailed surveys performed in the past). With the information obtained from this study, WCTC intends to develop and administer a Web-based training and/or preparation course designed to meet the needs of the students enrolled in Web courses.

The survey instrument was a three-page questionnaire combining both demographic information as well as questions designed on a Likert scale in reference to course information.

A total of 299 surveys were mailed out in April of 2000. Each of the participants was enrolled in a Web-based course, in a *TopClass* format, through WCTC in the spring semester of 2000. Due to the nature of this study, a cut off date of July 1st, 2000 was set for receiving the completed surveys, thus allowing the researcher to begin calculating the results. Any additional surveys received after July 1st of 2000 were not used in this study.

Of the 299 surveys mailed out, 82 were returned or 28%, which provided an adequate sample study group. Out of the 82 return responses, 16 participants, 5% of the returned responses, replied to the first question on the survey indicating

a withdrawal from a Web-based *TopClass* course in the spring of 2000 at WCTC. The results of the surveys will be presented by dividing the participants into two groups.

Sample Group A are those who withdrew from a Web-based course. Sample Group B represents those who completed a Web-based course. The statistics received have been divided in terms of the demographic information and the Likert portion of the survey.

In the demographic portion of the questionnaire, each participant was asked to provide information on the following:

1) Age

2) Gender

3) Pay Type

4) Job Type

5) Education Level

6) Distance Traveled (if any)

7) Reason for Web Enrollment

The charts in Tables 1A-7A are the conclusive results of the demographic information provided by those who withdrew from a Web-based course. In keeping the information of those who withdrew separate from those who did not, the ultimate goal was to determine contributing factor(s) that may have led to the student's who withdrew.

Table 1A

Gender Percentages for Sample Group A

MALE 42%

FEMALE 58%
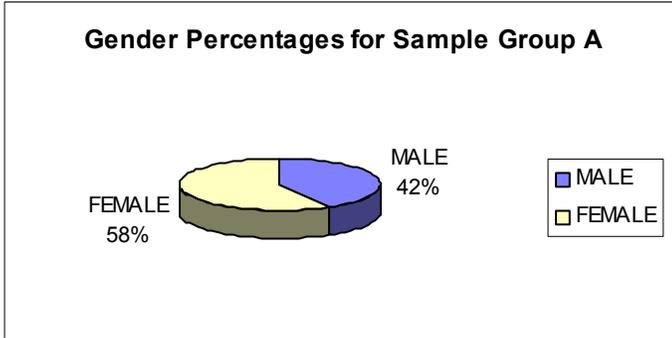
MALE
FEMALE

Among the participants who withdrew from a Web-based course within the spring semester of 2000, 42% were male and close to 58% female. The gender response rate was fairly equal, with the female population respondents 16% higher than that of their counterparts.

Table 2A

Age Percentages for Sample Group A
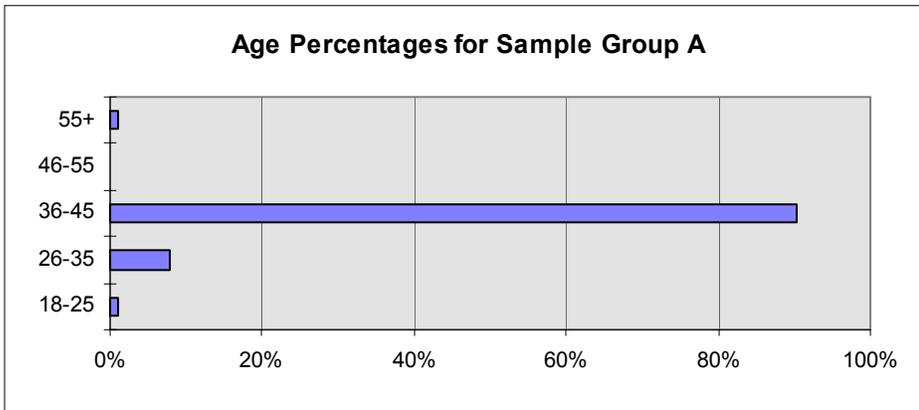
The age range of the respondents who indicated withdrawal, 18-25 was 1% of the 16 total surveys, 26-25 at 8%. Those ranging in age from 36-45 responses dominated this portion with a 90% feedback while those 46-55 with a 0% response rate. In the age group of 55+, close to 1% indicated dropping from a Web-based course.

Table 3A

Job Category Percentages for Sample Group A

	Legend
	Management
	Administration
	Clerical
	Custodial
	Factory
	Manufacturing
	Education
	Other

Administration 0%
Management 0%
Custodial 0%
Education 0%
Other 68%
Clerical 12%
Factory 18%
Manufacturing 2%
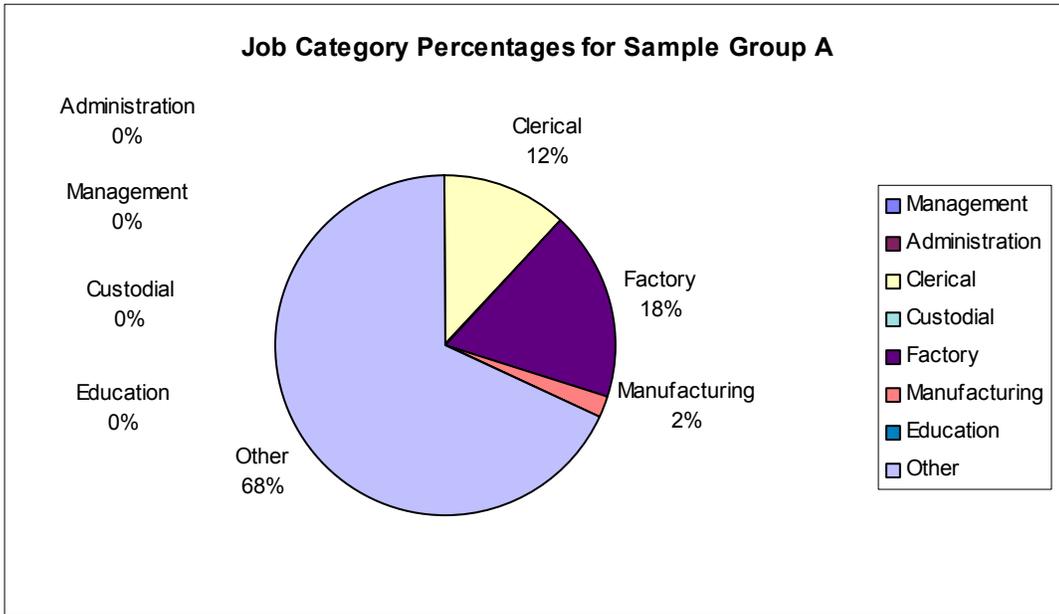
In the job category, 0% of the participants claimed in management, 0% in administration, 12% in clerical, 0% in custodial, 18% in factory positions, 2% manufacturing, 0% in education. An overwhelming majority at 68% chose other. Though the majority did not indicate what job category they placed themselves, some of the respondents who did, indicated sales, health care, homemaker, and special trade positions.

Table 4A

Pay Type Percentages for Sample Group A

	Salary	Hourly	Other
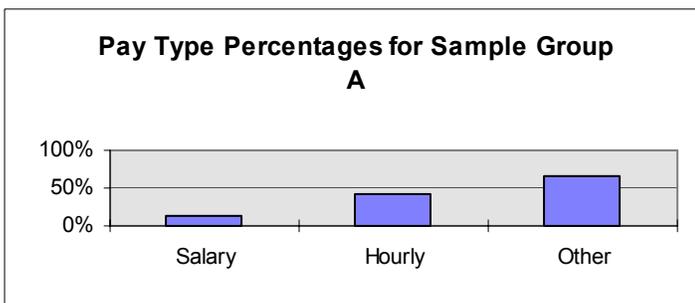
In terms of how respondents indicated wage supplement, 42% of the respondents indicated being paid hourly, 12% on a salary, and 66% of the 16 respondents in this sample group indicated other.

Table 5A

Education Level Percentages for Sample Group A
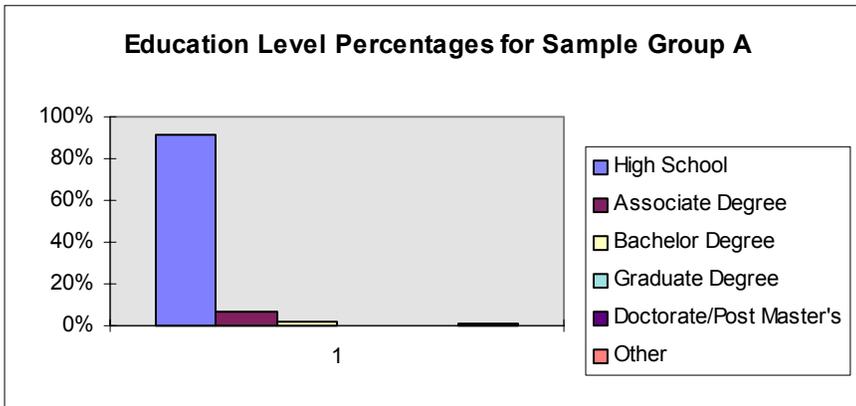
The educational level of the participants who withdrew from a Web-based course indicated with a percentage of 91% having a high school degree. None of the respondents held either a graduate or postgraduate degree. A small percentage of 7% indicated having an Associate's Degree, 2% a Bachelor's Degree, and the remaining 1% indicated "other".

Table 6A

Distance Percentages from Sample Group A
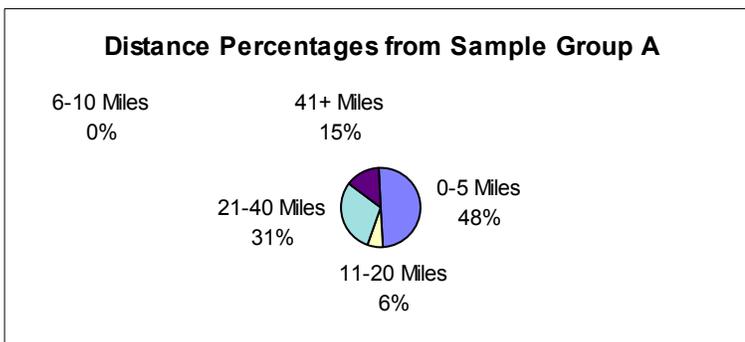
The distance traveled to take a WCTC Web-based course indicated that 48% traveled 0-5 miles, 0% 6-10, 6% 11-20, 31% 21-40, and 14% 41+ miles.

Table 7A

Enrollment Reasons for Sample Group A

Legend:
- WCTC Program Requirement
- Personal Improvement
- Professional Certification
- Job Promotion
- Credit Transfer
- Other
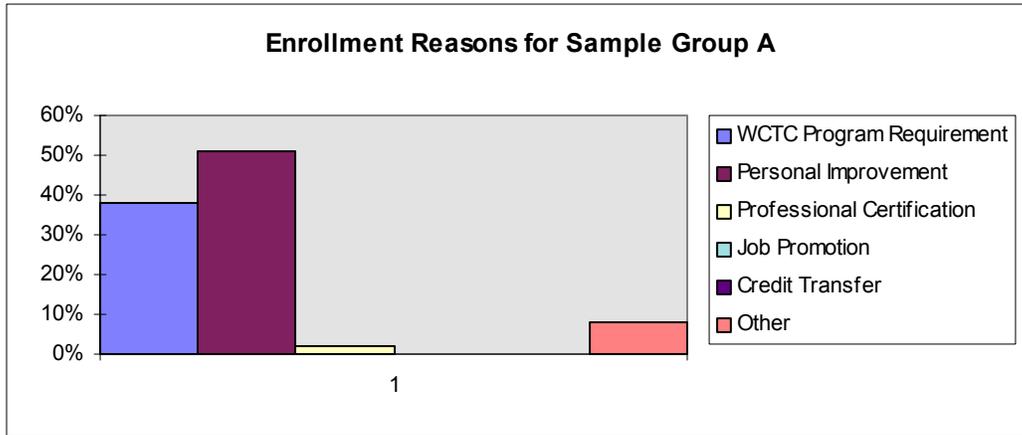
The final category was the reason the participants enrolled in a WCTC

Web-based course. 38% indicated a WCTC program requirement, 51% for

personal improvement, 2% for professional certification, 0% for job promotion,

0% planned on transferring credits earned at WCTC to a college or university, and

8% indicated other.

Table 8 presents the rating key of the Likert portion of the survey

questionnaire. In this part of the survey, participants were asked to provide

specific feedback concerning why a course was withdrawn from, course

preparation and delivery evaluations, and finally, factors that may (or may not)

contribute to student success in the completion of a WCTC Web-based course.

Table 8   **Likert Scale Rating Key**

LIKERT SCALE RATING	LIKERT SCALE RATING KEY
1	STRONGLY DISAGREE
2	DISAGREE
3	NO OPINION/NOT SURE
4	AGREE
5	STRONGLY AGREE

Table 9 represents an average percentage of chart of why students withdrew from a Web-based course.

Table 9

QUESTION	1/SD	2/D	3/NA	4/A	5/SA
Lack of Technical Skills	60%	15%	17%	8%	0%
Time Constraints	18%	37%	5%	17%	23%
Lack of Adequate Technology	37%	23%	12%	15%	13%
Academically too Challenging	32%	32%	13%	8%	15%
Personal	1%	5%	0%	24%	70%
Lack of WCTC Technical Support	19%	25%	19%	6%	31%
Lack of Instructor Communication	23%	22%	25%	8%	22%
Lack of Information Given	24%	13%	25%	13%	25%

Table 9.1

Likert Results of Survey for Withdrawing

Legend:
- Lack of Technical Skills
- Time Constraints
- Lack of Adequate Technology
- Academically too Challenging
- Personal
- Lack of WCTC Technical Support
- Lack of Instructor Communication
- Lack of Information Given

Statistically, question #1 was dispersed fairly evenly, with participants both strongly disagreeing and agreeing as to why a particular Web-based course offered at WCTC in the spring of 2000 was withdrawn from. 60% of the 16 participants strongly disagreed that a lack of personal technical skills was the main factor in withdrawing from a Web-based course. 70% however, strongly agreed that personal reasons were the primary factor in withdrawal from the Web-based course in question.

The proceeding statistical information represents those of Sample Group B. The individuals in this Sample Group represent those who completed a Web-based course through WCTC and received a grade.

Table 1B

Gender Percentages for Sample Group B

MALE
36%

FEMALE
64%
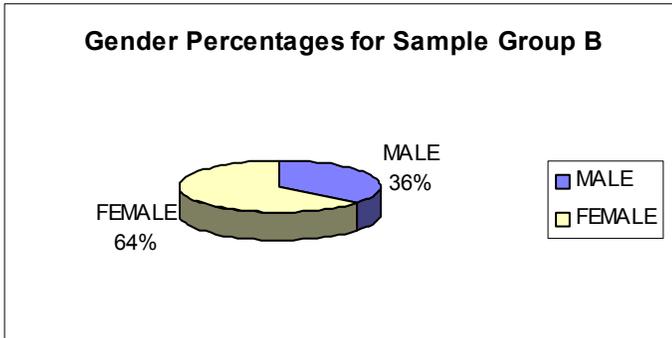
MALE
FEMALE

In Sample Group B the gender response rate was similar to those in Sample Group A. The chart above indicates that 36% were male and 64% female for those who completed and received a grade. Again, this portion of the questionnaire was fairly evenly distributed with the female population slightly higher.

Table 2B

Age Percentages for Sample Group B

Age	0%	5%	10%	15%	20%	25%	30%	35%	40%	45%
55+										
46-55										
36-45										
26-35										
18-25										
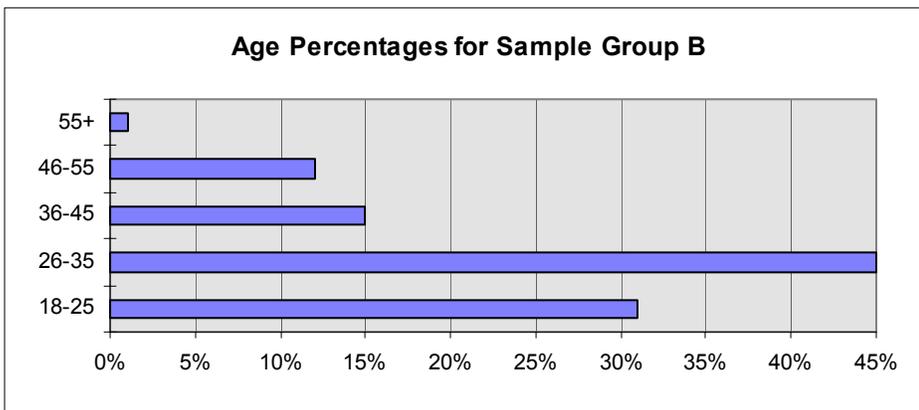
For those in Sample Group B, the largest percentage, over 45%, aged 26-35 remained in the course. Those aged 18-24 indicated completing the course at a 32% rate. Those aged 45-55 completed the Web course at a 12% rate, and those over 55 at just above 2%.

Table 3B

Job Category Percentages for Sample Group B
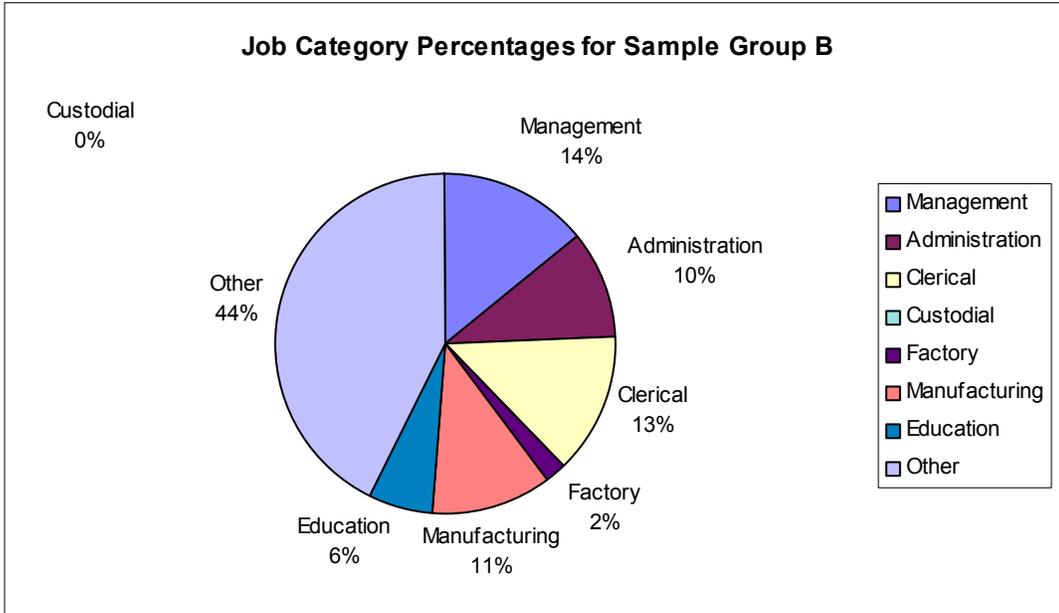
The Job category in Sample Group B differed quite a bit from Sample Group A. Although "other" dominated this category, the percentages of those who completed consisted of 14% in management, 10% administration, 6%education, 11% manufacturing. Clerical was almost the same at 13% and custodial 0%. Those in factory job categories held only 2%, compared to 18% from Sample Group A.

Table 4B
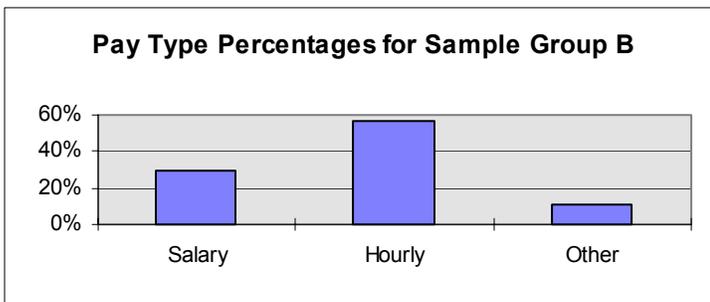
For pay type in Sample Group B, 60% indicated hourly, 30% salary, and roughly 10% "other".

Table 5B
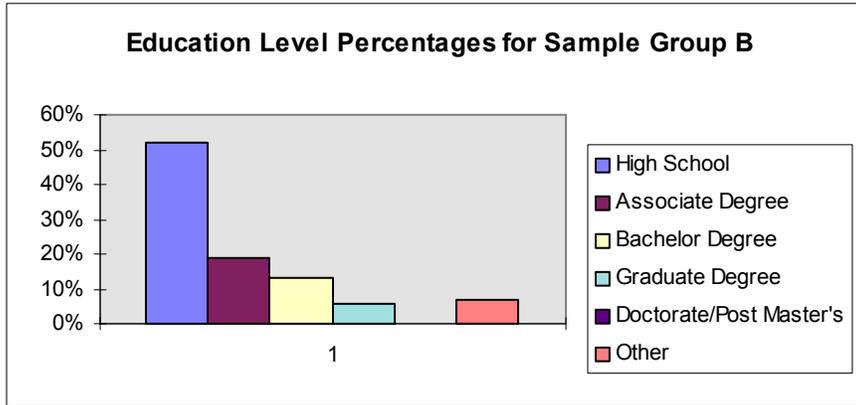
The educational level in Sample Group B indicated a majority at slightly over 50% with a High School Education or GED. Close to 20% indicated an Associate's Degree, 15% a 4 year degree, almost 5% holding a Master's Degree, 0% a Post Graduate Degree, and close to 10% chose "other".

Table 6B
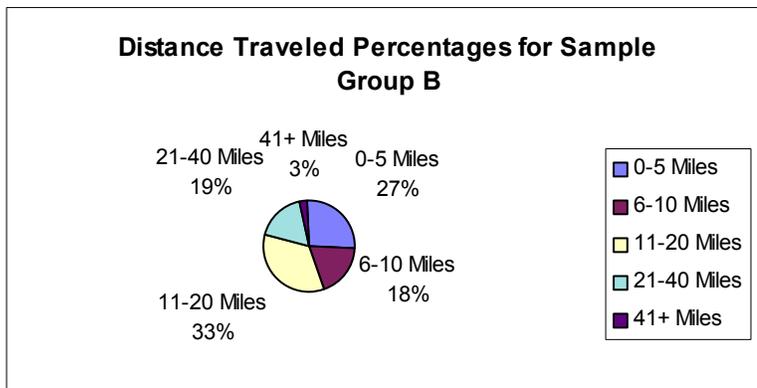
Sample Group B had the highest percentage at 33% traveling 11 to 20 miles. 27% indicated 0 to 5miles, 19% at a distance of 21 to 40, 18% traveled 6 to 10 miles and 3% of Sample Group B were at a distance of 41+miles from WCTC's Campus.

Table 7B

Enrollment Reasons for Sample Group B

Legend:
- WCTC Program Requirement
- Personal Improvement
- Professional Certification
- Job Promotion
- Credit Transfer
- Other
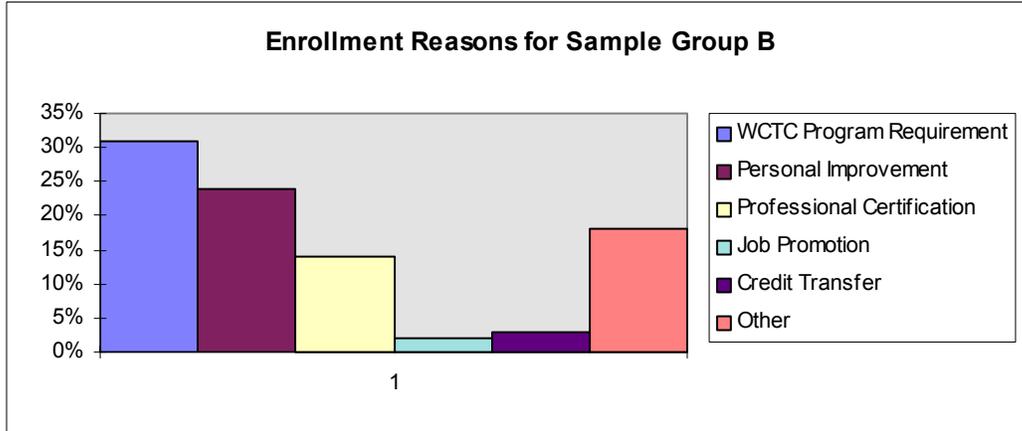
In Sample Group B for enrollment reasons, just over 30% enrolled for a WCTC Program Requirement, close to 25% indicated personal improvement, 15% for a professional certification, and almost 3% for a job promotion. 4% indicated enrolling for credit transferring, and 17% chose "other".

Table 10 is a chart listing the statistics for Sample Group B representing questions related to the Web-based course taken and completed at WCTC. This question was based on a Likert Scale, therefore following the same key as Table 8, previously shown in this chapter. They were asked to rate specific questions from 1 to 5 with 1 being strongly disagree and 5 at strongly agree.

Sample Group B Web Class Experience Ratings

Table 10

QUESTION	1/SD	2/D	3/NA	4/A	5/SA
Course Content Appropriate	0%	1%	1%	71%	27%
Course Requirements clearly expressed	0%	1%	1%	69%	29%
Course Delivery at a convenient time	0%	.4%	.6%	69%	30%
Course Delivery at a convenient place	0%	.8%	1.2%	61%	37%
Course Outline easily understood	0%	1%	1%	50%	48%
GRADE %	**A**	**B**	**C**	**D**	**F**
Grade Received	71%	23%	.1%	.09%	0%

The following chart (10.1) represents the statistics from chart 10 in a bar graph format. 70% strongly agreed the course content was appropriate, however, 60% strongly disagreed the course outline was clearly understood. The remaining factors were evenly dispersed.

Table 10.1
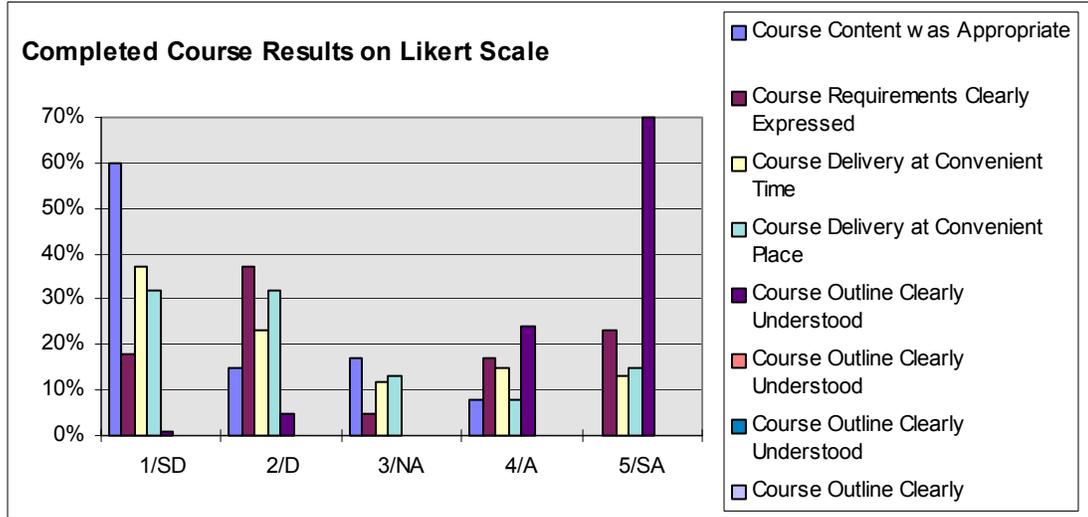
Table 10.2 is in a pie format displaying the average grades received from those who completed a WCTC Web-based course. 71% of Sample Group B received an "A" and 23% a "B". A smaller percentage of .1% received a "C" and .09% a "D". 0% of those students who completed a Web-based course received an "F".

Table 10.2
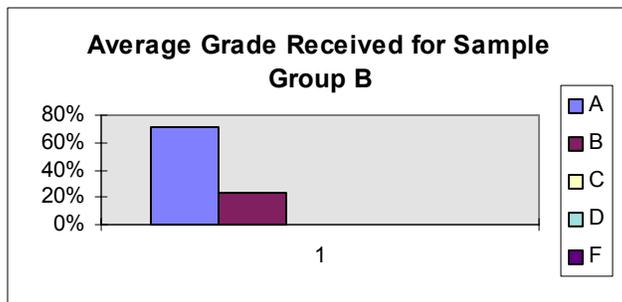
Table 11 displays the responses given from Sample Group B regarding factors that would increase the success rate for those taking Web-based courses through WCTC.

Table 11

QUESTION	1/SD	2/D	3/NA	4/A	5/SA
Preliminary Web Training course	20%	27%	34%	14%	5%
Preliminary Web Preparation course	14%	24%	32%	26%	4%
Better Communication with Instructor	3%	15%	30%	34%	18%
Better Individual Student Support	4%	22%	35%	25%	14%
More Flexible Time Requirements	4%	18%	32%	13%	33%
Higher level of Computer/Internet Technical skills	7%	24%	35%	22%	12%
Restructuring of Course Requirements	10%	26%	42%	18	4%

Table 11.1 is a representation in a bar graph format of the statistics recorded in Table 11.

Table 11.1
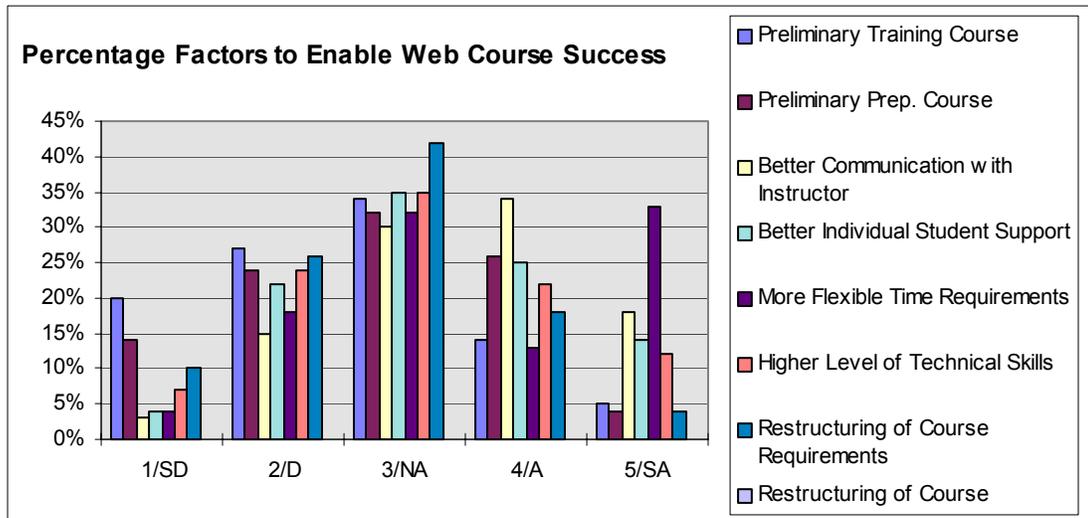
Ironically the "NA" rating (or #3) heavily dominated the final question in the Likert portion of the questionnaire. Disagree and agree, (or values #2 and #3) however, were also dispersed fairly evenly. Strongly disagree and strongly agree (#1 and #5) were chosen most infrequently.

The need for more flexible time requirements was answered strongly agree with a 33% majority. Not applicable had a 32% response rate from participants. In relation to the need of a preliminary training course, 34% responded not applicable and a total of 47% either disagreeing or strongly disagreeing. A preliminary preparation course, however, though a majority responded not applicable, those participants who agreed voted at 26% while those who disagreed was at 24%.

The final question's results were the most impartial in terms of "not applicable" being the most common response with the highest percentages. This final question led the research to conclude that more flexible time requirements was the most common need and/or concern for those enrolled in Web-based courses through WCTC.

This portion of the questionnaire was proceeded with several individual comments. Because there was no part of the survey that requested personal comments, the research found these comments to be quite significant. As indicated, the survey questionnaire is anonymous, therefore all following comments will also remain completely anonymous as well.

The comments have been categorized as one of three types: *TopClass* related (TC), instructor-negative (I-), and instructor positive (I+). By categorizing

these individual comments, the researcher will be able to utilize "qualitative"

information for making recommendations regarding WCTC Web-based courses

offered through WCTC.

TC

Problems with site. Confusing and incorrect labeling of chapters by school site. Frustration was relayed to instructor. Could not access site at various sites.

I have taken many computer classes before taking this Web-based class which I thoroughly enjoyed. The instructor was so pleasant and reachable. Unfortunately the breakdown of the program TopClass was a problem.

As usual with any computer information, the instructions for the use of the program were not great. I had a problem sending attachments at first just because the instructions did not say to <u>SCROLL</u> down. Such a simple addition in the instructions would have been helpful. I do not know how people who are not computer literate could handle a program of this type. I would like to take more of these [Web-based] courses in the future.

This concept is great however TopClass software is inadequate.

I believe in the concept of Web-based instruction...couple comments:

- *Great way to learn; however, structure of software has way too many loop [holes] and inefficiencies (WCTC's Program).*
- *For my Ethics and Economics class each, the assignments were way lengthy! The time involved per class was approximately 15-20 hours per week*
- *Provide software to teacher and students so everyone is using [the] same system and all would be compatible.*
- *Perhaps Web-based courses should be <u>SELF-PACED</u>, 6-9 months to complete? Learning would be more efficient and comprehensive.*
- *This way, students would be working to learn*

Keep it simple. I took an Economics course and my computer skills weren't being tested.

I -

Need more feedback in a timely manner. The book was excellent.

I thought this course was very informative. This is the first Web-based course I've taken. I enjoyed being able to work at my own pace. The weaknesses of the course were:

- *I never knew how much the assignments were worth.*
- *Assignment grades and commentary's were late-to-never, so it was hard to get questions answered.*

I had problems with one teacher who 'circumvented' the school system and asked us to e-mail to his personal e-mail. I had a tough time since my software (MS Works, For Word Processing, and Spreadsheets) wasn't compatible

...Need a new teacher.

Need a professor that isn't rude and is helpful to the students.

I +

I don't think people should register or this type course if they don't have access to the Web. My instructor was very prompt at returning any messages, email or by the phone.

Chapter V
Summary, Conclusions, and Recommendations

Introduction

This Chapter includes a summary of the study, conclusions, and recommendations. The summary includes the purpose of the study, the study objectives, the significance of the study, the design, and the major findings. The conclusion will cover the significant factors from Sample Groups A and B. Finally, recommendations for future research.

Summary

The purpose of this study was to identify factors that contribute to the success or failure rate of students enrolled in Web-based courses offered through WCTC. WCTC is considering the development of an instructional course aimed at helping students to successfully complete Web-based courses. Currently, there is no data that identifies what factors contribute to student success or failure. Therefore, the identification of the factors is necessary for the development of this new instructional course.

The objectives of this study were:

1) Determine factors that caused students to drop out of Web-based courses offered through WCTC.

2) Identify what factors contributed to the success of students who have completed Web-based courses at WCTC.

3) Provide instructors with data that will aid them in the development and delivery of Web-based courses that provides structure for student success.

4) Provide WCTC with the accurate information on student success and failure that can be used to develop a course (focusing on the needs of students and faculty for the success in Web-based instruction).

As Web-based instruction emerges as an effective alternative in delivery methods, colleges must provide students and faculty with the appropriate skills to be successful. They must be particularly attentive to the technical skills needed to navigate the sophisticated software, which are basic to Web-based instruction.

From the fall of 1998 to the spring of 1999 WCTC has been offering Web-based courses through a web package called *Top Class*. Despite this move from a basic HTML structure, the rate of success continues to average 60% in these courses.

The research findings of this study identified factors that contributed to the success or failure rate of students enrolled in Web-based courses. This will enable WCTC course designers and support staff to develop and administer a preparation course prior to enrolling in any Web-based course. This course will provide students the necessary skills, preparation, and information to successfully complete a Web-based course. In addition, instructors creating and facilitating a Web-based course will have insight as to the most effective design strategies for the success of the participating students.

<div align="center">Conclusions</div>

The conclusion section will be broken down into eight sections. Each section will represent the categories on the survey instrument. These sections will

look at the demographically based information and Likert question responses from both Sample Groups A and B.

The survey participants were divided into those who withdrew from a Web-based course during the Spring Semester of 2000 at WCTC (Sample Group A) and those who completed a Web-based course (Sample Group B). Both groups were compared and contrasted for the purpose of making recommendations and providing insight for future study.

Demographically based Statistics

<u>Gender</u>

In both groups, gender was distributed fairly evenly. For Sample Group A, 58% of the participants were female and 42% male. Sample Group B showed the female response at 64% and the male response rate at 36%. It is concluded, therefore, that gender does not play a major factor in the success rate of those enrolled in a Web-based course at WCTC as well of those who withdrew during the spring semester of 2000.

<u>Age</u>

In the age category, the response rates differed in some aspects. For Sample Group A, a majority at 45% was in the 36-45-age range. The majority of those in Sample Group B however, were in the 26 to 35 age range. Those in Sample Group B between the ages of 36-45 was at 15% while those in Sample Group A between 26 and 35 was at only 8%.

In addition, participants at 55+ dropped a Web-based course at 1% and 3% of those 55+ completed a course. Because those who withdrew form a Web-based

course represented only 5% of the response percentage. It is concluded that age does play a factor in the successful completion of a Web-based course at WCTC.

The exact factors however regarding age are speculated based upon questions answered on the survey questions. One conclusion is the technological skills of the participants. Those in the age category of 36-45 may lack some of the basic computer skills from those of their younger counterparts needed to complete a Web course at a distance. It can be argued that a majority of those in the age range of 36-45 are more stable in their careers and closer to retirement. They therefore may have less incentive to follow through with a Web-based course. This theory, likewise, would fit with those aged 55+.

Those individuals in the age group of 26-35 may still be settling into jobs and seeking further advancement in technical skills as the work place grows increasingly more complex. In addition, their level of knowledge may be more advanced as they represent for the most part Generation "X", a generation exposed to more highly advanced technology in the education system. The incentive would appear to be higher for those in this age group.

Those aged 18-25 showed a withdrawal rate of only 1% and completion rate of over 30%. Again the exposure and more easily accessible technology would allow these individuals to more easily complete a Web-based course.

Additionally, for those 36-45, family may also play a large role. Extracurricular activities of children, family obligations, school activities could decrease the amount of time a person in this age group may have to successfully complete a Web-based course.

Category of Job

The job category played a significant role in the completion of a Web-based course. The fact that "Other" was the most frequent response in both groups is indicative that the category was too limiting for the participants. However, In Group A, 18% of those who withdrew were factory workers. None of those who withdrew were in management, administration, or educational positions. From this statistic, it can be concluded that a training or preparation course would contribute to the success of a Web course.

Of those who completed the Web course, 14% were in management, 10% in administration, 11% in manufacturing, and 6% in an educational related position. From these statistics, it can be argued that individuals holding these positions may have higher levels of technical skills and/or access to a computer. In addition, these jobs may have continuing educational requirements. Those in factory positions may not have the technical skills nor access to the proper technology to complete a Web course without the physical presence of an instructor, preferring a more traditional system of education and learning. Also, students employed in a factory position may feel more comfortable in a "hands on" type of learning environment.

Type of Pay

In the pay category, of those in Sample Group A, 42% indicated being paid hourly, 66% chose "other", and only 12% on an annual salary. Although "other" dominated this category for Group A, the fact that 42% chose hourly can

be closely related to the consistent drop rate of Web-based courses at 18% for those in factory related positions.

Level of Education

In Sample Group A, high school was the highest level completed at a 91% rate. Only 7% indicated holding an Associate's Degree, 2% a Bachelor's, and 1% chose "other". Again, this finding can be related to those who withdrew holding a factory position, therefore not as computer literate as those in other age categories. Just over 50% of Sample Group B indicated high school being the highest level of education. Although a high school education dominated those who completed a Web course, nearly 20% held and Associate's Degree, 14% a Bachelor's Degree, 4% a Master's Degree, with 5% indicating "other". This statistic may indicate that despite high school education being the highest level completed, those who completed a Web course are presently enrolled in a program at WCTC with the intention of pursuing an advanced degree.

The level of education indicates that those who are most likely to be successful in Web courses are those who hold a degree beyond high school.

Distance Traveled

Of those in Sample Group A, 48% indicated living 0 to 5 miles from the campus of WCTC. The largest percentage in Sample Group B, however, was 11 to 20 miles (at 33%). The conclusion indicates that those more likely to withdraw live closer, perhaps suggesting that taking the class on campus is easier than those who live farther away. In addition, of those who successfully completed the Web course, 19% lived 21 to 40 miles away, and 18% lived 6 to 10 miles from campus.

The majority at 73% of those who completed the course lived more than 6 miles from campus. Again this may suggest that the opportunity to retake the course or take it on campus is either very difficult or not an option.

Enrollment Reasons

Of the individuals who withdrew from a Web-based course, 51% enrolled for personal improvement. Of those who completed the course, a majority, at 31% indicated to fulfill a WCTC Program Requirement. Professional Certification ranked only 2% of those who withdrew from a Web-based course. Of those who completed the course, however, 14% was for Professional Certification.

Though both personal reasons and WCTC Program Requirements were the two strongest criteria for both Sample Groups, it is apparent that the strongest motivator for completing the course was to complete a degree fulfillment. Of those in Sample Group A, 8% chose "other" and for those in Sample Group B, 15% did so.

The remaining questions from the survey were on a Likert Scale with each response having a point value. For Sample Group A, the first question asked of them to rate the reasons why the course was dropped. For those who completed the Web-based course, they were asked to skip the first of the Likert questions and continue with the remaining two.

The following table is repeated from Chapter 4 showing the key for the Likert questions:

1	Strongly Disagree
2	Disagree
3	Not Applicable
4	Agree
5	Strongly Agree

Reasons for Withdrawal

This question was heavily favored in two categories, with the other factors dispersed fairy equally. 70% of those who withdrew strongly agreed dropping the Web-based course was for personal reasons. In the opposite direction, 60% strongly disagreed that a lack of technical skills was the reason for withdrawing from the course.

Though "personal" is not defined in the question, it is concluded that "personal" indicated factors unique to the individual and not related to the course technology or the college. Despite earlier observations that a lack of technical skills was directly related to why students withdrew from a Web-based, 60% of those individuals disagree. A conclusion then, is more difficult to form.

It is possible that those who responded to this question did not want to admit a lack of technical knowledge. In addition, the term "other" dominated the

responses in many of the questions. This could be a consequence of limiting the response choice, therefore leading the participant to chose the "other" option without giving the research adequate feedback.

The second question in the survey asked those of Sample Group B why they were able to complete a Web-based course.

<u>Reasons for Completion</u>

Of the reasons for completing a Web course at WCTC, the three strongest reasons were appropriate course content, clearly expressed course requirements, and convenient time delivery of the course. Delivery at a convenient place and clear outline were also quite favorable for those in Sample Group B. In addition, 71% received and "A", 23% a "B", and less than 1% (0% an "F") a "C" or lower.

It is to be assumed that those who completed the course had, for the most part, a positive experience. What must be identified, however, is that the majority of the responses chose agree as opposed to strongly agree. The fact that WCTC has the opportunity to increase the level of satisfaction with those enrolled in Web-based courses is apparent.

<u>Factors that would enable Web course success</u>

The final portion of the Likert survey asked those individuals who completed a Web course to rate what aspects may increase and/or contribute the success rate for completing a Web course in the future. Of the seven selections, the following were dispersed almost equally. A higher level of technical skills, a Preliminary Web/Preparation Course, and restructuring of course requirements

had an even level of strongly agree and strongly disagree. "Not applicable"

remained the highest percentage in all factors.

Of the factors that Web-course enrolled students indicated as important in

the success rate were more flexible time requirements, better communication with

the instructor, better individual support, and a higher level of computer/Internet

skills. Those factors that students either strongly disagreed or indicated "not

applicable" as helpful in Web-course success were a Preliminary/Web-related

Training course. Though as previously indicated, restructuring of course

requirements was predominantly in the "not applicable" category, it also rated

higher as disagree compared to agree.

<div align="center">Recommendations</div>

This section contains recommended uses of the findings of this study and

will conclude with recommendations for further research.

Recommendations based on the Findings

Based on the Review of Literature and the findings of this study and the

conclusions, the following recommendations can be made. In order to further

break down the recommendations, the following proposals have been grouped

into 3 categories: Technology, Instruction, and Technical Support provided by

WCTC.

1.   Technology

At the present time WCTC is using two formats in which instructor's

design their Web-based courses. All Web courses must be formatted in one

software-specific design. Because the decision of WCTC was to use *TopClass*

however still allowing the instructors a choice as to which program to use, those students enrolled in only Web courses had to adapt the a particular instructor's design of the Web course. This can cause confusion, especially for those at a distance with limited or no contact with the instructor.

Based upon some of the survey participant feedback, perhaps finding a program more user friendly than *TopClass* would adhere to more successful student completion. A lack in Web course students who have access to advanced technology may be limited. This, in turn, could limit the ability to enroll in certain Web courses formatted in more advanced programs. A universal Web design program that provides a simple format and user-friendly access could dramatically increase both Web course enrollment and successful Web course completion.

2.   WCTC Instruction

WCTC Instructors must provide more feedback and in a more timely manner. Based upon student comments from the survey instrument, most commonly reported was a lack in communication with the instructor. A more structured outline in how WCTC Instructors deliver materials over the Web could assist students in success, especially those enrolled in only Web-based courses. In addition, all Web enrolled students must be given a mandatory feedback form that routes directly to the Technical Services Department at WCTC.

Providing sessions that allows Web course students the opportunity to speak with and voice any concerns to the instructor would help those with even the most basic questions or problems.

3.	WCTC Student Support

WCTC students and instructors alike would benefit from a student support/help desk. Because many Web-course students work late into the evening, an extended time frame or even a 24-hour desk for students to call would allow the students the ability to receive help immediately. In addition, WCTC must ensure the infrastructure for Web-related courses has technical support to ensure no interruptions on the server.

Strong communication between both the help desk and the instructors is crucial. Funds must be allocated to ensure the support system is knowledgeable and fully staffed. Students working the Web course support desk can be brought in based upon specialty or recent students of the course in question. Certain days can be designated based on subject areas. A weekend support desk may also provide beneficial as many Web course enrolled students do coursework during weekend hours.

<div align="center">Recommendations for Further Research</div>

Based on the review of literature and the findings of this study, the researcher proposes the following recommendations for future research:

1.	Upon implementing a student support desk for Web course students, a study could be performed to determine its effectiveness. By recording student questions and problems, as well as frequency and average time of day called, WCTC would have the opportunity to provide students the most efficient help desk possible.

2.   Perform a comparison study from student feedback forms taken from present Web formatted courses to those relating to a newly implemented Web program. Compare and contrast original feedback with new.

3.   Compare the student success rate of Web courses and follow up with a report indicating what factors have or have not contributed to student success in a Web-based course.

4.   Perform a comparative and informative study to similar colleges. Determine factors contributing to Web success. Additionally, determine and investigate Web packages in different formats.

5.   Finally, develop and administer a Web preparation course and determine its effectiveness as related to students enrolled in these courses.

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Appendix A

HUMAN SUBJECT CONSENT FORM

HUMAN RESEARCH SUBJECT CONSENT FORM

I understand that by this questionnaire, I am giving my informed consent as a participating volunteer in this study. I understand the basic nature of this study and agree that the potential risks, if any, are exceedingly small. I also understand the potential benefits that might be realized from the successful completion of this study. I am aware that the information is being sought in a specific manner so that no identifiers are needed and that strict confidentiality will be observed and guaranteed. I realize that I have the right to refuse to participate and that my right to withdraw from participation at anytime during the study will be respected with no coercion or prejudice.

NOTE: Questions or concerns about participation in the research or subsequent complaints should be addressed first to the researcher or research advisor and second to Dr. Ted Knous, Chair, UW-Stout Institutional Review Board for the Protection of Human Subjects in Research:

11HH, UW-Stout

Menomonie, WI 54751
(715) 232-1126

Appendix B

COVER LETTER OF SURVEY INSTRUMENT

University of Wisconsin-Stout
Communications, Education, Technology Department
Menomonie, WI 54751-0790
Phone: (715) 232-1311/Fax: (715) 232-1441

May, 2001

Lisa Schoenberger
Graduate Student, University of Wisconsin-Stout
Menomonie, WI 54751
lmschoenberger@yahoo.com

Dear Student,

As Web-based courses continue to emerge at Waukesha County Technical College as an accepted instructional delivery method, WCTC wants to determine its effectiveness in providing this educational option. This survey is designed to gather information that will be used to improve WCTC's ability to deliver Web-based courses. Because you were enrolled in a Web-based course in the spring semester of 2000, your input is important to the success of this project.

Please review and respond to the attached survey. Your response will be kept completely anonymous. You are not required to provide your name so that your confidentiality will be protected. Each survey sent out is numbered. These numbers are assigned for the sole purpose of tracking and rating the survey results; your name will remain anonymous. You may complete the attached survey and return in the enclosed self-addressed stamped envelope.

WCTC is considering the development of an instructional course for students thinking about enrolling in Web-based courses. The results of this survey will make sure these students have sufficient preparation to be successful in the innovative delivery method. The results of the survey are available to you. If you would like the results, please indicate at the bottom of the survey.

Thank you for your time. Your input is very important in determining ways that will help future learners find success in Web-based coursed offered through WCTC.

Sincerely,

Lisa M. Schoenberger
Graduate Student

Appendix C

LIST OF CHOICES PROVIDED TO SURVEY PARTICIPANTS
ON THE LIKERT QUESTIONS
IN THE SURVEY

The following lists provide the choices the survey participants had on the

Likert Formatted questions. The survey is presented in its entirety in Appendix C.

1) Rate the reasons for withdrawing from a Web-based course.

- Lack of technical skills

- Time constraints

- Lack of adequate technology

- Academically too challenging

- Personal demands

- Lack of WCTC technical support

- Lack of instructor communication

- Insufficient course information provided

2)   Rate the reasons allowing for successful completion of the Web-based

course.

- Appropriate course content

- Clearly expressed course requirements

- Convenient delivery time

- Convenient delivery place

- Quality student support

- Clear course outline provided

3)		Rate the reasons that would increase Web course success.

- Preliminary training course

- Preliminary preparation course

- Better instructor communication

- Better individual student support

- More flexible time requirements

- Additional technological knowledge

- Restructured course requirements

Appendix D

SURVEY

I.   PERSONAL/DEMOGRAPHIC INFORMATION
*Please circle the correct answer

A.   **Indicate your age range**

   18-25   26-35   36-45   46-55   55+

B.   **Indicate your gender**

   Male   Female

C.   **Which accurately describes your employment?** *Please choose one

   Management   Manufacturing   Custodial

   Administrative   Clerical   Educator   Factory

   Other

D.   **Indicate your pay type**

   Salary   Hourly   Other

E.   **What is your level of education?** *Please indicate the highest level

   High School   Bachelor's   Post Doctorate/Ph.D.

   Associate's   Master's   Other

F.   **Indicate the distance you travel from WCTC in miles**

   0-5   6-10   11-20   20-40   40+

IV.   **What is the reason for enrolling in a Web-based course at WCTC?** *Please indicate the most appropriate

   Job Promotion   Professional Certification

   Personal Improvement   Job Requirement

   Other

H. **Were you enrolled in any other courses at WCTC during the semester you enrolled in the Web-based course?**

Yes   **No**

If yes, how many credits? _____

II. **IF YOU WITHDREW FROM A WEB-BASED COURSE THROUGH   W.C.T.C. AT ANYTIME, PLEASE ANSWER PART II. IF NOT,   PROCEED TO SECTION III.**
Please place an "X" on the number most appropriate.

Key:

1=Strongly Disagree   2=Disagree   3=N/A   4=Agree

5=Strongly Agree

Withdrawal from WCTC's Web-based course was a cause of:

	SD	D	NA	D	SD
Lack of technical skills	1	2	3	4	5
Time constraints	1	2	3	4	5
Lack of adequate technology	1	2	3	4	5
Academically too challenging	1	2	3	4	5
Personal demands	1	2	3	4	5
Lack of technical support from WCTC	1	2	3	4	5
Lack of communication and/or feedback from course administrator	1	2	3	4	5
Insufficient information provided for course requirements	1	2	3	4	5

III. PLEASE INDICATE WHY YOU WERE ABLE TO COMPLETE THE COURSE, WHETHER SUCCESSFULLY OR NOT:
Please follow the same instructions from part II.

	SD	D	NA	A	SA
Course content was appropriate for educational requirements	1	2	3	4	5
Course Requirements clearly expressed and attainable	1	2	3	4	5
Course delivery was at a convenient time	1	2	3	4	5
Course delivery was at a convenient place	1	2	3	4	5
Received quality student support	1	2	3	4	5
Course outline was clear and easily understood	1	2	3	4	5

IV. WHETHER YOU DROPPED OR COMPLETED A W.C.T.C. WEB-BASED COURSE, PLEASE INDICATE WHICH WOULD HAVE EITHER: KEPT YOU FROM DROPPING THE COURSE OR AIDED IN YOUR SUCCESS IN THE COURSE.
Please follow instructions from parts II and III.

	SD	D	NA	A	SA
Preliminary Web-based training course	1	2	3	4	5
Preliminary Web-based preparation course	1	2	3	4	5
Better communication with instructor(s)	1	2	3	4	5
Better individual student support	1	2	3	4	5

	SD	D	NA	A	SA
More flexible time requirements	1	2	3	4	5
Additional technological knowledge	1	2	3	4	5
Restructuring of course requirements	1	2	3	4	5

V.   PLEASE INDICATE IF YOU WOULD LIKE A COPY OF THE SURVEY RESULTS

Yes ☐   **No** ☐

Name:_____

Address or e-mail:_____

*Note: your name, if given will remain anonymous.

Appendix E

LETTER OF THANKS AND SURVEY RESULTS TO REQUESTING
PARTICIPANTS

May, 2001

Survey Results
Master's Thesis: Lisa M. Schoenberger
Sent To: Participants Request

Dear Participant,

I would first like to thank all of you who took the time to fill out the survey mailed to you in April of 2000. The turnout was good, and gave me the information needed to make recommendations for my thesis.

Over the past year, I have worked with the Administration, specifically the Technical Design Department at Waukesha County Technical College to research Web-base course offerings. In doing so, it is the intention of WCTC to utilize this research in a manner that will aid future enrollments in Web courses.

Your participation made my work possible. At the end of each survey, you were asked if you'd like the tabulated results of the survey results. 299 surveys were sent out, 84 were returned and 18 requested the results.

Attached are the statistical data from all surveys received. Unfortunately, I received several mid-July and was not able to incorporate the responses given the timeframe. I am attaching to those of you requesting this information along with this letter. Again, I would like to remind you that ALL identities are kept confidential.

If you'd like further information, please request via my e-mail address.

Again, thank you for your interest and participation!

Sincerely,

Lisa M. Schoenberger
Graduate Recipient
University of Wisconsin-Stout

Appendix F

SUMMARIZED PERCENTAGES OF SURVEY RESULTS
REQUESTED BY PARTCIPANTS

May, 2001
University of WI-Stout

Of the 299 survey questionnaires mailed, the overall response rate was 28%, 84 surveys returned. Of that 28% return rate, 42% were male, close to 55% female, and 02% provided no demographic information. The gender response rate was quite equal, with the female population respondents only 6% higher than that of their counterparts.

Age of the respondents were dominated by 18-25 (31%) and 26-25 (45%). Those ranging in age from 36-45 responded with a 15% feedback, while those 46-55 with a 12% response rate. In the age group of 55+, close to 2 % responded and as previously mentions, close to .02% surveys indicated no demographic information.

The job category was as follows: 14% in management, 10% in administration, 13% in clerical, 0% in custodial, 2% in factory positions, 11% manufacturing, 6% in education, and unknown at 02%. An overwhelming majority at 42% chose other. Though most did not indicate what job category they placed themselves, some of the respondents who did, indicated sales, health care, homemaker, and special trade positions.

In terms of how respondents indicated wage supplement, 57% of the respondents indicated being paid hourly, 30% on a salary, 12% indicated other, and 02% unknown. Of those that indicated "other", the most typical response was commission. When asked the distance traveled to take a WCTC Web-based course, 26% traveled 0-5 mile, 17% 6-10, 33% 11-20, 18% 21-40, and 3% 41+ miles, and again, 02% provided no information.

The final category was the reason the participants enrolled in a WCTC Web-based course. 31% indicated the course being a WCTC program requirement, 24% for personal improvement, 14% for professional certification, 2% for job promotion, 3% planned on transferring credits earned at WCTC to a

college or university, 18% indicated other, and only 5% dropped the course at some time during the semester.

The demographic responses consisted of the majority ranging in age from 18-35 (56 out of 84) with 48 out of 84 in the hourly pay rate scale. A total of 52% had a high school education and distance traveled was fairly evenly spread out. A majority of those enrolled in the Web-based courses (46 out of 84 respondents), did so for either personal improvement or a WCTC program requirement. The job categories indicated that 35 out of 84 indicated "other". The remaining categories were very similar in percentages. The average credits, in addition to the Web-based course respondents were enrolled in was 6 total, ranging from 0 credits to 18 in total credits enrolled for any participant.

Table 2 is based upon the rating key of the Likert portion of the survey questionnaire. In this part of the survey, participants were asked to indicate, using a scale ranging from 1-5, specific responses feedback regarding reasons for dropping the course, course preparation and delivery evaluations, and finally, factors presented that may (or may not) contribute to successful completion of a WCTC Web-based course.

Table One

Likert Scale Rating Key

LIKERT SCALE RATING	LIKERT SCALE RATING KEY
1	STRONGLY DISAGREE
2	DISAGREE
3	NO OPINION/NOT SURE
4	AGREE
5	STRONGLY AGREE

Table Two

Reasons for withdrawal from a Web-based, TopClass formatted course during the spring semester, 2000 at WCTC

QUESTION	1/SD	2/D	3/NA	4/A	5/SD
Lack of Technical Skills	60%	15%	17%	8%	0%
Time Constraints	18%	37%	5%	17%	23%
Lack of Adequate Technology	37%	23%	12%	15%	13%
Academically too Challenging	32%	32%	13%	8%	15%
Personal	1%	5%	0%	24%	70%
Lack of WCTC Technical Support	19%	25%	19%	6%	31%
Lack of Instructor Communication	23%	22%	25%	8%	22%
Lack of Information Given	24%	13%	25%	13%	25%

Table Three

Completion of the Web-based, TopClass formatted course in the spring semester, 2000 at WCTC and the grade received

QUESTION	1/SD	2/D	3/NA	4/A	5/SD
Course Content Appropriate	0%	1%	1%	71%	27%
Course Requirements clearly expressed	0%	1%	1%	69%	29%
Course Delivery at a convenient time	0%	.4%	.6%	69%	30%
Course Delivery at a convenient place	0%	.8%	1.2%	61%	37%
Course Outline easily understood	0%	1%	1%	50%	48%
GRADE %	A	B	C	D	F
Grade Received	71%	23%	.1%	.09%	0%

Table Four

Factors that may or may not contribute to the success rate of students enrolled in a Web-based course at WCTC

QUESTION	1/SD	2/D	3/NA	4/A	5/SD
Preliminary Web Training course	20%	27%	34%	14%	5%
Preliminary Web Preparation course	14%	24%	32%	26%	4%
Better Communication with Instructor	3%	15%	30%	34%	18%
Better Individual Student Support	4%	22%	35%	25%	14%
More Flexible Time Requirements	4%	18%	32%	13%	33%
Higher level of Computer/Internet Technical skills	7%	24%	35%	22%	12%
Restructuring of Course Requirements	10%	26%	42%	18	4%

Population

The population of this research was based upon only those students who enrolled in a Web-based course formatted in *TopClass*. This consisted of three semesters as *TopClass* was introduced in the fall of 1999.

The population size was exactly 299, only those enrolled in the spring of 2000. Students were selected in early fall of 1999 to proceed with surveying for the most recent feedback possible.

Instrumentation

The purpose of this study identified success and/or failure rates of students who enrolled in *TopClass* in the spring of 2000. The sample size was provided by the Technical Design Department at WCTC. The factors were identified through survey results mailed to the sample group.

The intention of the research was to divide the survey participants into Group A, those who withdrew from a Web course and Group B, those who completed a Web course. Each participant was mailed identical surveys, however asked to respond based upon completion of the course.

The survey incorporated demographic questions allowing the researcher to better identify the characteristics of the participants and groups. The survey included questions asking the participants to rate aspects of the Web courses using a Likert scale.

Data Analysis

All surveys related to individuals enrolled in *TopClass* Web-based courses at WCTC were conducted based upon the spring of 2000. The surveys were sent

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out to the participants in mid-April of the year 2000. Tracking of all survey results

has been recorded into a preliminary tracking spreadsheet. The results of the

surveys were completed in August of the year 2000.

   This data received was used to enhance the Web-based learning

experience through WCTC. The research results were analyzed and recorded

through a specifically designed Excel Spreadsheet and the graphed based on the

calculated statistics.

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