The Effects of Alternative Teaching Strategies on the Achievement of Accounting Students

by

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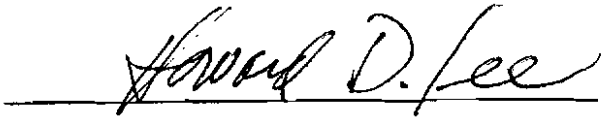

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ABSTRACT

This study was conducted on adult students at Chippewa Valley Technical College who were enrolled in Accounting I in the fall semester of 2007. A hybrid delivery method where students received 60% face-to-face instruction and 40% online instruction was compared with a traditional face-to-face method of delivery. Student teaching and learning preferences were identified and compared with success rates in each class. The most preferred delivery methods within both the hybrid and the face-to-face sections were either seeing/hearing about or a combination. The most preferred learning method in both sections was doing/hands-on. All but one student stated that technology enhanced their learning, and the majority of both classes chose face-to-face as their preferred communication method. Factors such as gender, age, ethnicity, student major, and student's technological abilities were also compared. Due to the lack of diversity between the classes, it was not determined if there were differences in learning style versus success rate based on these factors. Student success rates were ranked by student grades:

A, B, C, D and F. Students in the face-to-face section had slightly higher grades than the hybrid section, but students living further from campus had greater success rates in the hybrid environment.

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Chapter I: Introduction

Background of Study

The idea that alternate learning styles have an impact on how students learn is not new. Different theories on multiple intelligences and learning styles have been in existence for over 30 years (Richlin, 2006; Stanford, 2003). Multiple intelligence theories have been defined by several different researchers, in several different ways. One of the most popular theories originated in 1983, by Howard Gardner. Gardner's theory proposed that there are at least eight intelligences and possibly more. These intelligences include: verbal/linguistic, logical/mathematical, visual/spatial, bodily/kinesthetic, musical/rhythmic, interpersonal, intrapersonal, and naturalistic (Armstrong, 2004; Clump, & Skogsbergboise, 2003; Nolan, 2003, Viadero, 2003). Gardner also believed that barring a cognitive disability, all people have some level of each of these intelligences; one or two of them being predominant (cited in Stanford, 2003).

Another popular theory was proposed in 1991 by Dr. Richard Felder and Barbara Soloman of North Carolina University. Felder and Soloman's theory was that intelligence can be allocated into four categories; Active/Reflective, Sensing and Intuitive, Visual and Verbal, and Sequential and Global (Munro & Rice-Munro, 2004).

A study conducted by Tonay Grasha began in 1976, and later led to the creation of yet another learning style theory. The Grash-Riechmann, Learning Style Inventory; created by Sheryl Hruska-Riechmann and Tony Grash, has been used by educators for over 30 years to assist in determining student learning preferences. This theory classifies

students into the following categories: Avoidant, Dependent, Participant, Independent, Competitive, and Collaborative (Richlin, 2006).

These are only a few of many theories on intelligence and learning styles (Klein, 2003; Walker & Gazzillo-Diaz, 2003), additional theories include: ACT 1993, Adult Learning Theory 1981, Algo-Heuristic Theory 1993, Andragogy 1984, and several others (Kearsley, 1994-2004). Despite how we choose to categorize learning styles, one can conclude that all learners do not learn in the same way (Felder, 2004; Gulc, 2006; Moallem, 2007; Richlin, 2006; Rose & Nicholl, 1997; Shepard, 2004; Viadero, 2003).

By altering teaching methods to accommodate a variety of learning styles, student success rates are believed to increase (Gulc, 2006; Igneri & Shaw 2007; Kornhaber, 2003; Morrison, 2004; Nolan, 2003; Nadkarni, 2003; Rochford, 2003; Zimbardo, 2004). Nolan (2003) further stated that "Teachers, who teach toward multiple intelligences, realize the benefits such as active learners and successful students" (p. 118).

The objective of Chippewa Valley Technical College (CVTC) is to prepare students for the workforce and/or further education. CVTC serves a broad population. While ethnic diversity is minimal; there is major diversity in terms of age, gender, physical, and cognitive abilities. Because of this varied population, it is important that the college find new and innovative ways to ensure that maximum learning is achieved.

The accounting department provides courses for students enrolled in the accounting program. In addition, accounting courses serve students enrolled in most of the other business majors offered at CVTC. These programs include: Business Management, Marketing, Paralegal, and Supervisory Management. In addition to the

diversity listed above, these students also have a variety of needs and interests. Because of this, it is important that the teaching methods used address all of these needs.

Accounting courses at CVTC have traditionally been taught using instructor-led training, in a classroom environment. And more recently, they have been taught in a completely online environment. Some work has been done to incorporate technology and new teaching strategies into the curriculum; however, assessment on student learning preferences versus student achievement is still inconclusive. Based on this researcher's experience as an 18 year veteran in the accounting department at CVTC, the failure and drop rate of students enrolled in traditional accounting courses is often high. In addition, the failure and drop rate of students enrolled in traditional online courses is even greater. Data collected in 2006 by the Instructional Support / Staff Development (ISSD) department at CVTC supports this statement. The approximate retention rate for students enrolled in Accounting I in a traditional classroom environment was about 75%, and dropped to about 52% for students enrolled in internet courses. Using the same data, the success rates for the classroom were as follows: 37% A's, 30% B's, 9% C's, 7% D's and 17% F's. The success rates of the internet courses were: 33.5% A's, 19% B's, 14% C's, 0% D's and 33.5% F's. Based on this limited data, it appears that there is a difference in student's success in the classroom versus the internet. The percentage of students that failed in the classroom was 17% and the on the internet it was 33.5%. Overall it appears that there is about a 23% difference in retention and a 17% difference in success between traditional classroom and online courses.

Studies by many experts in the fields of education and learning styles have suggested that matching teaching/learning styles will increase student learning, success,

and retention rates (Bleed, 2001; Felder, 2004; Gulc, 2006; Igneri & Shaw, 2007; Rose & Nicholl, 1997; Shepard, 2004; Torry, Viadero, 2003). At the present time, it is not clear whether a mismatch of teaching/learning styles is a factor in determining student success in the accounting program at Chippewa Valley Technical College.

Statement of Problem

In the accounting education setting, traditional lecture and exam are still the predominant methods used to teach content and assess the learning (Burnett, 2003). These methods only address the needs of the visual/verbal/linguistic learner (Bollen, Janssen, & Gijselaers, 2000-2002). Previous research has shown that students seem to improve in all areas of study when the teaching methods are altered to address the needs of multiple intelligences and learning styles. (Bollen, Janssen, & Gyselaers, 2000-2002; El Mansour & Mupinga(2007); Moallem, 2007;Richlin 2006).

Purpose of Study

The purpose of this study is to determine if alternate teaching methods used on accounting students will have a positive impact on overall achievement and retention. A hybrid model of instruction where students receive 50% instructor-led, and 50% online instruction, will be compared with a traditional classroom model where students receive 100% instructor-led instruction. This study will attempt to identify tools or specific teaching strategies that increase achievement rates of students enrolled in Accounting I at Chippewa Valley Technical College.

Research Questions

Answers to be identified in this study are:

1. What are the learning preferences for accounting students?

2. Are there differences in learning style based on age, gender, or ethnicity?
3. What tools work best for addressing the learning styles of accounting students?
4. Will achievement rates increase using alternate delivery formats?

Significance of Study

The significance of the study is:

1. Learning styles of students enrolled in the accounting program at Chippewa Valley Technical College have never been identified. Identifying preferred learning styles could assist instructors with curriculum design and provide information on appropriate teaching strategies.
2. Determining the level of student achievement in Accounting I using a hybrid format can lead to modified teaching strategies to accommodate class learning style preferences as determined by measurement. Achievement levels can then be evaluated and compared with the achievement levels of instructor-led classroom students in same course. The results of the comparison will determine if altering teaching methods is beneficial to students enrolled in Accounting I at Chippewa Valley Technical College.
3. Determining if demographics such as age, gender, or ethnicity have an impact on preferred learning styles and could lead to a change in teacher's behavior toward different students. For example, if specific learning styles are identified, curriculum could be modified to incorporate activities that accommodate all of the identified learning styles.
4. Determining if technology or other educational tools enhance the learning process of accounting students may lead to the adoption of certain technology or other tools.

If specific tools are identified, they could be used to address multi-learning styles; then implemented into the curriculum of accounting courses offered at Chippewa Valley Technical College.

5. If using alternate teaching strategies such as a hybrid approach has a positive impact on student success in accounting, then it could improve student grades in accounting, and failure rates could decrease.

Limitations of Study

Limitations of this study are:

1. The sample is limited to students enrolled in Accounting I at Chippewa Valley Technical College.
2. Measurement of learning styles will be determined based on only a select measurement tool.
3. This study does not consider current economic factors that may determine the student population at Chippewa Valley Technical College. Unemployment and other economic factors pertaining to student enrollment are not considered.
4. Diversity in the classroom is not consistent from one semester to the next.

Definition of Terms

The following terms are referenced in this research.

1. Accounting Student – Individual enrolled in an accounting course at Chippewa Valley Technical College.
2. Hybrid Format – Course that blends instructor-led and online instruction (Bleed 2001).

3. Learning Style – "The act, process, or experience of gaining knowledge in a distinct or individual manner" (Beard, 2000; Cavanaugh, 2007).
4. Multiple Intelligences - A variety of intellectual abilities that individuals posses, that allow them to acquire and apply knowledge (Beard, 2000).

Chapter II: Literature Review

Introduction

The focus of this literature review is on learning styles. The concentration has been on the link between how people obtain knowledge and teaching methods used. The study includes periodicals, books, and internet sites, and reviews education at the elementary, secondary, and postsecondary levels. The review also looks at economics, gender, and social/cultural factors that could affect how people learn. While the literature differs somewhat in how it defines learning styles and/or intelligences, it seems to be in agreement that individuals do have preferred learning styles.

An extensive amount of research has been conducted on learning styles and multiple intelligences. Dunn (Rochford, 2003) defined a person's learning style as the way he/she concentrate on, process, internalize, and remember new information. Felder's definition of a learning style is described as the preference in which a person perceives information (Felder, 1993; Moallem, 2007). Intelligence as defined by Gardner (Rose and Nicholl, 1997) is the ability to solve a problem or fashion a product that is valued in one or more cultural settings. Gardner believed that intelligence varied by context. This research looks for the connection between a student's preferred learning style and the teaching methods used.

History

In 1983 Howard Gardner developed his theory on multiple intelligences. He adopted this theory by reviewing a rich variety of domains, which included: neurobiology, developmental psychology, biographies of gifted individuals, and cross-cultural research. In his definition of autonomous intelligence, he used brain damage to a

certain part of the brain as an example of how a person's linguistic ability could be destroyed, while musical ability remained in tact. Gardner also used the example of an idiot savant who could perform complex arithmetical calculations, but appeared retarded in all other respects (Klein, 2003). Gardner emphasized that because the human brain is so complex, it is not reasonable to make assumptions that all people think and learn the same. By combining his research from a variety of disciplines, he believed he made a strong case for his theory that there are at least seven different intelligences and probably more. Gardner categorized intelligence as: verbal/linguistic, visual/spatial, musical/rhythmic, logical/mathematical, body/kinesthetic, intrapersonal, interpersonal, and naturalistic. He believed that baring a cognitive disability, each person has some level of each of the intelligences, with one or two being predominant (Armstrong, 2004; Clump & Skogsbergboise, 2003; Nolan, 2003; Viadero, 2003).

A study conducted by Richard Felder in 1987 (Felder, Silverman, & Soloman, 1991), suggested that individuals have preferences on how they perceive and retain information. His theory is broken down into the following categories: Sensory or Intuitive, Visual or Verbal, Inductive or Deductive, Active or Reflective, and Sequential or Global. He and Linda Silverman developed an instrument called an Index of Learning Styles (ILS) questionnaire with 28 items in 1991. The questionnaire was then given to several hundred students and subjected to a factor analysis. The data was then used to determine where student's strengths and weaknesses fell within these five categories. Based on answers to the questionnaire, he determined student's strengths and weaknesses by where their scores appeared on the measurement scale. If a student fell in between a category, the interpretation was that they were equal on both parts, if their score fell

toward a particular end of the scale they were determined to be higher in one or the other. An example would be a student who scored high (4-7) on the Sensory end of the scale was determined to learn best by sensory stimulation. If they scored high on the Intuitive side of the scale, they were determined to learn best by intuitive stimulation. A score of 1-3 would indicate that they were equal in both.

Research conducted by Tonay Grasha in 1996 categorized students into the following categories: Avoidant, Dependant, Participant, Independent, Competitive, and Collaborative. Avoidant is defined as students who are not enthusiastic about learning; Dependant, as students who are not curious and only want to complete required work; Participant as students who are active and eager to learn; Independent, as students who enjoy working alone in a self-paced environment; Competitive, as students who strive to be better than others in the class; and Collaborative, as students who like to work in groups and share ideas.

Using the Grasha-Riechmann Student Learning Style Scales Inventory tool, Grasha concluded that students attending two-year colleges tended to be more dependent, competitive, and participatory than students attending four-year colleges. Also, in terms of gender, this study concluded that women enrolled in liberal arts tended to be more collaborative; men in physical education, more competitive, avoidant, and independent. In nursing programs, the study concluded that women tended to be more dependant and participatory, than the males. In terms of age, it was determined that students over the age of 25 tended to be more independent and participatory than their younger counterparts. However, it was noted that one learning style was not necessarily used at

all times. Situational factors also seemed to impact the type of learning style that a person preferred at any given time. (Richlin, 2006)

Another study conducted in 1997 at the University of Central Florida looked at personality, learning style, gender, and ethnic characteristics in terms of preferred delivery methods. The population included students enrolled in supplemental instruction (SI) and student's not participating in supplemental instruction (non-SI) at the University of Central Florida. The study began by giving all students Long's Personality Checklist. This checklist categorized students as being aggressive-independent (high energy and confrontational), aggressive-dependent (high energy but apologetic when confronted), passive-independent (low energy but strong-willed), and passive-dependent (low energy and in need of approval)(Warren, 1997). The researchers then gave the students Kolb's Learning Style Inventory (LSI). This LSI categorized students learning styles accommodator (leaders, risk-takers, achievers), assimilator (planners, theorists, and analysts), diverger (creators, artistic, and sensitive), and converger (problem-solvers, deducers, and decision-makers)(Warren 1997). There were 1,013 students of mixed gender and ethnicity who participated in the study. Based on the findings of this study, students of different gender and culture showed inclinations of different learning styles and personality types and traits. This research suggests that in order to obtain maximum learning for a diverse population, a variety of teaching methods must be used.

Yet another study on learning styles conducted in 2003 researched students attending similar universities in different geographical locations. This study was conducted using an Inventory of Learning Processes (ILP) that was developed in 1977 by Schemeck, Ribich, and Ramanaiah (Clump & Skogsbergboise, 2003). This ILP consisted

of four subscales: Deep Processing, Methodical Study, Elaborative Processing, and Fact Retention. The sample included 254 women (126 from a Midwestern University and 128 from a Western University) and 163 men (70 from the Midwest and 93 from the West). The findings were that students from the Midwestern University scored significantly higher than the students from the Western University in both Deep Processing and Methodical Study. It also found that male students scored significantly higher on the Deep Processing subscale and significantly lower on the Methodical Study subscale than female students. There were no significant differences in the Elaborative Processing and the Fact Retention subscales (Clump & Skogsbergboise, 2003). The findings in this study indicated that there were significant differences between gender, race, culture, and geographic location in deep processing skills and methodical study skills. It also indicated that further study on this topic was necessary.

Between 1998 and 2005 teachers from the University of California, Los Angeles conducted tests using the Dunn and Dunn Learning Styles system. Teresa Dybig and Sarah Church used the Dunn and Dunn Learning style model (Dunn 2000) to determine the factors that significantly affected the learning styles of their students. They tested four factors that seemed to differ significantly between groups and individuals. These factors included: global versus analytical processing styles, age, gender, and high versus low academic achievement (Dunn and Griggs, 1998). Through their studies they determined that when mastering complex subject matter, global learners seem to prefer an informal setting and analytical learners prefer a more structured, formal setting. They also determined that the majority of children are global learners; however, learning styles often change with age. Children tend to prefer working with peers and an authoritative

teacher, while older students often prefer to work alone and have a collegiate style teacher. In addition, gender seems to have an impact on learning preferences. Boys are more comfortable with peer relations and non-conformity, while girls tend to be more auditory and work best in a structured environment. Finally, high versus low academic achievement also indicated learners had varied learning styles and responded to different teaching strategies (Church and Dybvig, 2004-2005).

On the opposing side of the LS and MI theories was a paper written by Perry Klein (Klein, 2003). In this article Klein argued that educators have been too quick to buy into these theories. While he agreed that cognitive resources and curriculum are diverse in kind, he disagreed with the assumption that curriculum and varied cognitive abilities correspond on a one-to-one level. Klein's definition of the term "learning style" is "the qualitative differences among individual student's habits, preferences, or orientation toward learning and studying." He disagreed with a visual/verbal topology where these tendencies are opposing forces. According to Klein, consistent research findings show that most students preferred both visual and verbal or neither. He maintained that most students have mixed or moderate modalities, rather than a consistent visual or verbal tendency. Klein was also skeptical of the instruments that were used to determine both LS and MI. His argument was that the preferences that students indicate on a survey often disagree with their real-life choices. To emphasis this point, Klein attacked Gardner's theory by stating that in order to process a specific intelligence such as logical/mathematical; several different parts of the brain must work in conjunction with one another. Because Gardner used tests conducted on brain damaged individuals to make conclusions about the different forms of intelligence, Klein

argued that the research was not valid. Based on scientific knowledge of the brain, it has been determined that the left hemisphere is involved in understanding and producing numerical signs, the right hemisphere is involved in understanding numerical concepts, the frontal lobe contributes to planning, and the left parietal lobe and adjacent areas are important to understanding numerical meaning (cited in Klein, 2003). Klein felt that these facts negated the evidence Gardner used to support his theory. Klein proposed a method that combined semiotics with cognitive psychology as providing a richer way of broaching the differences between learning styles and teaching methods.

In an attempt to meet the needs of diverse populations, many colleges and universities have experimented with a hybrid or blended delivery approach (Brooks, 2003; Dziuban, Hartmann,& Moskal, 2004; UCF, 2005). This approach combines traditional face-to-face instruction with an online component. The hope is that this type of delivery will meet the flexibility needs of online learners, but still maintain the community aspect of the classroom (Brooks, 2003). Many students take online courses because of time-commitments, distance, etc. Their schedules do not allow them to attend traditional face-to-face courses. The problem has been that many of these students are not true on online learners and often lack a sense of community in this environment (Dziuban, Hartman, Moska, 2004). Much of the research has indicated that success and retention rates have been positively impacted by using a hybrid or blended approach to learning.

One study conducted by the University of Milwaukee compared online learning, traditional face-to-face learning, and hybrid learning. The results concluded that students

seemed to have greater success and learned more in the hybrid format, than either the face-to-face, or the online method of delivery (Aycock, Garnham & Kaleta, 2002).

A study conducted by the University of Central Florida came to the same conclusion. They found that students enrolled in their hybrid/blended courses had better grades and retention rates than those enrolled in their traditional face-to-face courses (UCF, 2005).

Another study conducted by a four-year Midwestern college involved 41 undergraduate students. Twelve students were enrolled in a hybrid course and the other 34 students we enrolled in an online only course. This study looked at the positive and negative results of hybrid delivery. They found that the face-to-face contact, online, and instructor availability were stated as being positive. On the negative side; rigid schedules, technical problems, and internet access were cited. The physical presence of the instructor was considered positive, however, scheduled meeting times were sometimes considered inconvenient. The online only students felt that the flexibility in scheduling and being able to work from anywhere was a positive factor, but on the negative side they often felt lost in cyberspace. They also did not like the delays in instruction and student communication, and often felt that the instructor didn't really get to know them. Overall, this study concluded that the online learners had more negative experiences than the hybrid learners. Most of the hybrid learners felt that the delivery method used met their learning style, attention spans, and life-style needs. However, some of the online students also felt this way. In conclusion, it was determined that it is up to the student to find the best match for their learning and life styles (Mansour & Mupinga, 2007).

A quote from Judy Willis, MD emphasizes the importance of addressing individual learning styles; she states "The Principal goal for all students is to achieve their own highest level of success in supportive classrooms, taught by teachers who give them the tools to overcome obstacles and learn to their fullest potential " (pg 16, Willis, 2007). This statement is another confirmation of how important it is for educators to address the needs of their students, and attempt to find the best delivery methods to meet these needs.

Summary

The State Technical Colleges' mission is to provide education and training to individuals that allow them to succeed in a chosen profession. Based on the 18 years of experience of this researcher, many students attending a technical college have previously been considered at-risk students, have been away from formal education for a long period of time, or have had to travel long distances to attend. These students are of both genders and come from varied cultural and economic backgrounds. Because of these factors, it is important that the curriculum provided through the Technical College System meets the needs of the student body. With the varied backgrounds of the students, it is presumptuous to assume that standard teaching methods will accommodate all students. Because the research has indicated that further research on student learning styles and teaching methods was warranted, adult students attending a technical college should be a good representation of whether or not modifying teaching strategies to accommodate different learning styles is justified.

Chapter III: Methodology

Introduction

The purpose of this study was to determine whether alternative teaching strategies would have an impact on student success rates. This study was conducted on students enrolled in the Accounting I at Chippewa Valley Technical College. This chapter includes a detailed account of the sample selection process, testing instruments, data collection techniques, and the data analysis procedures that were used for this study. The chapter will conclude with a listing of limitations to the study.

Sample

The participants in this study were students enrolled in Accounting I at Chippewa Valley Technical College. From this population the sample selected was students enrolled in Accounting I, during the 2007, fall semester. This sample included male and female students as well as students of different ethnic and socio-economic backgrounds. The typical class size for this sample is between 20 and 25 students. Students participating in this study were enrolled in the following program majors: Accounting, Business Management, Hotel and Restaurant Management, and Marketing.

Because these students have chosen different career paths, it is likely that they don't all share the same learning preferences. Most accounting professions deal with factual, black and white, information. Many management and marketing careers look for people who can think creatively and make decisions that are not always definitive. Because these required traits are different, it would make sense that these individuals have different learning needs. A stereotypical accountant would be a person who tends to think in a linear manner. Everything is done in steps and the result is generally either

right or wrong. A marketing or management person would stereotypically be a person who looks less at linear steps, and more at the whole picture. This type of person might not learn best using a step-by-step approach. They are also not always satisfied with black and white answers. Keeping these personality traits in mind, it would stand to reason that individuals seeking out these different career paths might require different teaching methods in order to optimize their learning.

The first population of students participating in the study was given 60% of their instruction through instructor-led training in the classroom, and 40% of their instruction using online/interactive curriculum. This population included students enrolled in Accounting, Business Management, Marketing, and Hotel Restaurant Management.

The second population of students participating in the study was given 100% instruction through instructor –led training in the classroom. This population included students enrolled in Accounting, Business Management, and Marketing.

This study examines the level of student achievement on identical assignments and exams given throughout the semester. It also looks at factors such as location from campus, age, gender, ethnicity, and technological ability as factors contributing to the success or failure rates. This study searched for common factors that might indicate whether a student would achieve greater success in an instructor-led environment or in a hybrid environment. Both sample groups were students enrolled in Accounting I at Chippewa Valley Technical College during the fall 2007 semester. The majority of these students were between the ages of 18 and 26 years old; with a few exceptions. The population of each group included both female and male students. Ethnic diversity was

minimal in one group, and non-existent in the other. Both groups varied in the distance traveled to school; however, the hybrid students tended to live further from campus.

To ensure that the students were assessed in the same manner, they were given identical graded assignments and exams. They also had the same instructor, and did the same hands-on activities in the classroom. The face-to-face students conducted discussions in the classroom, and received instructor led lectures on accounting principles and theory. The hybrid students, utilized a discussion board for class discussions, and received lectures on theory and principles using multi-media and internet resources. All students were given assessments in the classroom.

The literature review combines research on individual learning styles, with research on various delivery methods. The purpose of the review was to make a connection between factors that contribute to preferred learning styles and best teaching practices for optimal student success.

Instrumentation

A self-developed survey instrument (Appendix A) was used to obtain information from students in both classes. Questions on the survey were designed to look at preferred learning styles and teaching methods; based on research from the literature review on learning differences between age, gender, ethnicity, distance, and technological abilities. The survey given to both classes consisted of 15 questions designed to obtain information about the population. Survey questions 6-8 and 10-11were designed to obtain general information on preferred learning styles. Survey questions 1-5, and 9 addressed demographics of the population. Survey questions 11-13 referred to students preferred

teaching and learning tools. Questions 14 and 15 addressed achievement rate and delivery method used.

The goal of the instrument was to find a way to analyze student success by matching preferred learning styles with preferred teaching methods. Variables included age, gender, ethnicity, distance, technological abilities, and academic major. These variables were cross-referenced with student achievement for the intent of determining if there seemed to be tendencies toward preferred learning styles and teaching methods that immerged. For example, in terms of achievement, was there any difference between female students enrolled in a face-to-face class and those enrolled in a hybrid course.

Data Collection

Permission to use information regarding individual learning styles and assessment data was obtained from all participants.

A survey identifying student's age, gender, ethnicity, distance from campus, technological ability and academic major, was given to gather the demographic backgrounds of the student population. In addition, the study examines identical assessment instruments used in both the traditional classroom and the hybrid format.

Data Analysis

For analysis purposes all test scores were divided into A, B, C, D, and F categories. Percentages were then used to determine in which category each test score would fall. The percentages were as follows: 95-100% = A, 88-94 % = B, 80-87% = C, 70-79% = D, and below 70% = F. A percentage of the total participants taking the exam was then determined for each category. For example, 30% were A's, 40% were B's, and so on.

After test scores from each unit of instruction were categorized, the aggregate test scores of students from the classroom population were compared with those of the hybrid population. This analysis was then used to determine if there was any significant difference in the achievement of the students who received instructor-led instruction and those that received the hybrid method of instruction based on factors such as age, distance from campus, gender, technological ability, and academic major of the student.

Limitations

One limitation of this study was that the sample only included students enrolled in Accounting I at Chippewa Valley Technical College in the fall 2007 semester. Another limitation of the study was that the survey was optional which limited the number of responses given. A third limitation was the total population only consisted of two classes of less than 30 students each, which may not be a definitive measure of the difference between all instructor-led and hybrid courses. A fourth limitation was that the courses consisted of inconsistent proportions of students enrolled in the various academic majors, ages, genders, and ethnicity.

Chapter IV: Analysis of Results

The purpose of this study was to identify preferred learning styles and teaching methods of students enrolled in Accounting I at CVTC during the fall semester of 2007. The intent of the study was to determine if there were differences in success rates between identified learning and teaching preferences and delivery methods used.

Data was collected from two separate Accounting I classes. One class was given 100% face-to-face instruction; with the other given 60% face-to-face and 40% online instruction. The first of two pieces of data collected was a 15 question survey given to students in each course. The survey was given to obtain information on the demographics, learning preferences, and teaching preferences of the individuals in each class. The second piece of data collected was the final grades of each individual in both courses. The face-to-face section consisted of 24 enrolled students, and the hybrid section consisted of 21 enrolled students. Survey completion rates are listed in Table 1 below.

Table 1

Survey Return Rates

Delivery Style	Total Enrollment	Completed surveys	Percent of completion
Face-to-face Course	24	21	87.5%
Hybrid Course	21	18	85.7%

The survey polled students in each section for the following information: Distance from campus, gender, age, ethnicity, school major, delivery preferences,

learning preference, technology benefits, technological abilities, communication preferences, and educational tools they considered to be helpful.

The first question on the survey polled students on the distance that they lived from the CVTC campus. This question was asked to determine the demographic trends of the students in each of the courses. From these two populations the hybrid students tended to live further away than the face-to-face students. From the hybrid group 39% lived within 10 miles compared to 71% of the face-to-face group. Table 2 below shows the survey results of the distance from campus, between the hybrid and face-to-face sections of Accounting I.

Table 2

Distance from Campus

	Less than 10 Miles	10-20 Miles	20-30 Miles	Over 30 Miles	Total Students
Hybrid Class	7 (38.9%)	3 (16.7%)	4 (22.2%)	4 (22.2%)	18 (100.0%)
Face-to-Face Class	15 (71.4%)	5 (23.8%)	1 (4.8%)	0 (0.0%)	21 (100.0%)
Totals	22 (56.4%)	8 (20.5%)	5 (12.8%)	4 (10.3%)	39 (100.0%)

Question 2 on the survey polled students on their gender. This question was designed to obtain the difference in gender equity between the two courses. In both sections there were more female students than male students. In the hybrid class 83% were female and 17% were male. In the face-to-face class 62% were female and 38% were male. Table 3 below shows the difference in gender equity between the hybrid and the face-to-face classes.

Table 3

Gender of Students

	Male	Female	Total
Hybrid Class	3 (16.7%)	15 (83.3%)	18 (100.0%)
Face-to-Face Class	8 (38.1%)	13 (61.9%)	21 (100.0%)
Totals	11 (28.2%)	28 (71.8%)	39 (100.0%)

Question 3 of the survey polled students on their age group. This question was designed to obtain the differences in age group between the two sections. The majority of students in both sections were between 18 and 26 years old, however; the diversity of ages was greater in the hybrid group. All students in the face-to-face group were under 36 years old, while 17% of the hybrid students were over the age of 36 years. Table 4 below shows the results of age group differences between the hybrid and face-to-face sections.

Table 4

Age of students

	18 - 26 Years	27-36 Years	36-46 Years	Over 46 Years	Total Students
Hybrid Class	13 (72.2%)	2 (11.1%)	1 (5.6%)	2 (11.1%)	18 (100.0%)
Face-to-Face Class	19 (90.5%)	2 (9.5%)	0 (0.0%)	0 (0.0%)	21 (100.0%)
Totals	32 (82.1%)	4 (10.2%)	1 (2.6%)	2 (5.1%)	39 (100.0%)

Question 4 of the survey polled students on their ethnicity. This question was used to obtain the ethnic diversity between the two sections. The majority of students in

both sections were white caucasian, however; the diversity of ethnicity was slightly greater in the face-to-face group. 100% of the students in the hybrid group were white caucasian compared to 81% in the face-to-face group. The face-to-face group also had 4.8% of the students in the black ethnicity category, 9.5% in the asian ethnicity category, and 4.8% in the other ethnicity category. Table 5 below shows the results of ethnicity between the hybrid and face-to-face sections of Accounting I.

Table 5

Ethnicity of Students

	White/ Caucasian	Black	Hispanic	Asian	Other	Total Students
Hybrid Class	18 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	18 (100.0%)
Face-to-Face Class	17 (81.0%)	1 (4.8%)	0 (0.0%)	2 (9.5%)	1 (4.8%)	21 (100.0%)
Totals	35 (89.7%)	1 (2.6%)	0 (0.0%)	2 (5.1%)	1 (2.6%)	39 (100.0%)

Question 5 of the survey polled students on their major at CVTC. This question was designed to determine the diversity of student majors in each section. This question was used to obtain information on the differences in majors between the two courses. The hybrid students were evenly distributed between accounting, business management, and other majors; while the face-to-face group consisted of 45.5% accounting students, 40.9% business management students, 4.5% marketing students, and 9.1% other majors. Table 6 below shows the results of student major between the hybrid and face-to-face sections of Accounting I.

Table 6

Student Majors

	Accounting	Business Management	Marketing	Other	Total Students
Hybrid Class	6 (33.3%)	6 (33.3%)	0 (0.0%)	6 (33.4%)	18 (100.0%)
Face-to-Face Class	10 (45.5%)	9 (40.9%)	1 (4.5%)	2 (9.1%)	22 (100.0%)
Totals	16 (40.0%)	15 (37.5%)	1 (2.5%)	8 (20.0%)	40 (100.0%)

Face -to-face section had one double major Marketing and Business Management

Question 6 of the survey polled students on their delivery preferences. This question was designed to determine the diversity of delivery preferences within each section. From the hybrid group 44.4% preferred face-to-face instruction and 55.6% preferred a combination of methods. In the face-to-face group 71.4% preferred face-to-face instruction, 4.8% selected online instruction, and 23.8% of the students listed a combination of methods as their preference. Table 7 below shows the results of delivery preference.

Table 7

Delivery Preference

	Face-to Face	Online	Print Based	Combination/ Other	Total Students
Hybrid Class	8 (44.4%)	0 (0.0%)	0 (0.0%)	10 (55.6%)	18 (100.0%)
Face-to-Face Class	15 (71.4%)	1 (4.8%)	0 (0.0%)	5 (23.8%)	21 (100.0%)
Totals	23 (59.0%)	1 (2.6%)	0 (0.0%)	15 (38.4%)	39 (100.0%)

Question 7 of the survey polled students on their most effective way to learn. This question was designed to determine the diversity of learning preferences in each section. The majority of students in both classes listed doing/hands-on as their preferred learning style. In the hybrid group, 80% of the students preferred doing/ hands-on instruction, 15% seeing and hearing about the content, and 5% reading about the content. In the face-to-face group 68.2% preferred doing/hands-on instruction, and 31.8% preferred seeing and hearing about the content. Table 8 below shows the results of the learning preferences between the hybrid and the face-to-face sections of Accounting I.

Table 8

Learning Preferences

	Seeing/ Hearing about	Reading About	Hearing About	Doing/ Hands-on	Total Students
Hybrid Class (2 multiple responses)	3 (15.0%)	1 (5.0%)	0 (0.0%)	16 (80.0%)	20 (100.0%)
Face-to-Face Class (1 multiple response)	7 (31.8%)	0 (0.0%)	0 (0.0%)	15 (68.2%)	22 (100.0%)
Totals	10 (22.7%)	1 (2.3%)	0 (0.0%)	31 (70.5%)	42 (100.0%)

Question 8 of the survey polled students on whether technology was considered as an enhancement to their learning. This question was designed to determine within each section; if students felt technology enhanced their learning. In the hybrid group 66.7% of the students polled felt that technology strongly enhanced their learning, compared to only 4.8% of the face-to-face students. Of the hybrid students 33.3% agreed that technology enhanced their learning, compared to 90.5% in the face-to-face class. None of the hybrid disagreed that technology enhanced their learning, while 4.8% of the face-

to-face class felt that technology did not enhance their learning at all. Table 9 below shows the results of enhancement using technology.

Table 9

Technology Enhances Learning

	Strongly Agree	Agree	Disagree	Strongly Disagree	Total Students
Hybrid Class	12 (66.7%)	6 (33.3%)	0 (0.0%)	0 (0.0%)	18 (100.0%)
Face-to-Face Class	1 (4.8%)	19 (90.5%)	1 (4.8%)	0 (0.0%)	21 (100.0%)
Totals	13 (33.3%)	25 (64.1%)	1 (2.6%)	0 (0.0%)	39 (100.0%)

Question 9 of the survey polled students on their perceived technological ability. This question was designed to determine the technological ability differences between each section. The students in the hybrid section rated themselves higher in technological ability. Of the hybrid students, 55.6% compared to only 9.5% of the face-to-face students felt that they were "very good" with technology. In the hybrid section 33.3% stated they were only "good" with technology, compared with 85.7% of the face-to-face students. Of the hybrid students, 11.1% stated that they were only "fair" with technology compared to 0% in the face-to-face section. Finally, 0% of the hybrid students stated that their technological ability was "poor" compared to 4.8% of the face-to-face group. Table 10 below shows the results of technological ability between the hybrid and the face-to-face population.

Table 10

Technological Ability

	Very Good	Good	Fair	Poor	Total Students
Hybrid Class	10 (55.6%)	6 (33.3%)	2 (11.1%)	0 (0.0%)	18 (100.0%)
Face-to-Face Class	2 (9.5%)	18 (85.7%)	0 (0.0%)	1 (4.8%)	21 (100.0%)
Totals	12 (30.8%)	24 (61.5%)	2 (5.1%)	0 (100.0%)	39 (100.0%)

Question 10 of the survey polled students on their communication preferences. This question was designed to determine the differences in communication preference between each section. The hybrid students appeared to be more diverse in their communication preference, with 57.1% preferring face-to-face, 14.3% E-Mail, 9.5% online discussion, 4.8% telephone, and 14.3% other or combination. The face-to-face students seemed to prefer face-to-face communication; with 66.7% selecting this response. Of the face-to-face group 23.8% chose E-Mail, 9.5% online discussion, 0% telephone, and 0% other or combined. Table 11 below shows the results of communication preferences between the hybrid and face-to-face classes.

Table 11

Communication Preference

	Face-to-Face	E-Mail	Online Discussion	Telephone	Other	Total Students
Hybrid Class Multiple Responses	12 (57.1%)	3 (14.3%)	2 (9.5%)	1 (4.8%)	3 (14.3%)	21 (100.0%)
Face-to-Face Class	14 (66.7%)	5 (23.8%)	2 (9.5%)	0 (0.0%)	0 (0.0%)	21 (100.0%)
Totals	28 (66.7%)	8 (19.0%)	4 (9.5%)	1 (2.4%)	3 (7.1%)	42 (100.0%)

Question 11 of the survey polled students on whether or not they found an online discussion board to be helpful in Accounting I. This question was designed to determine the differences between the hybrid and face-to-face sections of Accounting I, in terms of the value they placed on online discussions. The hybrid section stated that the online discussion board was an enhancement to their learning; 66.7% of the students felt that an online discussion board enhanced their learning, compared with only 38.1% of the students who chose face-to-face delivery. Table 12 below shows the results between the hybrid and face-to-face sections in terms of online discussions.

Table 12

Online Discussion Boards are a Helpful Tool

	Yes	No	Total Students
Hybrid Class	12 (66.7%)	6 (33.3%)	18 (100.0%)
Face-to-Face Class	8 (38.1%)	13 (61.9%)	21 (100.0%)
Totals	20 (51.3%)	19 (48.7%)	39 (100.0%)

Question 12 of the survey polled students on whether or not they found spreadsheet programs to be helpful in Accounting I. This question was designed to determine the differences between each section in terms of the value they placed on using spreadsheet software as a tool in Accounting I. The face-to-face section seemed to place more value on the use of a spreadsheet program in Accounting I; with an 85% positive response. In the hybrid section, only 72.2% of the students responded positively to this statement. Table 13 below shows the results between the hybrid and face-to-face group in terms of how useful they found a spreadsheet program to be as a tool in Accounting I.

Table 13

Spreadsheet Programs are a Useful Tool

	Yes	No	Total Students
Hybrid Class	13 (72.2%)	5 (27.8%)	18 (100.0%)
Face-to-Face Class (One No Response)	17 (85.0%)	3 (15.0%)	21 (100.0%)
Totals	30 (78.9%)	8 (21.1%)	38 (100.0%)

Question 13 of the survey polled students on whether or not they found interactive online quizzes to be helpful in Accounting I. This question was used to obtain information on whether or not students in each course found interactive online quizzes to be helpful to their learning accounting. Of the hybrid students, 83.3% found online quizzes to be helpful; compared to only 19% of the face-to-face students. Table 14 below shows the results between the hybrid and face-to-face group in terms of how useful they found interactive online quizzes to be in Accounting I.

Table 14

Online Quizzes are Helpful in Accounting I

	Yes	No	Total Students
Hybrid Class	15 (83.3%)	3 (16.7%)	18 (100.0%)
Face-to-Face Class	4 (19.0%)	17 (81.0%)	21 (100.0%)
Totals	19 (48.7%)	20 (51.3%)	39 (100.0%)

Question 14 of the survey polled students on whether or not they found the delivery method; face-to-face or hybrid, to be an important factor in their ability to take

Accounting I. This question was designed to determine the differences between the hybrid and face-to-face sections of Accounting I in terms of their ability to attend class. The information was then used to obtain information on whether or not students in each course found the delivery option they chose to be necessary to their completion of the course. In the hybrid section 66.7% found the delivery option important to their ability to complete the course, compared to 85% of the face-to-face section. Table 15 below shows the results between the hybrid and face-to-face group in terms of how necessary the delivery method was to their continuation in Accounting I.

Table 15

Delivery Method is Important to My Continuation of Accounting I

	Yes	No	Total Students
Hybrid Class	12 (66.7%)	6 (33.3%)	18 (100.0%)
Face-to-Face Class (One No Response)	17 (85.0%)	3 (15.0%)	21 (100.0%)
Totals	29 (76.3%)	9 (23.7%)	38 (100.0%)

Question 15 of the survey polled students on whether or not they found the delivery method; face-to-face or hybrid, to be an important factor to their success in Accounting I. This question was used to obtain information on whether or not students in each course found the delivery option they chose necessary to their success in Accounting I. In the hybrid section 66.7% found the delivery method important to their success in the course, compared to 90.5% of the face-to-face section. Table 16 below shows the results between the hybrid and face-to-face group in terms of how delivery method was a factor in their success in Accounting I.

Table 16

Delivery Method is Important to My Success in Accounting I

	Yes	No	Total Students
Hybrid Class	12 (66.7%)	6 (33.3%)	18 (100.0%)
Face-to-Face Class	19 (90.5%)	2 (9.5%)	21 (100.0%)
Totals	31 (79.5%)	8 (20.5%)	39 (100.0%)

To determine if there were differences in delivery preferences, learning preferences, technology preferences, and communication preferences of Accounting students, several questions need to be reviewed. Questions 6, 7, 8, and 10 of the survey were analyzed to determine the difference in delivery preference. Question 6 asked for the students preferred delivery method. The results of this question showed that students in both the hybrid and the face-to-face sections were split. A combination of delivery was preferred by the hybrid section at 55.6% compared to 44.4% who preferred face-to-face delivery. In the face-to-face section, 59.0% selected face-to-face, 2.6% selected online, and 38.4% chose a combination of delivery methods. Table 17 below summarizes students preferred delivery methods. Question 7 asked the students what their preferred learning style was. In the hybrid section, 80.0% preferred doing/hands-on, 15.0% chose seeing/hearing about, and 5.0% chose reading about. In the face-to-face section, 68.2% chose doing/hands-on and 31.8% chose seeing/hearing about. Question 8 asks the student if technology enhances their learning. In the hybrid section, 100.0% either agreed or strongly agreed. In the face-to-face section 97.4% agreed or strongly agreed, and 2.5% disagreed that technology enhanced their learning. Question 10 asked the students what

their preferred communication method was. In the hybrid section, 57.1% chose face-to-face, 14.3% e-mail, 9.5% online discussion, 4.8% telephone, and 14.3% chose a combination. In the face-to-face section, 66.7% chose face-to-face, 19.0% e-mail, and 9.5% chose online discussion. Table 17 below summarizes student's delivery preferences.

Table 17

Delivery Preference

Delivery Preference	Hybrid	Face-to-Face
Question 6 - Delivery Preference	56%	44%
Question 7 - Preferred Learning Style		
Hands-On	80%	68%
Seeing and Hearing	15%	32%
Reading	8%	0%
Question 8 - Technology Enhances Learning		
Agree	100%	97%
Question 10 - Preferred Communication		
Face-to-Face	57%	66%
E-Mail	14%	19%
Online delivery	10%	10%
Telephone	5%	0%
Combination	14%	0%

To determine if there were differences in learning style based on gender, age and ethnicity, student major or technological ability; multiple questions need to be reviewed. Questions 2, 3, 4, 5, and 9 on student demographics need to be compared with questions 6, 7, 8, and 10 on student learning preferences. To determine if there were differences in learning preferences based on age, gender, ethnicity, student major, or technological ability, questions 2-5 and 9 of the survey were compared with questions 6-8 and 10; delivery preferences, learning preferences, technology preferences, and communication preferences. These questions compared the student's demographic information with their learning preferences. Question 2 asked for student gender. Student gender was then compared with delivery preference, learning preference, technology preference, and communication preference. In the male population, delivery preferences were 81.8% face-to-face and 18.2% combination. Learning preferences were 72.7% doing/hands-on, and 27.3% seeing/hearing about. Technology preference was 100.0% favorable. Communication preferences were 81.8% face-to-face and 18.2% email. In the female population, delivery method was 50.0% face-to-face, 3.6% online, and 46.4% combination. Learning preference was 79.3% doing/hands-on, 17.2% seeing/hearing about, and 3.4% reading about. Technology preference was 96.4% favorable and 3.6% unfavorable. Communication preference was 60.7% face-to-face, 17.9% email, 10.7% online discussion, and 10.7% other or combination. Table 18 below summarizes preferences by gender.

Table 18

Preferences by Gender

Delivery Preference				
Gender	Face-to-face	Online	Print-Based	Combination
Male	81.8%	0.0%	0.0%	18.2%
Female	50.0%	3.6%	0.0%	46.4%

Learning Preference				
Gender	Seeing/Hearing	Reading	Hearing	Doing/Hands-on
Male	27.3%	0.0%	0.0%	72.7%
Female	17.2%	3.4%	0.0%	79.3%

Communication Preference					
Gender	Face-to-Face	E-Mail	Online Discussion	Telephone	Other/ Combination
Male	81.8%	18.2%	0.0%	0.0%	0.0%
Female	60.7%	17.9%	10.7%	0.0%	10.7%

Technology Preference		
Gender	Enhances Learning	Does not Enhance Learning
Male	100.0%	0.0%
Female	96.4%	3.6%

Question 3 of the survey asks for student age. Age ranges were 18-26, 27-36, 36-46, and over 46. In the 18-26 age range, student delivery preferences were 61.5% combination and 38.5% face-to-face. In the 27-36 age range, student delivery preferences were 50.0% face-to-face, and 50.0% combination. In the 36-46 age range, student delivery preferences were 100.0% face-to-face. In the over 46 age range, the delivery preferences were 50.0% face-to-face and 50.0% combination. In the 18-26 age

rage, learning preferences were 78.1% doing/hands-on, and 21.9% seeing/hearing about. In the 27-36 age range, learning preferences were 75.0% doing/hands-on and 25.0% seeing and hearing about. In the 36-46 age range, learning preferences were 100.0% doing/hands-on. In the over 46 age range, learning preferences were 100.0% doing/hands-on. In the 18-26 age range technology preferences were 96.9% favorable and 3.1% unfavorable. In the 27-36 age range, technology preferences were 100.0% favorable. In the 36-46 age range, technology preferences were 100.0% favorable. In the over 46 age range, technology preferences were 100.0% favorable. In the 18-26 age range communication preferences were 65.6% face-to-face, 21.9% email, 6.3% online discussion, and 6.3% other or combination. In the 27-36 age range, communication preferences were 75.0% face-to-face and 25.0% online discussion. In the 36-46 age range, communication preferences were 100.0% face-to-face. In the over 46 age range, communication preferences were 50.0% face-to-face and 50.0% other or combination. Table 19 below summarizes preferences by age.

Table 19

Preferences by Age

Delivery Preference				
Age	Face-to-face	Online	Print-Based	Combination
18-26	38.5%	0.0%	0.0%	61.5%
27-36	50.0%	0.0%	0.0%	50.0%
36-46	100.0%	0.0%	0.0%	0.0%
over 46	50.0%	0.0%	0.0%	50.0%

Learning Preference

Age	Seeing/Hearing	Reading	Hearing	Doing/Hands-on
18-26	21.9%	0.0%	0.0%	78.1%
27-36	25.0%	0.0%	0.0%	75.0%
36-46	0.0%	0.0%	0.0%	100.0%
over 46	0.0%	0.0%	0.0%	100.0%

Communication Preference

Age	Face-to-Face	E-Mail	Online Discussion	Telephone	Other/ Combination
18-26	65.6%	21.9%	6.3%	0.0%	6.3%
27-36	75.0%	0.0%	25.0%	0.0%	0.0%
36-46	100.0%	0.0%	0.0%	0.0%	0.0%
over 46	50.0%	0.0%	0.0%	0.0%	50.0%

Technology Preference

Age	Enhances Learning	Does not Enhance Learning
18-26	96.9%	3.1%
27-36	100.0%	0.0%
36-46	100.0%	0.0%
over 46	100.0%	0.0%

Question 4 asked for student ethnicity. Categories included: white/caucasian, black, hispanic, asian, and other. The majority of students in both sections were white/caucasian. There was only one student in the black category, two students in the asian category, and one student who stated other. In the white/caucasian category delivery preferences were 54.3% face-to-face, 2.9% online, and 42.9% combination. Learning preferences were 69.4% doing/hands-on, 27.8% seeing/hearing about and 2.8% reading about. In the black category, delivery preference was 100.0% online. Learning preference was 100.0% face-to-face. Technology preference was 100.0% favorable, and

communication preference was 100.0% face-to-face. There were no students in the hispanic category. In the asian category, delivery preference was 100.0% face-to-face. Learning preference was 100.0% doing/hands-on. Technology preference was 100.0% favorable, and communication preference was 50.0% face-to-face and 50.0% email. In the other category the delivery preference was 100.0% face-to-face. Learning preference was 100.0% doing/hands-on. Technology preference was 100.0% favorable and communication preference was 100.0% face-to-face. Table 20 below summarizes preferences by ethnicity.

Table 20

Preferences by Ethnicity

Delivery Preference				
Ethnicity	Face-to-face	Online	Print-Based	Combination
White/Caucasian	54.3%	2.9%	0.0%	42.9%
Black	0.0%	100.0%	0.0%	0.0%
Hispanic	0.0%	0.0%	0.0%	0.0%
Asian	100.0%	0.0%	0.0%	0.0%
Other	100.0%	0.0%	0.0%	0.0%

Learning Preference				
Ethnicity	Seeing/Hearing	Reading	Hearing	Doing/Hands-on
White/Caucasian	27.8%	2.8%	0.0%	69.4%
Black	0.0%	0.0%	0.0%	100.0%
Hispanic	0.0%	0.0%	0.0%	0.0%
Asian	0.0%	0.0%	0.0%	100.0%
Other	0.0%	0.0%	0.0%	100.0%

Communication Preference					
Ethnicity	Face-to-Face	E-Mail	Online Discussion	Telephone	Other/ Combination
White/Caucasian	65.7%	17.1%	8.6%	0.0%	8.6%
Black	100.0%	0.0%	0.0%	0.0%	0.0%
Hispanic	0.0%	0.0%	0.0%	0.0%	0.0%
Asian	50.0%	50.0%	0.0%	0.0%	0.0%
Other	100.0%	0.0%	0.0%	0.0%	0.0%

Technology Preference		
Ethnicity	Enhances Learning	Does not Enhance Learning
White/Caucasian	97.1%	2.9%
Black	100.0%	0.0%
Hispanic	100.0%	0.0%
Asian	100.0%	0.0%
Other	100.0%	0.0%

Question 5 asked the students for their major. Student major categories were Accounting, Business Management, Marketing, and other. In the Accounting major the delivery preferences were 62.5% combination and 37.5% face-to-face. Learning Preferences were 87.5% doing/hands-on and 12.5% seeing/hearing about. Technology Preference was 100.0% favorable, and communication preferences were 43.8% face-to-face, 37.5% email, and 18.8% other or combination. In the Business Marketing major the delivery preferences were 73.3% face-to-face, 6.7% online, and 20.0% combination. Learning preferences were 80.0% doing/hands-on and 20.0% face-to-face. Technology preferences were 93.3% favorable and 6.7% unfavorable and communication preferences were 86.7% face-to-face and 13.3% online discussion. In the marketing major delivery preference was 100.0% face-to-face. Learning preference was 100.0% doing/hands-on. Technology preference was 100.0% favorable, and communication preference was

100.0% face-to-face. Finally, in the other category, the delivery preferences were 75.0% face-to-face and 25.0% combination. The learning preferences were 55.6% doing/hands-on, 33.3% seeing/hearing about, and 11.1% reading about. Table 21 below summarizes preferences by student major.

Table 21

Preferences by Student Major

Delivery Preference by Student Major				
Student Major	Face-to-face	Online	Print-Based	Combination
Accounting	37.5%	0.0%	0.0%	62.5%
Business Management	73.3%	6.7%	0.0%	20.0%
Marketing	100.0%	0.0%	0.0%	0.0%
Other	75.0%	0.0%	0.0%	25.0%

Learning Preference by Student Major				
Student Major	Seeing/Hearing	Reading	Hearing	Doing/Hands-on
Accounting	12.5%	0.0%	0.0%	87.5%
Business Management	20.0%	0.0%	0.0%	80.0%
Marketing	0.0%	0.0%	0.0%	100.0%
Other	33.3%	11.1%	0.0%	55.6%

Communication Preference by Student Major					
Student Major	Face-to-Face	E-Mail	Online Discussion	Telephone	Other/ Combination
Accounting	43.8%	37.5%	0.0%	0.0%	18.8%
Business Management	86.7%	0.0%	13.3%	0.0%	0.0%
Marketing	100.0%	0.0%	0.0%	0.0%	0.0%
Other	75.0%	12.5%	12.5%	0.0%	0.0%

Technology Preference by Student Major

Student Major	Enhances Learning	Does not Enhance Learning
Accounting	100.0%	0.0%
Business Management	93.3%	6.7%
Marketing	100.0%	0.0%
Other	100.0%	0.0%

Question 9 asked students their technological ability. Categories included: very good, good, fair, and poor. Student technological ability was then compared with delivery preference, learning preference, technology preference, and communication preference. Students that reported being very good with technology had the following delivery preferences: 66.7% preferred a combination and 33.3% face-to-face delivery. Learning preferences were 69.2% doing/hands-on, 23.1% seeing/hearing about, and 7.7% reading about. Technological preferences were 100.0% favorable, and communication preferences were 33.3% face-to-face, 25.0% email, 16.7% online discussion, and 25.0% other or combination. Students, who reported their technological ability as good, had the following delivery preferences: 79.2% face-to-face and 20.8% combination. Learning preferences were 83.3% doing/hands-on and 16.7% seeing/hearing about. Technology preferences were 95.8% favorable and 4.2% unfavorable, and communication preferences were 83.3% face-to-face and 16.7% email. Students reporting a technological ability of fair had the following delivery preferences: 100.0% chose a combination. Learning preferences were 100.0% doing/hands-on. Technology preferences were 100.0% favorable, and communication preferences were 100.0% face-to-face. Finally, the one

student who reported their ability as being poor chose online delivery as their preference, seeing/hearing about as their learning preference, favorable as their technology preference, and online discussion as their communication preference. Table 22 below summarizes preferences by technological ability.

Table 22

Preferences by Technological Ability

Delivery Preference by Technological Ability				
Technological Ability	Face-to-face	Online	Print-Based	Combination
Very Good	33.3%	0.0%	0.0%	66.7%
Good	79.2%	0.0%	0.0%	20.8%
Fair	0.0%	0.0%	0.0%	100.0%
Poor	0.0%	100.0%	0.0%	0.0%

Learning Preference by Technological Ability				
Technological Ability	Seeing/Hearing	Reading	Hearing	Doing/Hands-on
Very Good	23.1%	7.7%	0.0%	69.2%
Good	16.7%	0.0%	0.0%	83.3%
Fair	0.0%	0.0%	0.0%	100.0%
Poor	100.0%	0.0%	0.0%	0.0%

Communication Preference by Technological Ability					
Technological Ability	Face-to-Face	E-Mail	Online Discussion	Telephone	Other/ Combination
Very Good	33.3%	25.0%	16.7%	0.0%	25.0%
Good	83.3%	16.7%	0.0%	0.0%	0.0%
Fair	100.0%	0.0%	0.0%	0.0%	0.0%
Poor	0.0%	0.0%	100.0%	0.0%	0.0%

Technology Preference by Technological Ability

Technological Ability	Enhances Learning	Does not Enhance Learning
Very Good	100.0%	0.0%
Good	95.8%	4.2%
Fair	100.0%	0.0%
Poor	100.0%	0.0%

To determine what tools work best for accounting students questions 11-13 of the survey were evaluated. Question 11 asked the students if they found using an online discussion board helpful to learning accounting. In the hybrid section, 66.7% stated yes and the other 33.3% chose no. In the face-to-face section, 28.6% chose yes, and 71.4% stated no. Question 12 of the survey asked students if they found using spreadsheet software to be helpful in learning accounting. In the hybrid section, 72.2% said yes and 27.8% said no. In the face-to-face section, 85.0% said yes, and 15.0% said no. Question 13 of the survey asked students if they found interactive online quizzes to be helpful for learning accounting. In the hybrid section, 83.3% said yes, and 16.7% said no. In the face-to-face section, 19.0% said yes and 81.0% said no.

To determine if achievement rates increase using alternate delivery formats questions 1; distance from campus and 14-15; delivery method importance, and delivery method success were compared with final grades for the course. The following were the results of question 1 on the survey; distance from campus and final grades. In the hybrid course, students who lived less than 10 miles from the campus had the following grades: 57.1% received A's, 14.3% received B's, 14.3% received C's, and 14.3% received D's. In the students living 10-20 miles from campus, 66.7% received A's and 33.3% received

B's. Students living 20-30 miles from campus received the following grades: 25.0% received A's, and 75.0% received B's. The students living in the over 30 mile range received the following scores: 50.0% received A's, 25.0% received B's, and 25.0% received C's. In the face-to-face section; students who lived less than 10 miles from campus had the following results: 46.7% received A's, 40.0% received B's, and 13.3% received C's. Student who lived between 10 and 20 miles from campus received the following: 20.0% A's, 20.0% B's, 20.0% C's and 40.0% D's. The face-to-face students living between 20 and 30 miles from campus had the following results: 100.0% A's. There were no students in the face-to-face group that lived over 30 miles from campus. Question 14 of the survey asked students if the hybrid or face-to-face delivery method was an important factor in their ability to attend classes. In the hybrid section, 66.7% said yes and 33.3% said no. Grades of the hybrid students who stated that delivery was an important factor were: 58.3% received A's, 33.3% received B's, and 8.3% received C's. The hybrid students who stated that delivery method was not an important factor received the following grades: 33.3% received A's, 33.3% received B's, 16.7% received C's, and 16.7% received D's. In the face-to-face section, 85.0% yes and 15.0% said no delivery method was important factor. Grades of the face-to-face students who said that the delivery method was an important face were as follows: 47.0% received A's, 29.4% received B's, 17.7% received C's, and 5.9% received D's. Grades of the face-to-face students who said the delivery method was not important were: 33.3% A's, 33.3% B's and 33.3% D's. Question 15 of the survey asked the students if the delivery method they chose was important to their success in Accounting. In the hybrid section, 66.7% stated yes, and 33.3% stated no. Grades of the hybrid students who said delivery method was

an important factor in their success in Accounting were: 58.3% A's, 33.3% B's and 8.33% C's. Grades of the hybrid students who said that delivery method was not important to their success in Accounting were: 33.3% A's, 33.3% B's, 16.7% C's and 16.7% D's. In the face-to-face section, 90.0% stated yes, and 10.0% stated no, that delivery method was an important factor in their success in Accounting. Grades of the face-to-face students who said that delivery method was an important factor to their success were: 47.4% A's, 31.6% B's, 15.8% C's and 5.3% D's. Grades of the face-to-face students who stated that delivery method was not an important factor to their success in Accounting were: 50.0% B's and 50.0% D's.

Chapter V: Summary, Conclusions, and Recommendations

Due to a growing diversity in students, colleges are looking for new ways to provide delivery of instruction that will meet the needs of the students of the 21st century. In the past traditional classroom instruction and print-based or correspondence delivery were the only options available to students. In more recent years, online learning has become a popular method of delivering instruction. Studies have shown that due to the diversity in students, and the globalization of the populations attending college, traditional face-to-face instruction does not meet the needs of all learners. However, print-based, and online instruction often leaves the learner feeling lost, and success rates are often low. In an effort to provide the quality of face-to-face instruction and still accommodate some of the flexibility of online or print-based learning; a new hybrid method of delivery has been developed. This method combines part face-to-face instruction with part online instruction. The purpose is to give students the feeling of community that they would get in the classroom, but at the same time allow them to attend classes that fit with their work schedules, locations, etc. Because based on several studies, success rates have tended to be higher in the classroom than in online or print-based courses; the hope is that a blended format will increase student success.

Summary

The purpose of this study was to compare student learning styles and achievement between a hybrid environment, with that of student learning styles and achievement in a traditional classroom environment. Two sections of Accounting I were compared. Both the hybrid and the traditional classroom sections completed the same lessons and assignments over one semester. The main differences were that the students in the

classroom were given classroom lectures, quizzes, and discussions, and the hybrid students watched lectures, used a discussion board and took interactive quizzes online. Both sections were given the same assessments in the classroom. In the hybrid section the students met three hours per week and spent the other two hours per week doing online activities. The traditional classroom students received in-class lectures on the content, participated in classroom discussions, and were given classroom quizzes. The two delivery methods were then compared to see if there were differences in student learning styles and the delivery methods used.

The following questions were analyzed:

1. What are the learning preferences for accounting students?
2. Are there differences in learning styles based on age, gender, ethnicity, student major, or ethnicity?
3. What tools work best for addressing the learning styles of accounting students?
4. Will achievement rates increase using alternate delivery methods?

The limitations of the study were as follows:

1. The sample was limited to students enrolled in Accounting I at Chippewa Valley Technical College in the fall 2007 semester only.
2. Measurement of learning styles will be determined on only a select measurement tool.
3. The study does not consider current economic factors that may determine the student population at Chippewa Valley Technical College.
4. Diversity in the classroom is not consistent from class to class or semester to semester, and does not equally represent all ages, genders, and ethnic

backgrounds, student majors, and students' technological abilities in the same proportion.

The review of literature looked at two different themes in regards to student success. First, it looked at learning preferences based on age, gender, and ethnicity, student major and technological ability. Previous studies from the literature review have indicated that there are differences in learning styles based on the above factors. Second, the benefits of classroom, online, and hybrid delivery of instruction were investigated. Based on the review of literature, there were advantages and disadvantages to all three delivery methods. Students in a hybrid delivery class appeared to have either the same or better success rates than those that were enrolled in a traditional classroom, and better success rates than those in a completely online environment.

Two elements in each course were researched in this study. First, a survey given to both the face-to-face and the hybrid sections was distributed in the classroom. The survey was given to obtain pertinent information on student demographics and learning preferences. Second, student's final grades were compared in each format to see if the delivery method had an impact on their success in the course. Success was rated as percentage of A's, B's, C's and D's in each course.

After the data was analyzed in both the hybrid and face-to-face sections of Accounting I, there were slight differences found between learning preferences based on age, gender, and ethnicity, student major and technological ability. In the hybrid section, student grades were slightly lower than in the face-to-face section. In order to further understand this information, original research questions are compared with each survey question, and the results are examined below.

Conclusions

Research Question 1: What are the learning preferences of Accounting Students? Findings: This question was tied to survey questions 6, 7, 8 and 10. Students enrolled in both the hybrid and face-to-face courses were asked about their delivery preference, learning preference, technological preference and their communication preference. Survey question 6, "The following type of instruction would be my preference?" produced the following results: In the hybrid course, 44.4% selected face-to-face and 55.6% selected a combination of delivery methods. In the face-to-face course, 59.0% selected face-to-face, 2.6% selected online, and the other 38.4% selected a combination of methods. While there is not one specific delivery method indicated. Students in both classes seemed to prefer either face-to-face delivery or a combination. Survey question 7, "My most effective learning is achieved through:" produced these results. In the hybrid section, 15.0% of the students chose see/hearing about, 5.0% reading about, and 80.0% doing/hands-on learning. In the face-to-face section, 31.8% chose seeing/hearing about and 68.2% chose doing/hands-on learning. Survey question 8, "Technology enhances my learning" produced the following results: In the hybrid section, 66.7% strongly agreed and 33.3% agreed. In the face-to-face section, 4.8% strongly agreed, 90.5% agreed, and 2.6% disagreed that technology enhanced their learning. Survey question 10, "My communication preference is" produced these results: In the hybrid course, 57.1% preferred face-to-face communication, 14.3% e-mail, 9.5% online discussion, 4.8% telephone, and 14.3% other or a combination of communication methods. In the face-to-face section, 66.7% chose face-to-face communication, 19.0% e-mail and 9.5% online discussion. Based on the data collected from this study,

accounting students as a whole seem to have the following learning preferences: 59.0% of all students in the study preferred face-to-face delivery; 70.5% of all of the students preferred doing/hands-on learning, 97.4% of all the students either agreed or strongly agreed that technology enhanced their learning, and 66.7% chose face-to-face as their communication preference. See table 17 in chapter IV for a summary of student delivery preferences.

Research Question 2: "Are their differences in learning style based on age, gender, and ethnicity, student major or technological ability?

Findings: This question was tied to survey questions 2, 3, 4, 5 and 9 and then compared with survey questions 6, 7, 8 and 10. Students enrolled in both the hybrid and face-to-face courses were asked their gender, age, ethnicity, major, and technological ability, these responses were then compared to their responses on delivery preference, learning preference, technological preference and communication preference. The results based on gender, age, ethnicity, major, and technological ability are as follows:

Gender

Survey question 2 asked for student gender. This data was then compared to responses on delivery, learning, technological, and communication preference to determine differences based on gender. Results of students learning preferences by gender are as follows: Of the male students, 81.8% preferred face-to-face delivery, 72.7% preferred doing/hands-on learning; 100.0% stated technology as an enhancement to learning, and 81.8% chose face-to-face as their preferred communication method. In the female population, delivery method was almost split with 50.0% choosing face-to-face, and 46.4% a combination; 79.3% chose doing/hands-on as their learning preference,

96.4% stated technology enhanced their learning, and 60.7% chose face-to-face as their preferred communication method. Overall, male and female students in this study, tended to have similar learning preferences.

The data collected does not indicate much difference in learning preferences based on gender. The only variation was in preferred delivery method. Most of the male students (81.8%) preferred face-to-face delivery, while the female students were split between face-to-face (50.0%) and a combination (46.4%). Students of both genders chose doing/hands-on as their learning preference; technology is an enhancement to learning, and face-to-face as their preferred communication preference. Due to the limitations of this study, further study would need to be done to get conclusive results based on gender. See table 18 in chapter IV for a summary of preferences by gender.

Age

Survey question 3 asked for student age. This data was then compared to responses on delivery, learning, technological, and communication preference. Age ranges were 18-26, 27-36, 36-46, and over 46. Results of student preferences in the 18-26 age range were as follows: 61.5% chose a combination of delivery methods, 78.1% chose doing/hands-on as their learning preference, 96.9% stated technology as an enhancement to their learning, and 65.6% chose face-to-face as their preferred communication method. In the 27-36 age range: delivery preference was split with 50.0% choosing face-to-face and 50.0% choosing a combination of methods. In the 27-36 year range, 75.0% chose doing/hands-on as their learning preference, 100.0% stated that technology enhanced their learning, and 75.0% chose face-to-face as their communication preference. In the 36-46 years range: 100.0% chose face-to-face as their

delivery preference, 100.0% chose doing/hands-on learning, 100.0% stated technology enhanced their learning, and 100.0% chose face-to-face as their communication preference. Finally, in the over 46 years range: Delivery preference was split, 50% face-to-face, 50% combination; learning preference was 100.0% doing/hands-on, 100.0% stated technology enhanced their learning, and communication preference was split; 50% face-to-face, 50% Other/combination.

The data collected indicates little difference in learning preferences based on age. Most students in all age ranges preferred face-to-face or a combination of delivery methods; doing/hands-on as their learning preference; technology as an enhancement to learning, and face-to-face as their preferred communication preference. Due to the limitations of this study, further study would need to be done to get conclusive results based on age. See table 19 in chapter IV for a summary of preferences by age.

Ethnicity

Survey question 4 asked for student ethnicity. This data was then compared to responses on delivery, learning, technological, and communication preference. Ethnicity was categorized as white/caucasian, black, hispanic, asian, and other. Results of student preferences based on ethnicity were as follows:

White caucasian ethnicity represented 89.7% of all of the students in the study. Of the 39 students represented, 35 were white/caucasian, 1 was black, 0 were hispanic, 2 were asian, and 1 stated other. Of the white/caucasian population, delivery preference was split with 50.0% choosing face-to-face, and 42.9% choosing a combination of methods. 69.4% chose doing/hands-on as their learning method, 97.1% stated technology enhanced their learning, and 65.7% chose face-to-face as their preferred

communication method. In the black population, 100.0% chose online delivery, 100.0% doing/hands-on learning, 100.0% stated technology enhanced their learning, and 100% chose face-to-face communication. In the Asian population, 100.0% chose face-to-face delivery, 100.0% chose doing/hands-on learning, 100.0% stated technology enhanced their learning, and communication was divided 50.0% face-to-face, and 50.0% e-mail. Finally, in the other category, 100.0% chose face-to-face, 100.0% chose doing/hands-on, 100.0% stated technology enhanced their learning, and 100.0% chose face-to-face as their communication preference. Because this study did not represent a fair sample of each ethnic group, it would be difficult to make any conclusions based on this data. Further study with an equally diverse population would be necessary to determine if there are differences in learning preferences based on ethnicity. See table 20 in chapter IV for a summary of preferences by ethnicity.

Student Major

Survey question 5 asked for student major. This data was then compared to responses on delivery, learning, technological, and communication preference. Majors were categorized as Accounting, Business Management, Marketing, and other. Results of student preferences based on major were as follows: Within the accounting student group, 37.5% chose face-to-face, and 62.5% chose a combination as their preferred delivery method. Learning preferences of accounting students were: 12.5% seeing/hearing and 87.5% doing/hands-on. Accounting students agreed 100.0% that technology enhanced their learning. Finally, 43.8% of accounting students chose face-to-face as their preferred communication method; 37.5% chose email, and 18.8% chose a combination. Within the Business Management group, 73.3% chose face-to-face, 6.7%

online, and 20.0% chose combination as their preferred delivery method. Learning preferences of Business Management students were: 20.0% seeing/hearing and 80.0% doing/hands-on. Business Management students were 93.3% in agreement, and 6.7% in disagreement that technology enhanced their learning. Communication preference for Business Management students was 86.7% face-to-face and 13.3% online discussion. Within the Marketing group 100.0% chose face-to-face delivery, 100.0% chose doing/hands-on as their learning preference, 100.0% were in agreement that technology enhanced their learning, and 100.0% chose face-to-face as their preferred communication method. With the other category, 75.0% chose face-to-face and 25.0% chose a combination as their delivery preference. Learning preferences of students in the other category were as follows: 33.3% chose see/hearing about, 11.1% chose reading about and 55.6% chose doing/hands-on. Students in the other category were 100.0% in agreement that technology enhanced their learning, and communication preferences were as follows: 75.0% chose face-to-face, 12.5% email and 12.5% online discussion. See table 21 in Chapter IV for a summary of preferences by student major.

Technological Ability

Survey question 9 asked for technological ability. This data was then compared to responses on delivery, learning, technological, and communication preference. Ability was categorized as very good, good, fair, and poor. Results of student preferences based on technological ability were as follows: Students who stated that they were very good with technology had the following results: 33.3% chose face-to-face and 66.7% chose a combination as their preferred delivery method, 23.1% chose see/hearing about, 7.7% chose reading about, and 69.2% chose doing/hands-on as their learning preference,

100.0% were in agreement that technology enhanced their learning, and 33.3% chose face-to-face, 25.0% email, 16.7% online discussion, and 25.0% chose other as their communication preference. Students who stated that they were only good with technology had the following results: 79.2% chose face-to-face and 20.8% chose a combination as their preferred delivery method, 16.7% chose see/hearing about and 83.3% chose doing/hands-on as their learning preference, 95.8% were in agreement and 4.2% disagreed that technology enhanced their learning, and 83.3% chose face-to-face and 16.7% chose email as their communication preference. Students who stated that they were fair with technology had the following results: 100.0% chose a combination as their preferred delivery method, 100.0% chose doing/hands-on as their learning preference, 100.0% were in agreement that technology enhanced their learning, and 100.0% chose face-to-face as their communication preference. Finally, students who stated begin poor with technology had the following results: 100.0% chose online as their preferred delivery method, 100.0% chose see/hearing about as their preferred learning method, 100.0% were in agreement that technology enhanced their learning, and 100.0% chose online discussion as their preferred communication method. See table 22 in chapter IV for a summary of preferences by technological ability.

Research Question 3: "What tools work best for addressing the learning styles of accounting students?"

Findings: This question is tied to survey questions 11, 12, and 13. Students enrolled in both the hybrid and face-to-face sections of accounting were asked about tools that enhance their learning. Survey question 11 asked the students if using an online discussion board was a helpful tool. Students in the hybrid section 66.7% found an

online discussion board helpful, and the other 33.3% did not. In the face-to-face section, 28.6% found an online discussion board helpful, and 71.4% did not. Students in the hybrid class seemed to find an online discussion board to be more helpful than those in the face-to-face class. Question 12 asked the students if they found a spreadsheet program to be helpful in learning accounting. In the hybrid class 72.2% found a spreadsheet program to be helpful, and 27.8% did not. In the face-to-face class 85.0% found spreadsheets to be helpful and 15.0% did not. The face-to-face section found spreadsheet software to be more beneficial than the hybrid students. Question 13 asked the students if they found online interactive quizzes to be helpful to learning accounting. In the hybrid section, 83.3% found interactive online quizzes to be helpful and the other 16.7% did not. Of the classroom students, only 19.0% found interactive online quizzes to be helpful and the other 81.0% did not. Students in the hybrid section seemed to find more benefit in online interactive quizzes.

Research Question 4: "Will achievement rates increase using alternate delivery formats?"

Findings: This question was tied to survey questions 1, 14, and 15. Students enrolled in both the hybrid and face-to-face sections of accounting were asked if delivery method is a factor due to distance, ability to attend class, or to their success in accounting. This information was then tied to student final grades to see if achievement rates increased using alternate formats. Survey question 1 asked students about the distance they lived from the CVTC campus. In the hybrid section 39.0% lived less than 10 miles, 17.0% lived 10-20 miles, 22.0% lived between 20 and 30 miles, and 22.0% lived over 30 miles from campus. This information was then compared to success rates in the course.

Students in the hybrid section who lived less than 10 miles from the campus had the following success rates: 57.1% A's, 14.3% B's, 14.3% C's, and 14.3% D's. In the 10-20 mile range student success rates were: 66.7% A's and 33.3% B's. Students living between 20 and 30 miles from campus had the following success rates: 25.0% A's and 75.0% B's. In the over 40 mile range, hybrid students had the following success rates: 50.0% A's, 25.0% B's and 25.0% C's. The face-to-face section tended to live closer to campus. In the face-to-face section, 71.0% lived less than 10 miles from campus, 24.0% lived between 10 and 20 miles from campus, and 5.0% lived between 20 and 30 miles from campus. Of this section, the students living within 10 miles had the following success rates: 46.7% A's, 40.0% B's and 13.3% C's. Students living between 10 and 20 miles of campus had the following success rates: 20.0% A's, 20.0% B's, 20.0% C's and 40.0% D's. Face-to-face students living between 20 and 30 miles from campus had the following success rates: 100.0% A's. Within the hybrid section it appeared that students living further away had better success rates. In the face-to-face section, those living close to campus and those living furthest away both seemed to have better success rates, students in between had the most difference in success rate. Questions 14 and 15 asks the students if their chosen delivery method; hybrid or face-to-face, is a factor in their ability to take the accounting course and if it is a factor in their success in accounting. Hybrid students had the following results: 66.7% stated that the delivery method was a factor to both their ability to take the course and their ability to succeed in accounting. Of these students the success rates are as follows: 58.3% A's, 33.3% B's and 8.3% C's. Results of the 33.3% of the hybrid students who answered no that delivery method was not a factor were: 33.3% A's, 33.3% B's, 16.7% C's and 16.7% D's. In the face-to-face

section, 85.0% stated delivery method was a factor in their ability to take the course, 90.0% stated it was a factor in their success in accounting. Of these students, success rates were as follows: 47.4% A's, 31.6% B's, 15.8% C's and 5.3% D's. Students who stated that delivery method was not a factor in either their ability to take the course or their success in accounting had the following results: 50.0% B's and 50.0% D's.

Recommendations

Based on this study and the analysis of the data, alternate teaching and learning strategies could be used to improve the success rates of accounting students.

1. In both the hybrid section and the face-to-face section of Accounting I, teaching methods could be modified to include a more diverse style of delivery. The majority of students in both sections preferred either seeing/hearing about or a combined delivery format. Using a combined delivery format could address the needs of all accounting students.
2. In both the hybrid and the face-to-face sections, more doing/hands-on activities could be developed to address the learning preferences of accounting students. The majority of the students in both sections chose doing/hands-on as their preferred learning style.
3. In the face-to-face section of Accounting I, increased online activities and communication could be added to address the learning preferences of more students.
4. In both sections an increase in the use of technology could have an impact on student success. The majority of students in both sections either agreed or strongly agreed that technology enhanced their learning.

Recommendations for Further Study

To fully understand differences between gender, age, ethnicity, student major and technological ability, further research of accounting students learning preferences is needed. In addition, in order to determine if either format has an impact on student success rates, a more in-depth study of the hybrid and face-to-face delivery methods is necessary.

1. Student diversity at CVTC needs to be more in alignment to get a clear picture of differences between gender, age, and ethnicity, student major and technological ability.
2. A more in-depth survey with a larger and more diverse population should be conducted to determine which delivery formats produce the highest success rates for accounting students at CVTC.

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Appendix A: Survey

This project has been reviewed by the UW-Stout IRB as required by the Code of Federal Regulations Title 45 Part 46

Name _____

Delivery Method (Hybrid or Face-to-face) _____

Statement of Consent:

By completing this survey you agree to participate in the project entitled *The Effects of Alternate Teaching Strategies on the Achievement and Retention of Students enrolled in Accounting I at Chippewa Valley Technical College.* The information from this survey will be used for research purposes only; all personal information will be kept confidential by the researcher.

1. Distance from campus:
    a. Less than 10 miles
    b. 10 – 20 miles
    c. 20 – 30 miles
    d. Over 30 miles

2. Gender
    a. Male
    b. Female

3. Age
    a. 18-26
    b. 27-36
    c. 36-46
    d. Over 46

4. Ethnicity
    a. White Caucasian
    b. Black
    c. Hispanic
    d. Asian
    e. Other _____

5. Major in school:
    a. Accounting
    b. Business Management
    c. Marketing
    d. Other _____

6. The following type of instruction would be my preference
    a. Face-to-face
    b. Online
    c. Print based
    d. Combination of above

7. My "most" effective learning is achieved through:
    a. Seeing and hearing about
    b. Reading about
    c. Hearing about
    d. Doing / Hands-on

8. Technology enhances my learning:
    a. Strongly agree
    b. Agree
    c. Disagree
    d. Strongly disagree

9. My technological ability is:
    a. Very good
    b. Good
    c. Fair
    d. Poor

10. My communication preference is:
    a. Face-to-face
    b. E-mail
    c. Online discussion
    d. Telephone
    e. Other _____

11. Using an online discussion board as a learning tool is helpful?
    a. Yes
    b. No

12. Using a spreadsheet program such as excel is a useful tool in completing accounting assignments?
    a. Yes
    b. No

13. Interactive online quizzes are helpful to my success in accounting?
    a. Yes
    b. No

14. The delivery method (hybrid or face-to-face) of this course is an important factor in my continuing my studies at Chippewa Valley Technical College?
    a. Yes
    b. No

15. The delivery method (hybrid or face-to-face) is important to my success in Accounting I?
    a. Yes
    b. No