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Do Distance Learning Students Taking Business and Technology Courses at Olympic College Achieve the Same Grade Point Averages as On-Campus Students in the Same Courses

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Do Distance Learning Students Taking Business And Technology Courses At Olympic College Achieve The Same Grade Point Averages As On-Campus Students In The Same Courses

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By
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APPROVAL PAGE

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Advisor and
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Date

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CHAPTER I

INTRODUCTION

Olympic College (OC) is the only college serving the entire Kitsap Peninsula and parts of the Olympic Peninsula of Washington. This region contains three counties. Many of the communities are more than an one hour drive from the main campus.

Another population of students at OC is employed full-time. Often, these students work irregular hours, or hours that would conflict with course offerings on the main campus.

Olympic College has been offering online classes to these students for five years. The earliest adopters and heaviest users of this method of teaching have been from the Business and Technology (B&T) Division. Courses in Programming and Office Technology are the most popular offerings in the catalog. Many professors in the B&T Division simultaneously offer on-campus and online versions of the same course.

STATEMENT OF THE PROBLEM

The purpose of this study was to determine whether distance learning students taking Business and Technology courses at Olympic College achieved the same GPAs as on-campus students in the same courses.

HYPOTHESIS

To guide this problem, the following hypothesis was established:

H_0 – There will be no significant difference in the GPAs of online and on-campus students in the same Business and Technology courses at Olympic College.

BACKGROUND AND SIGNIFICANCE

While OC has been offering online courses since 1999, no studies have been undertaken to measure the effectiveness of these course offerings. Professors in all disciplines are being encouraged by the administration to develop online versions of the classes they teach. Training is offered to all faculty. Despite this move to expand the options for delivering instruction, the only evaluations of effectiveness have been anecdotal impressions of how the students did by the professors involved in teaching the courses. Dr. Richard N. Strand, Dean for Business and Technology, summarized the problem by stating: "The number of distance classes (online, video) is growing rapidly but we haven't really assessed the quality of the learning experience." (Strand, 2003)

Out of 489 courses offered at Olympic College more than ten percent were offered as distance learning classes, with 35 online

and 15 telecourses in the Fall 2003 schedule (OC, 2003). Because this issue had not been previously studied, there were questions about the effectiveness of online courses versus traditional classroom instruction. Many instructors believed the online courses produced equal or better results, but none could produce substantial evidence to support their opinions. Completion of this study provided comparative information on outcomes in a way that would aid in the decision whether OC should encourage the development of more distance learning course content.

LIMITATIONS

This research had the following limitations:

1. The study was limited to the Business and Technology Division at OC.
2. Courses were being taught simultaneously on-campus and online by the same professors and using the same syllabi.
3. Data were assessed for courses taught during the 2001-2002 and 2002-2003 academic years.

ASSUMPTIONS

The following assumptions were made about the research being conducted:

1. The same syllabus was used for both versions of the same class.

2. Professors involved in the study have taught online courses in the past.

3. Comparisons were made only for students who completed the courses offered.

4. There were no major technical issues affecting the delivery of the online content.

5. Professors were equally available to answer questions for online and on-campus students.

PROCEDURES

The experimental method of research was used to gather and analyze the information necessary for this study. Syllabi were collected from each professor, and final grades were provided for all students by the college.

Grades were aggregated into a single GPA for each class and compared directly with the same course grades from the opposite delivery method. The total aggregate GPA for all classes was also computed and compared in the same manner.

DEFINITION OF TERMS

The following terms are used to clarify this study:

OC – Olympic College.

B&T – Business and Technology Division. A division of OC that offers training in Business (Accounting, Management, Marketing, Office Technology) and Technology (Programming, Engineering, Vocational Training).

Online – Courses taken via the World Wide Web, usually from the student's home.

ISS – Instructional Support Services. A campus department providing support to faculty under the guidance of the Dean of Instruction.

OVERVIEW OF CHAPTERS

Chapter I explained the need for a study of learning outcomes at OC. The study exposed the lack of previous research comparing outcomes between campus-based and distance learning delivery of the same subject matter.

The review of existing literature was necessary to understand what has been done at other institutions of higher learning in evaluating distance-learning outcomes. Studies comparing outcomes as well as studies of perceptions regarding the differences were reviewed.

The methods and procedures used to collect and analyze the data are explained in detail in Chapter III. Chapter IV presents and interprets the results obtained using the methods described in

Chapter III. Chapter V summarizes the findings and suggests recommendations for further study.

CHAPTER II

REVIEW OF LITERATURE

The review of literature provides an overview of information concerning online classes. In the United States there are thousands of students earning degrees either entirely or partially online, with little or no need to attend on-campus classes or meet personally with instructors (Beard & Harper, 2002, p. 658). Out of 489 courses offered at Olympic College more than ten percent were offered as distance learning classes, with 35 online and 15 telecourses in the Fall 2003 schedule (OC, 2003).

The books and articles reviewed state there are many factors to consider when deciding to teach a course online, including the suitability of the course material, and the instructor's qualifications to teach using an online delivery method. Barriers and advantages to online learning will be discussed. The literature of this chapter will cover (1) student barriers to learning, (2) effective online teaching, (3) perceived advantages of online courses, and (4) the effects of student motivation on outcomes.

STUDENT BARRIERS TO LEARNING

Many possible barriers to student learning exist, including adequate access to the hardware and software required to

participate in the course (McKimm, Jollie, & Cantillon, 2003, p. 873), student skill levels (Shea, Motiwalla, & Lewis, 2001, p. 114), and time-management challenges (Riffell & Sibley, 2003, p. 397). In addition, personality traits can have an effect on how well a student will do in online courses. "Introverts generally appear more extroverted online, frequently becoming quite verbal and interactive. Their ability to take time, reflect, and present themselves through text serves them well" (Palloff & Pratt, 2001, pp. 21-22).

The technology itself can create a barrier to learning. "The vulnerability of institutions to computer virus attacks and the lack of ability to quickly remedy an attack are potentially serious problems for online courses" (Rittschoff & Griffin, 2003, p. 135). In addition to virus attacks, many courses, especially in technology, require the student to install additional software. In some cases this software is incompatible with the existing equipment, creating an additional financial hardship on the student who is forced to purchase a newer computer or upgrade an operating system in order to participate in the course.

EFFECTIVE ONLINE TEACHING

Teaching courses online requires a different approach than the traditional face-to-face classroom environment. Teaching style

and the instructor's personality can have an effect. It has even been suggested that some faculty are simply not suited for the online teaching environment (Palloff & Pratt, 2001, p. 21). Instructors must become more actively visible within the teaching environment, as teacher participation is cited as the most important factor in student satisfaction with online instruction (Youngblood, Trede, & De Corpo, 2001, p. 271; Woods, 2002, p. 386).

One challenge faced by many online instructors is the need to establish a feeling of community in a class where students may be physically separated by hundreds or even thousands of miles (Palloff & Pratt, 2001, p. 20). In many cases this means the inclusion of students in activities within the online classroom. According to Woods, "...faculty-student and student-student communication within discussion group formats is just as (if not more) important when it comes to positively influencing student perceptions of and participation in online learning than personal communication that occurs outside such formats" (Woods, 2002, p. 386). In general, teachers who have traditionally used active learning techniques have found that the methods translate well to the classroom (Palloff & Pratt, 2003, p. 161).

Communicating online requires an increased clarity of writing by the teacher in the delivery of written instructions to the

students. Unclear instructions were cited by many students as one of the reasons for experiencing frustration with online courses (Youngblood, Trede, & De Corpo, 2001, p. 271).

PERCEIVED ADVANTAGES OF ONLINE COURSES

Despite these barriers to teaching and learning online, there are many perceived advantages to course delivery online. Near the top of the list is the ability to access course materials at times which are convenient to the student. Also mentioned is the convenience of learning from home rather than commuting to campus (Beard & Harper, 2002, p. 358).

In addition, many students appreciate the added depth of understanding they gain from taking a course online. "Specific benefits included forcing them to read the textbook and spend time on the material each week rather than just before a test" (Riffell & Sibley, 2003, p. 397).

Online classes have an additional advantage of being able to link directly to supplemental information located at other web sites. Instructors can make such online "field trips" a valuable part of the learning experience (Tuthill & Klemm, 2002, p. 453).

EFFECTS OF STUDENT MOTIVATION ON OUTCOMES

Motivation has a clear relationship to learning outcome, whether in the traditional classroom setting or online (Sankaran & Bui, 2001, p. 191). Highly motivated learners will generally do better than those with low motivation. In the case of online learning, many times the students who take a course online are already motivated to a higher degree than their on campus counterparts (Shea, Motiwalla, & Lewis, 2001, p. 114).

One study determined that motivation, more than delivery method, determined the student outcomes. "...students with similar learning strategy and motivation performed equally well irrespective of Web or lecture format" (Sankaran & Bui, 2001, p. 197). Outcomes, then, should be similar whether the course is delivered online or in the traditional classroom.

SUMMARY

The review of literature provides an overview of the current thinking about online classroom outcomes. It was shown that many barriers to online learning exist, particularly in terms of hardware and software issues. Student technical ability was also deemed a significant factor in the successful completion of an online course. Further, it was shown that instructor presence in the online

classroom is one of the greatest concerns of students taking such courses.

Many advantages to online course delivery were introduced, including the ability to access course materials at a time more convenient to the student and improved depth of comprehension. In addition, learning was determined to be more dependent on student motivation than delivery method.

The next chapter will explain the instruments and methods and procedures used to collect the data used in this study. The population will be identified and an explanation of the analysis of the data will be provided.

CHAPTER III

METHODS AND PROCEDURES

Chapter III explains the methods and procedures used in collecting the data necessary for this research. Descriptions of the population and instrument design used in this study are included in this chapter. The data collection procedures and statistical analysis are also explained.

POPULATION

The population for this study consisted entirely of full-time faculty members of Olympic College's Business and Technology Division. All faculty members teach the same courses in a traditional classroom setting and as an online course. The courses were taught by two faculty members and included Computerized Accounting, Introduction to Operating Systems, Applications for IT Professionals, and Introduction to the Internet. Two hundred thirty-two students' grades were evaluated. One hundred twenty were enrolled in traditional on-campus classes and one hundred twelve were enrolled in online classes. Instructional Support Services (ISS) at OC offered cooperation in providing grades and completion rates for the courses studied.

INSTRUMENT DESIGN

The study was completed using existing data supplied by Instructional Support Services at Olympic College. All student identification was removed from the data before it was provided to the researcher. Classes were coded by academic term and course name, and professors were identified only by the letters A or B to preserve full anonymity.

DATA COLLECTION PROCEDURES

Grades for each class were provided by ISS. Data were provided in matched pairs sorted by course name, professor, and academic quarter in which the course was offered. Initial enrollment figures, withdrawals, and completion rate were also included. Class GPAs were compared for courses which were offered both online and in the traditional classroom at OC by the same professor. The data gathered were used by the researcher to compare learning outcomes between the two delivery methods to determine whether there was any difference among the two sets of data.

STATISTICAL ANALYSIS

Scores were analyzed by professor, by quarter offered, by course, and in aggregate using a t-test to determine whether a

significant difference existed between the two delivery methods studied.

SUMMARY

This chapter provided information on the methods and procedures used to gather data necessary to conduct the research. The population and the instrument design were identified. An explanation of the procedure of how the data were collected and how the data gathered were analyzed was provided. Chapter IV describes the findings and analyzes the data collected.

CHAPTER IV

FINDINGS

The problem of this study was to determine whether distance learning students taking Business and Technology courses at Olympic College achieved the same GPAs as on-campus students in the same courses. This chapter presented the information obtained from analyzing the existing data provided by Instructional Support Services. The following guiding question was instrumental in determining what information was included in the final analysis:

Are students in online classes achieving the same outcomes as students in traditional on-campus classes?

RESULTS

Results were analyzed using individual student grades for all classes, which were aggregated and compared using a t-test to determine whether significant differences existed between the two delivery methods. The results were then applied to the hypothesis to determine whether it was accepted or rejected. Grades from 112 online students and 120 students taking courses in a traditional classroom setting were compared, regardless of whether or not the students completed the courses. For additional validation the results were also compared using only the grades from students

who completed the courses being compared. Twenty-nine percent of the online students and 24 percent of the on-campus students either withdrew or received no grade for the courses.

DATA ANALYSIS

In the first analysis, students who took online classes averaged 2.2 (C) on a scale of 0 – 4, while the on-campus students averaged 2.5 (C+). When the results were analyzed using a t-test the value of t was 0.161, which is lower than the $p > .05$ value of 1.960.

In the second test, comparing only grades for completed courses, online students averaged 3.2 (B), while the on-campus students averaged 3.4 (B+). The value of t for this set was 0.189, again lower than the $p > .05$ level of significance.

Table 1 contains the raw data for all classes taught.

TABLE 1 - OUTCOMES

ONLINE		ON-CAMPUS	
Class	Grade	Class	Grade
OFTEC134	4	OFTEC134	3.8
OFTEC134	0	OFTEC134	3.7
OFTEC134	0	OFTEC134	4
OFTEC134	3.4	OFTEC134	2.8
OFTEC134	0	OFTEC134	4
OFTEC134	4	OFTEC134	4
OFTEC134	3.8	OFTEC134	3.7
OFTEC134	4	OFTEC134	4
OFTEC134	4	OFTEC134	4
OFTEC134	0	OFTEC134	4
OFTEC134	4	OFTEC134	3.3
OFTEC134	0	OFTEC134	3.8

CMPTR115	2.7	OFTEC134	0
CMPTR115	4	OFTEC134	4
CMPTR115	4	CMPTR115	4
CMPTR115	3.7	CMPTR115	0
CMPTR115	3	CMPTR115	0
CMPTR115	3.7	CMPTR115	2.7
CMPTR115	0	CMPTR115	3.7
CMPTR115	4	CMPTR115	0
CMPTR115	3.7	CMPTR115	0
CMPTR115	2.7	CMPTR115	3
CMPTR115	3.3	CMPTR115	0
CMPTR115	0	CMPTR115	3
CMPTR115	0	CMPTR115	0
CMPTR115	0	CMPTR115	4
CMPTR115	0.7	CMPTR115	2
CMPTR115	1.3	CMPTR115	0
CMPTR115	1.7	CMPTR115	0
CMPTR115	4	CMPTR115	0.8
CMPTR115	3.7	CMPTR115	2.3
CMPTR111	3.7	CMPTR115	3.7
CMPTR111	0	CMPTR115	4
CMPTR111	3.7	CMPTR115	4
CMPTR111	3.3	CMPTR115	3.7
CMPTR111	4	CMPTR115	4
CMPTR111	2.7	CMPTR111	0
CMPTR111	0	CMPTR111	2
CMPTR111	4	CMPTR111	3
CMPTR111	2.7	CMPTR111	4
CMPTR111	1.3	CMPTR111	0
CMPTR111	4	CMPTR111	0
CMPTR111	0	CMPTR111	4
CMPTR111	2.3	CMPTR111	1.3
CMPTR111	0	CMPTR111	0.7
CMPTR111	2.3	CMPTR111	3.7
CMPTR111	2.7	CMPTR111	0
CMPTR111	0	CMPTR111	2.7
CMPTR111	3.7	CMPTR111	3.7
CMPTR111	4	CMPTR111	4
CMPTR111	2	CMPTR111	4
CMPTR111	4	CMPTR111	4
CMPTR111	2.7	CMPTR111	4
CMPTR111	3.7	CMPTR111	0
CMPTR111	2	CMPTR111	0
CMPTR111	3	CMPTR111	4
CMPTR111	2	CMPTR111	2.3
CMPTR111	4	CMPTR111	3.7
CMPTR111	4	CMPTR111	3.3
CMPTR111	0	CMPTR111	0

CMPTR111	0	CMPTR111	0
CMPTR111	0	CMPTR111	3.7
CMPTR122	4	CMPTR111	0
CMPTR122	4	CMPTR111	2
CMPTR122	4	CMPTR122	4
CMPTR122	2.7	CMPTR122	3
CMPTR122	3	CMPTR122	0
CMPTR122	4	CMPTR122	4
CMPTR122	0	CMPTR122	4
CMPTR122	4	CMPTR122	2.3
CMPTR122	2.3	CMPTR122	2.7
CMPTR122	3	CMPTR122	4
CMPTR122	2.3	CMPTR122	4
CMPTR122	3.7	CMPTR122	0
CMPTR122	0	CMPTR122	4
CMPTR122	4	CMPTR122	4
CMPTR122	0	CMPTR111	4
CMPTR122	0	CMPTR111	4
CMPTR122	0	CMPTR111	3.7
CMPTR122	0	CMPTR111	4
CMPTR111	2	CMPTR111	4
CMPTR111	0	CMPTR111	3.7
CMPTR111	3.3	CMPTR111	4
CMPTR111	3	CMPTR111	0
CMPTR111	2.7	CMPTR111	0
CMPTR111	0	CMPTR111	4
CMPTR111	0	CMPTR111	4
CMPTR111	0	CMPTR111	3.7
CMPTR111	0	CMPTR111	0
CMPTR122	2	CMPTR111	0
CMPTR122	2.3	CMPTR111	0
CMPTR122	3	CMPTR111	2.7
CMPTR122	0	CMPTR111	0
CMPTR122	2.3	CMPTR111	3.3
CMPTR122	2.3	CMPTR111	2.7
CMPTR122	4	CMPTR111	1
CMPTR122	3.7	CMPTR111	3
CMPTR122	0	CMPTR111	4
CMPTR122	4	CMPTR111	3.7
CMPTR122	3.3	CMPTR122	4
CMPTR122	1	CMPTR122	2.3
CMPTR122	0	CMPTR122	4
CMPTR122	4	CMPTR122	0.7
CMPTR122	2.7	CMPTR122	0
CMPTR122	3	CMPTR122	0
CMPTR122	0	CMPTR122	4
CMPTR122	0	CMPTR122	2
CMPTR122	4	CMPTR122	3.7

CMPTR122	3.3	CMPTR122	3.7
CMPTR122	4	CMPTR122	3
CMPTR122	4	CMPTR122	2
CMPTR122	3.3	CMPTR122	2.7
		CMPTR122	3.7
		CMPTR122	3.3
		CMPTR122	0
		CMPTR122	4
		CMPTR122	3.7
		CMPTR122	3.3
		CMPTR122	4
		CMPTR122	4

Individual classes were also evaluated for differences, with the results listed below:

OFTEC134 – Computerized Accounting – had 26 total students. Twelve took the course online, with 14 enrolled in the traditional classroom setting. A comparison of the two sections produced a value of t = 0.072, well below the p > .05 value of 2.064 level of significance. See Table 2.

TABLE 2 – OFTEC134

ONLINE		ON-CAMPUS	
CLASS	GRADE	CLASS	GRADE
OFTEC134	4	OFTEC134	3.8
OFTEC134	0	OFTEC134	3.7
OFTEC134	0	OFTEC134	4
OFTEC134	3.4	OFTEC134	2.8
OFTEC134	0	OFTEC134	4
OFTEC134	4	OFTEC134	4
OFTEC134	3.8	OFTEC134	3.7
OFTEC134	4	OFTEC134	4
OFTEC134	4	OFTEC134	4
OFTEC134	0	OFTEC134	4
OFTEC134	4	OFTEC134	3.3
OFTEC134	0	OFTEC134	3.8
		OFTEC134	0
		OFTEC134	4

CMPTR115 – Introduction to the Internet – had 41 total students enrolled, with 19 online and 22 attending classes on campus. Comparing these classes produced a value of t = 0.552. This is also below the p > .05 value of 2.021level of significance.

TABLE 3 – CMPTR115

ONLINE		ON-CAMPUS	
CLASS	GRADE	CLASS	GRADE
CMPTR115	2.7	CMPTR115	4
CMPTR115	4	CMPTR115	0
CMPTR115	4	CMPTR115	0
CMPTR115	3.7	CMPTR115	2.7
CMPTR115	3	CMPTR115	3.7
CMPTR115	3.7	CMPTR115	0
CMPTR115	0	CMPTR115	0
CMPTR115	4	CMPTR115	3
CMPTR115	3.7	CMPTR115	0
CMPTR115	2.7	CMPTR115	3
CMPTR115	3.3	CMPTR115	0
CMPTR115	0	CMPTR115	4
CMPTR115	0	CMPTR115	2
CMPTR115	0	CMPTR115	0
CMPTR115	0.7	CMPTR115	0
CMPTR115	1.3	CMPTR115	0.8
CMPTR115	1.7	CMPTR115	2.3
CMPTR115	4	CMPTR115	3.7
CMPTR115	3.7	CMPTR115	4
		CMPTR115	4
		CMPTR115	3.7

CMPTR111 – Introduction to Operating Systems – was offered in three quarters during the period being evaluated. The first quarter there were 35 students enrolled, with 17 online and 18 in the classroom. Applying a t-test to this class produced a

value of t = 0.971 – again below the p. > .05 level of significance of 2.038. The second quarter enrollment was 29, 14 of them online and 15 on-campus. The value of t was .783, once again below the p. > .05 level of significance of 2.052. The third quarter shows 32 students – 9 online and 23 in the traditional setting – with a value of t = .039. This too was below the level of significance for p > .05 at 2.042. See Tables 4, 5 and 6.

TABLE 4 – CMPTR111a

ONLINE		ON-CAMPUS	
CLASS	GRADE	CLASS	GRADE
CMPTR111	3.7	CMPTR111	0
CMPTR111	0	CMPTR111	4
CMPTR111	3.7	CMPTR111	2.7
CMPTR111	3.3	CMPTR111	3.7
CMPTR111	4	CMPTR111	3
CMPTR111	2.7	CMPTR111	0
CMPTR111	0	CMPTR111	2
CMPTR111	4	CMPTR111	3
CMPTR111	2.7	CMPTR111	4
CMPTR111	1.3	CMPTR111	0
CMPTR111	4	CMPTR111	0
CMPTR111	0	CMPTR111	4
CMPTR111	2.3	CMPTR111	1.3
CMPTR111	0	CMPTR111	0.7
CMPTR111	2.3	CMPTR111	3.7
CMPTR111	2.7	CMPTR111	0
CMPTR111	0	CMPTR111	2.7
		CMPTR111	3.7

TABLE 5 – CMPTR111b

ONLINE		ON-CAMPUS	
CLASS	GRADE	CLASS	GRADE
CMPTR111	3.7	CMPTR111	4
CMPTR111	4	CMPTR111	4
CMPTR111	2	CMPTR111	4

CMPTR111	4	CMPTR111	4
CMPTR111	2.7	CMPTR111	0
CMPTR111	3.7	CMPTR111	0
CMPTR111	2	CMPTR111	4
CMPTR111	3	CMPTR111	2.3
CMPTR111	2	CMPTR111	3.7
CMPTR111	4	CMPTR111	3.3
CMPTR111	4	CMPTR111	0
CMPTR111	0	CMPTR111	0
CMPTR111	0	CMPTR111	3.7
CMPTR111	0	CMPTR111	0
		CMPTR111	2

TABLE 6 – CMPTR111c

ONLINE		ON-CAMPUS	
CLASS	GRADE	CLASS	GRADE
CMPTR111	2	CMPTR111	4
CMPTR111	0	CMPTR111	4
CMPTR111	3.3	CMPTR111	3.7
CMPTR111	3	CMPTR111	4
CMPTR111	2.7	CMPTR111	4
CMPTR111	0	CMPTR111	3.7
CMPTR111	0	CMPTR111	4
CMPTR111	0	CMPTR111	0
CMPTR111	0	CMPTR111	0
		CMPTR111	4
		CMPTR111	4
		CMPTR111	3.7
		CMPTR111	0
		CMPTR111	0
		CMPTR111	0
		CMPTR111	2.7
		CMPTR111	0
		CMPTR111	3.3
		CMPTR111	2.7
		CMPTR111	1
		CMPTR111	3
		CMPTR111	4
		CMPTR111	3.7

CMPTR122 – Applications for IT Professionals – also was offered in two of the quarters in the evaluation period. In the first of the quarters there were a total of 30 students – 18

online and 12 in the classroom. A comparison of these outcomes produces a value of t = .242. This is below the p > .050 level of significance at 2.048. The second quarter evaluated had a total of 44 students enrolled, 23 online and 21 in the classroom. Evaluation of these student's GPAs produced a value of t = .474, again below the level of significance at p > .05 at 2.019. See Tables 7 and 8.

TABLE 7 – CMPTR122a

ONLINE		ON-CAMPUS	
CLASS	GRADE	CLASS	GRADE
CMPTR122	4	CMPTR122	4
CMPTR122	4	CMPTR122	3
CMPTR122	4	CMPTR122	0
CMPTR122	2.7	CMPTR122	4
CMPTR122	3	CMPTR122	4
CMPTR122	4	CMPTR122	2.3
CMPTR122	0	CMPTR122	2.7
CMPTR122	4	CMPTR122	4
CMPTR122	2.3	CMPTR122	4
CMPTR122	3	CMPTR122	0
CMPTR122	2.3	CMPTR122	4
CMPTR122	3.7	CMPTR122	4
CMPTR122	0		
CMPTR122	4		
CMPTR122	0		
CMPTR122	0		
CMPTR122	0		
CMPTR122	0		

TABLE 8 – CMPTR122b

ONLINE		ON-CAMPUS	
CLASS	GRADE	CLASS	GRADE
CMPTR122	2	CMPTR122	4
CMPTR122	2.3	CMPTR122	2.3
CMPTR122	3	CMPTR122	4
CMPTR122	0	CMPTR122	0.7
CMPTR122	2.3	CMPTR122	0

CMPTR122	2.3	CMPTR122	0
CMPTR122	4	CMPTR122	4
CMPTR122	3.7	CMPTR122	2
CMPTR122	0	CMPTR122	3.7
CMPTR122	4	CMPTR122	3.7
CMPTR122	3.3	CMPTR122	3
CMPTR122	1	CMPTR122	2
CMPTR122	0	CMPTR122	2.7
CMPTR122	4	CMPTR122	3.7
CMPTR122	2.7	CMPTR122	3.3
CMPTR122	3	CMPTR122	0
CMPTR122	0	CMPTR122	4
CMPTR122	0	CMPTR122	3.7
CMPTR122	4	CMPTR122	3.3
CMPTR122	3.3	CMPTR122	4
CMPTR122	4	CMPTR122	4
CMPTR122	4		
CMPTR122	3.3		

SUMMARY

In this chapter data from twelve classes was analyzed using a t-test to determine whether significant differences exist between the Grade Point Averages of online students and on-campus students taking the same courses taught by the same instructors. Data from the whole population was compared in aggregate as well as data from individual classes.

Chapter V summarizes the research study. This final chapter will contain the summary, conclusions, and recommendations for this research.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The problem of this study was to determine whether distance learning students taking Business and Technology courses at Olympic College achieved the same GPAs as on-campus students in the same courses. This chapter summarizes the research study, draws conclusions based on the findings of the data, and provides recommendations based on these conclusions.

SUMMARY

While Olympic College has been offering online courses since 1999, no studies have been undertaken to measure the effectiveness of these course offerings. Professors in all disciplines are being encouraged by the administration to develop online versions of the classes they teach. Training is offered to all faculty. Despite this move to expand the options for delivering instruction, the only evaluations of effectiveness have been anecdotal impressions of how the students did by the professors involved in teaching the courses.

Because this issue had not been previously studied, there were questions about the effectiveness of online courses versus traditional classroom instruction. Many instructors believed the online courses produced equal or better results, but none could produce substantial evidence to support their opinions. Completion of this study provided comparative information on outcomes in a way that would aid in the decision whether OC should encourage the development of more distance learning course content.

This study compared outcomes as measured by final grades from twelve Business and Technology classes taught during the 2001-2002 and 2002-2003 academic years. The classes were all offered in both online and on-campus sections during the same quarter, with six of the classes held online and six held on-campus, and the compared sections were taught by the same instructor during the same quarter.

A t-test was used to analyze and compare the outcomes. Grades were compared including all students who started the class regardless of status at the end of the session, and then again using data for only those students who completed the courses with enough work turned in to receive a grade. Each individual course was also compared for its online and on-campus versions.

CONCLUSIONS

This study was designed to determine whether students taking online classes at Olympic College were achieving the same Grade Point Averages as their on-campus peers. Based on the review of literature the following hypothesis was developed:

H_0 – There will be no significant difference in the GPAs of online and on-campus students in the same Business and Technology courses.

An analysis of the data revealed that no significant difference existed between grade-based outcomes of online and on-campus courses as taught at OC. Based on a value of $t=0.161$, which is lower than the $p > .05$ value of 1.960, the hypothesis is supported.

Further analysis of the data showed that the completion rate for both delivery methods was similar for the ten classes used in the study. Seventy-one percent of the online students and 76% of the on-campus students completed enough of the course work to receive grades for the classes, and GPAs were within two-tenths of a grade point between the two delivery methods. The courses represented a mix of general computing, business applications, and core computing classes. No differences in performance could be detected between offerings of the same course.

RECOMMENDATIONS

During the course of this study it was discovered that many members of the faculty offer the same courses online that they do on-campus, but very few offer both delivery methods during the same academic term. Many possible reasons exist for this, among them the amount of additional time required to properly conduct a class online. Further study could be done in this area to determine the impact on faculty time commitment when teaching online.

While many courses are offered online, many more are not. Most of these courses could be taught online as effectively as in a traditional classroom setting. A careful analysis of what classes could be added to the online offerings should be done, and faculty who teach those courses should be encouraged to adapt their curricula to teaching in the online environment. Development money and appropriate training could be offered to facilitate the transition, and an instructional technical support team could be developed to assist faculty in the process. A study to see whether the retention rates of 71% and 76% for the two delivery methods studied could be improved would also benefit the college.

Finally, this study should be expanded to include courses from other disciplines at OC. Besides the courses offered in Business and Technology, online classes are currently offered in Anthropology,

Art, Early Childhood Education, English, General Studies, Humanities, Journalism, Medical Office Assistant, Music, Psychology, and Sociology. Studies of these courses would also serve as a measure of their effectiveness and should provide encouragement for more disciplines to develop online course offerings.

APPENDICES

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