2006

A Comparison Of Student Perceptions Of Learning In Their Co-op And Internship Experiences And The Classroom Environment: A Study

Scott Lee
University of Central Florida

A COMPARISON OF STUDENT PERCEPTIONS OF LEARNING IN THEIR CO-OP AND INTERNSHIP EXPERIENCES AND THE CLASSROOM ENVIRONMENT: A STUDY OF HOSPITALITY MANAGEMENT STUDENTS

by

SCOTT LEE
B.S. Florida State University, 1992
M.B.A. University of Central Florida, 2000

A dissertation submitted in partial fulfillment of the requirements
for the degree of Doctor of Education
in the Department of Educational Research, Technology and Leadership
in the College of Education
at University of Central Florida
Orlando, Florida

Summer Term
2006

Major Professor: LeVester Tubbs

ABSTRACT

This study analyzed hospitality management student perceptions of learning both inside the classroom environment and student perceptions of learning in their experiential learning assignments outside the classroom. There were 681 students attending the Rosen College of Hospitality Management at the University of Central Florida who participated in this study.

A modified version of the Predicting Learner Advancement through Cooperative Education (P.L.A.C.E.) instrument was used in order to collect data for the study. The P.L.A.C.E. instrument was developed to be a standardized instrument measuring pre-graduation learning outcomes in the following four areas: (a) career development, (b) academic functions achievement, (c) work skills development, and (d) personal growth/development (Parks et al., 2001). This study attempted to add to the literature regarding learning outcomes by contrasting learning in the classroom environment and cooperative education learning assignments.

Many leading hospitality curriculums currently incorporate an experiential learning component into their curriculums. Some of the documented benefits of experiential learning or cooperative education programs include: (a) improved student self confidence, self-concept, and improved social skills (Gillan, Davies, & Beissel, 1984). (b) increased practical knowledge and skills (Williams et al. (1993), and (c) enhanced employment opportunities (Clark, 1994; Sharma, Mannel & Rowe, 1995). This study confirmed all of these previously documented benefits of experiential learning, and

identified new learning outcomes or benefits for students who participate in experiential learning, such as an increased understanding of how organizations function, increased ability to view career expectations realistically, an increased network of professional contacts, increased ability to take initiative, increased ability to adapt to change, increased leadership skills and increased financial management skills.

Unlike many other studies, this study investigated student perceptions of learning in both their classroom environments and their experiential learning assignments at the same time. This allowed the researcher a unique opportunity to compare and contrast each learning environment and identify specific benefits for each.

Just like the little train climbing up the mountain, it all started with one thought:

I think I can.

TABLE OF CONTENTS

LIST OF TABLES x

CHAPTER 1 PROBLEM STATEMENT AND DESIGN COMPONENTS 1

Introduction 1

Problem Statement 3

Purpose of the Study 4

Significance of the Study 5

Research Questions 6

Definition of Terms 6

Methodology 8

Population 8

Sample 8

Data Collection 9

General Procedures 9

Assumptions 10

Limitations and Delimitations 10

Organization of the Study 11

CHAPTER 2 REVIEW OF LITERATURE 12

Introduction 12

History of Experiential Learning/Cooperative Education 12

Cooperative Education and Internships 15

Cooperative Education: A Definition 17

The Purpose of Cooperative Education 20
Career Benefits for the Students 22
Learning Outcomes of Experiential Learning 23
Benefits for Educational Institutions 25
Experiential Learning and the Hospitality Curriculum 28
Assessment of Cooperative Education 34
CHAPTER 3 METHODOLOGY 39
Introduction 39
Population 39
Sample 40
Instrumentation 40
Data Collection 44
Quantitative Analysis 44
Presentation of Ethical Considerations 45
General Procedures 45
Summary 46
CHAPTER 4 DATA ANLYSIS 47
Introduction 47
Description of the Population 47
Research Question 1 53
Research Question 2 55
Research Question 3 57
Research Question 4 75

Summary 78
CHAPTER 5 SUMMARY, DISCUSSION AND RECOMMENDATIONS 79
Introduction 79
Statement of the Problem 79
Methodology 80
Population 81
Sampling 81
Instrumentation 82
Data Collection 83
Data Analysis 84
Summary and Discussion of Findings 85
Brief Description of the Population 85
Research Question 1 87
Research Question 2 87
Research Question 3 88
Research Question 4 97
Conclusions 99
Recommendations 103
Experiential Learning in the Curriculum 105
Synergistic Efforts of all Faculty 106
Recommendations for Future Research 107
APPENDIX A: INFORMED LETTER OF CONSENT 108
APPENDIX B: P.L.A.C.E. INSTRUMENT 110

APPENDIX C: INSTITUTIONAL REVIEW BOARD APPROVAL LETTER 114

APPENDIX D: THE COOPERATIVE EDUCATION MODEL 116

APPENDIX E: A.C.C.E. CRITERIA FOR ACCREDITATION 122

APPENDIX F: THE ATTRIBUTES OF COOPERATIVE EDUCATION 126

APPENDIX G: DIFFERENCES IN PERCEPTIONS OF LEARNING (EXPERIENTIAL) 131

APPENDIX H: DIFFERENCES IN PERCEPTIONS OF LEARNING (EXPERIENTIAL BY GENDER) 135

APPENDIX I: DIFFERENCES IN PERCEPTIONS OF LEARNING (CLASSROOM BY GENDER) 139

APPENDIX J: ANOVAS: EXPERIENTIAL LEARNING (NUMBER OF CO-OP TERMS) 143

APPENDIX K: ANOVA RESULTS BY CO-OP TERM: CLASSROOM LEARNING EXPERIENCES 149

APPENDIX L: ANOVAS FOR EXPERIENTIAL LEARNING BY CLASS STANDING 155

APPENDIX M: CLASSROOM ENVIRONMENT ANOVAS BY CLASS STANDING 161

LIST OF REFERENCES 167

LIST OF TABLES

Table 1 Student Respondent Demographics: Gender, Class Standing, Major and Minor (n = 681)..... 49

Table 2 Student Respondent Demographics: Age and Citizenship (n = 681) 50

Table 3 Student Respondent Demographics: Industry and Co-op Experience (n = 681) 51

Table 4 Student Respondent Experience Non-Hospitality Industry Experience (n = 681) 52

Table 5 Student Respondent Demographics: GPA and Marital Status (n = 681)..... 53

Table 6 Student Perceptions of Learning as a Result of Classroom Experiences (n = 681) 54

Table 7 Student Perceptions of Learning as a Result of Co-op or Internship Experiences (n = 681)..... 56

Table 8 Paired Samples t-test: Student Participants in Experiential Learning (n=681) ... 58

Table 9 Increased Learning Reported as a Result of Experiential Learning (n=681) 59

Table 10 Increased Learning Reported as a Result of Classroom Environment (n=681) 61

Table 11 Differences in Students' Perceptions as a Result of Experiential Learning 63

Table 12 Differences in Student Perceptions as a Result of Experiential Learning By Gender..... 66

Table 13 Differences in Student Perceptions as a Result of Classroom Environment by Gender..... 68

Table 14 ANOVA Results by Co-op Term: Student Perceptions of Experiential Learning 70

Table 15 Test of Homogeneity of Variances 72

Table 16 ANOVA Results by Co-op Term: Student Perceptions of Classroom Learning73

Table 17 ANOVA Results by Class Standing: Student Perceptions of Classroom Learning 77

CHAPTER 1

PROBLEM STATEMENT AND DESIGN COMPONENTS

Introduction

Wilson (1988) claimed that research in cooperative education had "fallen short of the ideal of scientific inquiry to illuminate relationships, predict effects, explain findings in light of existing theory, or contribute to theory development" (p. 83). Ricks et al. (1990) concurred that "very little theory has been developed and no fine-tuning has resulted from cooperative education research" (p. 11). A group of experienced cooperative professionals described how they viewed the status of research in cooperative education with words such as "sketchy", "sparse", limited, "spotty" and uncertain" (Bartkus & Stull, 1997, p. 7). Bartkus and Stull (1997) clarify further:

> To be fair, it should be noted that such reactions or criticisms of research in co-op education are only valid in comparison to some stated benchmark. For example, one could describe research in cooperative education as 'inadequate' if the comparison were made against one of the more traditional academic disciplines such as chemistry or psychology. Alternatively, if a comparison were to be made against similar non academic activities (e.g., career services, financial aid, student advisement, etc.) one could conclude that the quantity and quality of research in cooperative education is quite good (p. 7).

Dressler and Keeling (2004) argued that doing research in the field of cooperative education is difficult due to the many variables involved in cooperative education programs. However, they added that "it is to their credit that many practitioners and researchers have created models, applied theoretical constructs, and produced research" (p. 217). Regardless of the context, multiple leading authorities within the field of cooperative education assert that cooperative education professionals should become

more research oriented (Bartkus & Stull, 1997, 2004; Ricks et al., 1990; Ryder, 1987; Weaver, 1993; Wilson, 1988). Ricks et al. argued that scientific research will help cooperative education be more of a part of the mainstream of higher education. Weaver (1993) asserted that the "identity of co-op as an academic program must be reinforced" (p. 6). Weaver continued to explain that the mechanism for reinforcement was research. He believed that "To be credible, cooperative education must be able to substantiate claims that cooperative education practice is good educational practice and be able to relate cooperative education practice to the theoretical framework of education" (p. 10).

This study attempted to contrast learning in the classroom environment and cooperative education learning assignments. In most cases, the classroom is teacher-centered because the teacher usually guides the presentation of material and lectures (Mellor, 1991). Cooperative education learning opportunities are usually student-centered because the learning is guided by the individual student's experiences, choices, and decisions as they experience new situations (Mellor).

Cooperative education opportunities also give students an opportunity to gain entry-level skills necessary to succeed in the work-place (Gibson, 1985; Langdon & Judd, 1994; Moore & Urwin, 1991; Richardson-Koehler, 1988; Zeichner, 1986). There is quite a bit of attention given to experientially based courses and opportunities for students because of the opportunity for deeper levels of learning and application of classroom learning provided in experientially based courses (Cooper, Bottomley, & Gordon, 2004). Experiential learning is valued due to the assumption that deeper learning occurs as the student increases his or her level of involvement in the activity. This idea fits well with

Kolb's (1984) learning cycle. Kolb explained that there are four stages of learning: (a) experience, which leads to (b) observation and (c) reflection, which leads to the development of new ideas and (d) experimentation, which leads to further experience. Learning is most effective when it is grounded in experience (Train & Elkin, 2001).

Dewey stated that it is not sufficient for the teacher to merely transmit information to the student or for the student to participate in active tasks in order for learning to occur (Cooper, Bottomley, & Gordon, 2004). Dewey (1938) claimed that for real learning to occur at deeper levels that education needed to be grounded in experience, and that experience needed to be accompanied by the student's active reflection on his or her experience.

Problem Statement

Cooperative Education has been around for 100 years. Although much has been done up to this point, much work is left in order to promote and advance quality cooperative education programs (Sovilla & Varty, 2004). Heinimann (1988) reported that despite obvious growth and success of cooperative education programs that overall many programs still languished on the sidelines of mainstream academics. Van der Worm (1988) added that there were three main reasons for this:

1. Faculty do not recognize work as a vehicle for learning and, in fact, view cooperative education as *anti-intellectual* [original emphasis].
2. Co-op practitioners tend to see themselves as operational people concerned with logistics and administration – not as educators, and

3. Cooperative education methodology for promoting learning is vague and underdeveloped. (p. 121)

Sovilla and Varty (2004) claimed that "many administrators and program staff do not seem to understand that the primary mission of cooperative education is enhanced student learning" (p. 10). They continued to explain that even when administrators understand the mission of cooperative education, many times they ignore the mission when making administrative decisions. Eames and Cates (2004) added that "the failure to gain clear recognition of work experience components as learning opportunities has been linked to a failure thus far to place cooperative education on a sound educational basis with a theoretical underpinning" (p. 39). It has been difficult for cooperative education practitioners to convince faculty to integrate co-op into the curriculum. "Many faculty and administrators are entrenched and comfortable in the more conventional education system" (Sovilla & Varty, p. 11).

Purpose of the Study

The purpose of this study was three-fold. First, a need has been identified (Sovilla & Varty, 2004) for cooperative education professionals to engage and address faculty values and agendas. This has led to the need to evaluate, contrast, and compare student perceptions of learning outcomes in both the classroom environment and cooperative education learning assignments. Secondly, contrasting and comparing student perceptions of learning in experiential learning and the classroom environment were anticipated to help ascertain the strengths of both experiential education and the classroom environment. Thirdly, once the strengths of both environments were

discovered, it was anticipated that the data analysis might prove valuable in developing specific educational strategies for creating successful programs.

Significance of the Study

Cooperative education celebrated its 100th anniversary during the 2005-06 academic year. Currently in the United States there is a strong interest in work-integrated learning. This includes cooperative education, service learning, and increasing internship opportunities (Sovilla & Varty, 2004). Sovilla and Varty wrote that academic credibility is very important to the future development of experiential learning:

> Individual programs and the field collectively need to reflect the educational values of cooperative education. Learning outcomes must become primary program goals. This means that co-op people will need to take steps to understand learning theories and their application to co-op. Further, credible measures of students learning need to be developed to reflect co-op's value in the learning enterprise. Academic credibility requires that co-op people know the agenda of the faculty and the values they hold for the co-op program. It is appropriate for co-op professionals to establish learning goals based on their knowledge of student and employer needs. However, addressing faculty values is essential to enlisting their support (2004, p. 15).

This study attempted to analyze student perceptions of learning in both experiential learning assignments outside the classroom and student perceptions of learning inside the classroom environment. Analysis in the study may provide important knowledge useful in supporting the idea that cooperative education assignments do address faculty agendas and values, and in turn help solicit faculty support of experiential learning programs.

Research Questions

Questions guiding the research are as follows:

1. What are student perceptions of learning as a result of classroom experiences?
2. What are student perceptions of learning as a result of experiential learning experiences?
3. What are the statistically significant differences, if any, between student perceptions of learning in the classroom and their perceptions of learning in experiential learning experiences?
4. What are the statistically significant differences, if any, between student perceptions of learning in the classroom and their perceptions of learning in experiential learning experiences based on class standing (Freshman, Sophomore, Junior, Senior)?

Definition of Terms

The following definitions are included to clarify terms used in the proposed study:

Alternating Cooperative Education. Alternating cooperative education is a cooperative education model that requires participating students to alternate quarters or semesters of full-time employment with quarters or semesters of full-time study (Gould, 1987).

CEIA. Cooperative Education and Internship Association. This association evolved from the Cooperative Education Association (CEA).

Cooperative Education. Cooperative education is a structured educational strategy integrating classroom studies with learning through productive work experiences in a field related to a student's academic or career goals. It provides progressive experiences in integrating theory and practice. Co-op is a partnership among students, educational institutions and employers, with specified responsibilities for each party (N.C.C.E., 2006).

Cooperative Education Network. The Cooperative Education Network (CEN) is a group of over 150 colleges and universities that subscribed to the Attributes of Cooperative Education, with the intention of establishing quality standards for cooperative education programs (CEN, 1996).

Co-op. A shorter term for cooperative education.

Parallel Cooperative Education. Parallel cooperative education is a cooperative education model permitting students to combine part-time employment with full- or part-time study (CEN, 1996).

Internships. Internships are defined as single-term (semester or quarter) work-based learning experiences, usually offering students optional or mandatory academic credit as part of this experience.

Work-based Learning. Work-based learning, sometimes referred to as experiential learning, is an umbrella term that includes a variety of models such as apprenticeships, cooperative education, internships, service learning, “sandwich” programs, shadowing, and externships designed to promote student learning outside of the traditional classroom model (Linn, 1999).

WACE. World Association for Cooperative Education.

Methodology

The following section describes the methodology and considerations that were used while conducting the study. This section explains the (a) population, (b) sampling procedures, (c) data collection, and (d) general procedures. Also presented are the assumptions, delimitations and limitations, and organization of the proposed study.

Population

The population for this study included the students at the Rosen College of Hospitality Management at the University of Central Florida. This population was selected so that the study could focus on students in a hospitality curriculum that was based on classroom and experiential learning experiences. The student population at the Rosen College was about 1,700 students and, therefore, provided a large enough sample size to determine significant differences among student responses. Also, all hospitality majors at the university had an experiential learning requirement they were required to fulfill in order to graduate.

Sample

A stratified cluster sample of classes offered at the Rosen College of Hospitality Management was selected for this study. The sample was stratified by selecting four sections of each of the following courses: (a) HFT1000 (b) HFT2220, (c), HFT3540, (d) HFT4755, and three sections of (e) HFT 4295, which was the capstone course, typically

taken in a student's final semester. These classes were selected in order to attempt to survey even numbers of students with different class standing (Freshman, Sophomore, Junior, Senior), as well as those students participating in the curriculum's capstone course. The four sections with the most students enrolled in them were selected for this study. This allowed the opportunity to survey 19 sections comprised of approximately 950 students. This sample was large enough to detect statistical significance of mean differences in responses collected.

Data Collection

A letter of consent (Appendix A) was provide to all potential respondents as part of the data collection process.The Predicting Learner Advancement through Cooperative Education (P.L.A.C.E.) instrument was used in order to collect data for the study (Appendix B). The P.L.A.C.E. instrument was created, tested and validated by a group of researchers in 2001 (Parks, Onwuegbuzie, & Cash, 2001) and has 34 items pertaining to student career, academic, and personal growth. The P.L.A.C.E. instrument was developed to be a standardized instrument measuring pre-graduation outcomes in four areas: (a) career development, (b) academic functions achievement, (c) work skills development, and (d) personal growth/development (Parks et al.).

General Procedures

After receiving approval for the research from the University of Central Florida's Institutional Review Board (Appendix C), the instrument was administered to the stratified cluster sample of classes offered at the Rosen College of Hospitality

Management at the beginning of class meetings. The data collected were analyzed using the statistical analysis software Statistical Package for the Social Sciences (SPSS®) Version 11.5 for Windows. The data were analyzed for statistical significance in mean differences in perceptions of student learning in the classroom when compared to perceptions of student learning in experiential learning experiences.

Assumptions

The following major assumptions were made in this study:

1. Students selected for this study were representative of hospitality majors attending the University of Central Florida.
2. Survey responses provided accurate factual and attitudinal data.

Limitations and Delimitations

1. The data were delimited to that which could be collected by students present on the days the survey was administered.
2. The data were self-reported data collected from students selected to participate in the research study.
3. The study population was limited to hospitality students attending the institution studied.
4. Information and data were dependent on the accuracy of the data provided by the respondents on the survey instrument.

5. Data were collected using a single survey instrument at one specific point in time. Multiple collections of data in a longitudinal study may yield different findings.

Organization of the Study

Chapter 1 introduced the problem and outlined the limitations of the study. Chapter 2 will present a review of the literature as relevant to the problem of the study. Chapter 3 will describe the context for the study and the methodology used for data collection and analysis. Chapter 4 will present the data and its analysis. Chapter 5 will discuss the findings of the study, the implications for practice, the recommendations of the study, and the need for future research.

CHAPTER 2

REVIEW OF LITERATURE

Introduction

Cooperative education celebrated its 100-year anniversary in the 2005-06 academic year (Sovilla & Varty, 2004), and voluminous research has been produced regarding co-op programs over the past 100 years. This review of the literature focuses on these key areas: (a) history of experiential learning/cooperative education, (b) the difference between cooperative education and internships, (c) a definition for cooperative education, (d) the purpose of cooperative education, (e) benefits for employers participating in cooperative education programs, (f) benefits for students participating in cooperative education programs, (g) benefits for institutions which promote cooperative education programs, (h) experiential learning and the hospitality curriculum, and (h) assessing cooperative education.

History of Experiential Learning/Cooperative Education

The Dean of Engineering at the University of Cincinnati, Herman Schneider, started a cooperative education program in 1906 in order to provide work-based experience to engineering students (Ryder, 1987). Schneider, concerned about the relevance of education to future work, realized that two issues could be addressed through cooperative education. First, most students were already working at least part-time in order to provide for their financial needs. Second, there were components of the engineering curriculum that proved very difficult, if not impossible to teach in the

classroom. Combining work-based and school-based activities for the students would address both of these issues (Grubb & Villeneuve, 1995). Schneider enrolled 27 students in 1906 in his initial co-op program. It was so successful that over 400 students inquired about the co-op program the next year with many of those students applying for admission into the program (Sovilla & Varty, 2004).

Word of the success of the co-op program quickly spread to other institutions and as a result, many inquired about the University of Cincinnati's innovative new co-op program (Sovilla & Varty, 2004). The Polytechnic School of the YMCA Evening Institute (which became Northeastern University) started the second cooperative education program in 1909, and by 1920 seven other institutions and one technical institute had started cooperative education programs (Sovilla & Varty). Most of the first cooperative education programs were primarily at four-year colleges in engineering departments. The cooperative education program at the University of Cincinnati was expanded in 1917 to also include business administration (Ryder, 1987). The university expanded the cooperative education program again four years later in 1921 to include the liberal arts program. The university was hoping to provide an understanding of society to the students who otherwise were on a sheltered campus (Ryder).

The Ohio Mechanics Institute, a two-year private institution, that would later become affiliated with the University of Cincinnati, adopted a cooperative education program in 1937 because they thought that the lure of part-time jobs would attract more students to enroll at the institution (House, 1977). The Ohio Mechanics Institute also was persuaded by local industrial employers who were used to the cooperative education

system at the University of Cincinnati to incorporate the same type program into its two-year associate degree programs (House).

When Cooperative Education was celebrating its 50th anniversary in 1956, there were approximately 60 colleges and universities in the United States with such programs. (Sovilla & Varty, 2004). Cooperative Education had established itself as a viable part of academia in the United States. H. P. Hammond, former president of the Society for the Promotion of Engineering Education, announced at the organization's 40th annual conference that "the most noteworthy, single development in engineering education in the country since 1883 was the establishment in 1906 of the cooperative system" (Hammond, 1933, p. 51) As America moved into the later half of the 20th century, new cooperative programs were initiated at two-year institutions almost as fast as community colleges were being established (Ryder, 1987). As a result of this parallel growth, and the prevalence of employers used to the cooperative education system in the Cincinnati area, all of the community colleges in the Cincinnati area have offered students an opportunity to participate in cooperative education (Grubb & Villeneuve, 1995).

The Higher Education Act of 1965, provided the first opportunity for direct funding of cooperative education programs in 1971. As a result, more than $275 million were allocated to expand and strengthen cooperative education programs in the United States (Sovilla & Varty, 2004). This federal funding laid the ground work for a major expansion in cooperative education programs. Cooperative education programs grew from approximately 60 programs in the late 1950s to programs at 1,012 colleges and

universities in 1986. This was about one third of all institutions of higher education (Sovilla & Varty).

Cooperative Education and Internships

Experiential learning is a broad term referring to multiple programs and systems for providing students in educational institutions with work-based applied learning opportunities. Thomas Groenewald (2004) suggested that there are a litany of terms used including: (a) apprenticeship, (b) articles, (c) candidature, (d) career academics, (e) co-op, (f) experiential learning programs, (g) exchange program, (h) externships, (i) field-based learning, (j) field placements, (k) internships or interns, (l) job shadowing, (m) on-the-job learning/training, (n) practice-orientated education, (o) professional practice, (p) project-based learning, (q) sandwich degree/courses, (r) school-to-work, (s) service learning, (t) summer-hire programs, (u) work-based education/learning and (v) work experience.

Nasr, Pennington, and Andres (2004) suggested that experiential education benefited the student in a tangible manner and "has the potential to produce a student with a higher aptitude for obtaining the soft skills employers in today's market so desperately seek" (p. 13). They also quoted Pierce (1998) describing the co-op experience as the "classroom extended into the marketplace" (p. 13). Dressler (2003) asserted that although there are some fundamental differences, both internships and cooperative education enable students to apply the theory they have learned. Groenewald (2004) continued to explain that in the United States and Canada in particular there was a growing debate as to the differences between cooperative education and internships. Dressler also explained that cooperative education was inherently developmental because

it allows students the opportunity to apply what they are learning as they are learning it. The Experiential Learning Department at the University of Central Florida (2005) defined co-op on its webpage as an academic program that allows students to apply classroom theory in practical work settings and gain personal, academic and work skills over multiple semesters. The webpage further defined co-op for students by stating that co-op includes the following: (a) multiple semesters, (b) major-related, (c) paid, (d) progressively responsible experiences, usually with the same employer, that are (e) structured for learning, and (f) for credit if it will count in a student's degree program (UCF, 2005).

Internships however, typically have had a predetermined duration such as a semester, and are academic courses that allow students to apply classroom theory in a practical work setting and gain personal, academic and work competencies (UCF, 2005). Internships typically are: (a) one semester, usually toward the end of the student's academic program, (b) major-related, (c) usually for credit, (d) may be paid or unpaid, and (e) structured for learning (UCF).

Cooperative education programs allow students progressive responsibility and are in essence a series of structured systematically linked internship experiences which allow the students the opportunity to gain progressive responsibility and progressive opportunity to apply academic work while also gaining specific competencies. Lastly, another key difference that Dressler cited regarding cooperative education programs and internships is that cooperative education opportunities typically start earlier in the

student's academic career while internships are usually one of the last exercises similar to a capstone type experience in which a student may participate.

Cooperative Education: A Definition

When reviewing the literature, it is obvious that there are many variations of definitions of a cooperative education program (Wilson, 1970). Armsby (1954), Collins (1968), and Stirton (1968) described cooperative education as alternating periods of academic study and employment where there is a close relationship between academics and employment. Armsby, Collins, Stirton, Seaverns (1970), and Wooldridge (1969) described cooperative education programs as planned, supervised, organized programs which enhance self-realization. Almost 10 years earlier, Wilson and Lyons (1961) described cooperative education as work experience included in graduation requirements. More recently, Contomanolis (2005) wrote that "cooperative education is a distinct educational model that blends traditional classroom and laboratory preparation with industry based work experience (p. 11).

The National Commission for Cooperative Education (NCCE) which was formed in 1962 to promote cooperative education (Carlson, 1999; Sovilla, 1998) defined cooperative education in 2002 as (see appendix D):

> . . . a structured educational strategy integrating classroom studies with learning through productive work experiences in a field related to a student's academic or career goals. It provides progressive experiences in integrating theory and practice. Co-op is a partnership among students, educational institutions and employers, with specified responsibilities for each party. (Groenewald, 2004, p. 17)

Jarvis and Wilson (1999) suggested a different definition, "A form of education in which the school and the occupational field cooperate in order to provide a joint educational programme with alternate attendance in both school and work" (p. 37).The Accreditation Council for Cooperative Education (A.C.C.E.) is the accrediting organization for cooperative education programs (Appendix E) in the United States (A.C.C.E., 2006).

A.C.C.E. identifies four specific forms of cooperative education programs, full-time alternating, parallel, combination alternating, and combination parallel (Appendix F). Full-time alternating involves a formalized alternation of full-time classroom study with periods of full-time work experience approximately equal in length to the classroom periods. Parallel programs involve, at least, a half-time student, and the institution will have in place a formalized plan for a work experience component which will encompass approximately one-half of a regular work-week in length. Finally, combination alternating and combination parallel plans meet the defining features of both alternating and parallel programs (A.C.C.E.).

Although there are numerous definitions which vary slightly, the two main forms of cooperative education are parallel programs and alternating programs (Grubb & Villeneuve, 1995). Alternating cooperative education programs have students work full-time without attending school that term and then alternate the focus so that students go to school full time without working the next term. This alternating process is repeated until the program is over. Parallel cooperative education programs have students both working

and attending school at the same time, or parallel to each other. Both alternating and parallel programs have distinct advantages.

One of the advantages of an alternating cooperative education experience is the ability for students to focus 100% on both their work experiences and their education without distractions often created when students try to both attend school and work at the same time (Grubb & Villeneuve, 1995). One of the more notable advantages of a parallel cooperative education experience is ability for students to both work and attend school at the same time. This allows them to continuously apply the theory they are learning in a practical way and focus on specific learning outcomes afforded through experiential learning. Parks (2003) showed that there are no significant differences between the learning outcomes achieved by students in both models.

Not only can educational institutions distinguish themselves with alternating and parallel cooperative education programs; many also distinguish themselves based on whether their particular experiential education programs are voluntary or mandatory for students. For instance, the University of South Carolina has required all its students to complete an internship prior to graduation (Moody, 2002). Southall, Nagel, LeGrande, and Han (2003) explained that yet another distinction between experiential learning programs was those which are discrete and those which are metadiscrete experiences. Discrete experiences can be described as practica or internships that occur away from the classroom. Metadiscrete experiences are practica or internships that also occur away from the classroom but under the supervision and guidance of a professor/mentor (Southall et al.). Discrete experiences would not be considered experiential learning

experiences because experiences must be supervised in order to fit the model of experiential learning programs.

The Purpose of Cooperative Education

As a result of multiple definitions of cooperative education, Wilson (1970) attempted to summarize most defined cooperative education programs as a means to affect behavioral changes by achieving specific objectives:

> It is one thing to criticize the efforts of others to define cooperative education or even to point in the direction of its essence; it is quite another to fashion a meaningful definition around that essence . . . Cooperative education is of the class of things called education and though unique it has characteristics in common with other things called education, vocational education, computer assisted education, higher education. What is common is that each, whether substantively, methodologically, or in terms of level is a part of a process of behavior change through experience. As used here behavior change is understood to mean modifications of cognitive, affective and psycho-motor behavior. Because the possibilities of change are almost infinite it is necessary that the particular behavior changes desired be specified. These specifications are the educational objectives of institutions, of programs, or of particular courses of study. (p. 2)

Wilson (1970) continued to explain that not all institutions will have the same objectives, but that most institutions would share three common objectives: (a) to assist students in their vocational development, (b) to assist students in their personal development, and (c) to assist students in their social development. Wilson asserted that these three common objectives were developmental in nature and are achieved by the student's engagement in developmental tasks. Havighurst (1948) described developmental tasks as:

> . . . those things which constituent healthy and satisfactory growth in our society. They are the things a person must learn if he is to be judged and to judge himself to be a reasonably happy and successful person. A developmental task is a task

> which arises at or about a certain period in the life of the individual, successful achievement of which leads to his happiness and to success with later tasks, while failure leads to unhappiness in the individual, disapproval by society, and difficulty with later tasks. (p. 6)

Colleges and universities have designed curriculums involving developmental tasks which help students identify values, demonstrate socially responsible behavior, develop intellectual skills and competencies, and select and prepare for employment. Such curriculums have been developed because education is a process of changing behavior through experience; and therefore, experience should be viewed as the all inclusive concept defining cooperative education (Wilson, 1970). Southall, Nagel, LeGrande, and Han (2003) explained the differences between discrete learning experiences which are unsupervised engagements away from the classroom and metadiscrete experiences which are supervised learning experiences away from the classroom. Regardless of the kind of experience, it "may be of great value" and may "be a source of new learning" (Wilson, p. 3).

Wilson painted a word-picture of the value of experience by comparing the experiences to those of a person who decides to climb a mountain simply because it is there:

> This situation is illustrated by the person who climbs the mountain only because it is there. Numerous benefits may accrue from this total experience: a stronger and healthier body; increased skill in mountain climbing; new knowledge about the terrain; greater confidence in one's self. But these are not goals of the experience; they are, rather, incidental (albeit valuable) outcomes of an experience engaged in for no reason other than the desire to engage in it. (p. 3)

Wilson (1970) contrasted incidental and random experiences to goal directed experiences which are "experiences engaged in not for their own sake, but because they

lead to some other desired end . . . education is a goal directed experience (p. 4)." Wilson concluded that "the nature of cooperative education is with education in which the learning experiences have been carefully planned in the light of educational objectives to be achieved" (p. 4).

Career Benefits for the Students

There are also many benefits for students who participate in a cooperative education program including personal, academic, work and career related outcomes(Dressler & Keeling, 2004). For instance, students in an experiential education program have the opportunity to learn about different jobs, industries, and specific occupations. This helps students who may not be aware of what it is that they want to do after they graduate start to explore some real options. Dressler and Keeling described what many cooperative education practitioners have experienced: "Most practitioners can tell story after story of students who come to their program as hesitant and confused freshman or sophomores and leave as seniors with grace, confidence, and a bright future ahead of them" (p. 217).

Another benefit according to Grubb (1995) was the opportunity for a student participating in a cooperative education program to apply what they learn in the classroom in an actual, real-world work-experience, and vice-versa. Many times there was also an opportunity for students participating in a cooperative education program to be directly placed into a professional position with their employer after graduation without an interview. This outcome of full-time employment in the field the student

studied is particularly powerful. And of course there was the benefit for students of earning money while they were in school (Grubb).

Students who participate in cooperative education programs gain the necessary experience to have a successful start to their career (Grubb, Dickenson, Giordano, & Kaplan, 1992). Experiential education programs help solve the chicken-and-egg situation that frustrates many students as they graduate: To get a job, one needs experience; but to get experience, one needs a job (Stock, 2004).

Most students have benefited from the increased partnership and relationships between their particular schools and employers because of the unique relationship created with students participating in cooperative education programs (Grubb, 1995). However, according to the National Association of Colleges and Employers (N.A.C.E.), the average employer offers 44% of its interns full-time employment upon graduation (Stock, 2004).

Marilyn Mackes, Executive Director of the National Association of Colleges and Employers, claimed:

> As a rule, employers look for job candidates who have the kind of work-related experience that students can gain through an internship or co-op program. Participating in and internship or a co-op program is one way students can give themselves a big edge in the job market (Stock, p. 22).

Learning Outcomes of Experiential Learning

The documented benefits of experiential learning or cooperative education programs is significant and includes: (a) improved student self confidence, self-concept, and improved social skills (Gillan, Davies, & Beissel, 1984). (b) increased practical knowledge and skills (Williams et al. (1993), and (c) enhanced employment opportunities

(Clark, 1994; Sharma, Mannel & Rowe, 1995). Many programs have taken note of these benefits. As a result, the placement of students in various organizations as trainees has become an academic requirement to foster the work experience so that students will attain the necessary skills to supplement their theoretical training (King, 1994).

Of all of the possible benefits available to students who participate in an experiential learning program, specific learning outcomes are of utmost importance. Identifying specific learning outcomes associated with participation in an experiential learning program is a powerful way to demonstrate the academic value of experiential learning. Fletcher (1989) identified three groups of learning outcomes as a result of participation in an experiential learning program into which much of the literature reviewed can be classified: personal development, career development, academic development. Parks, (2003) added professional/work-skills development as a fourth group of learning outcomes. Parks' research supported that students reported increased development of learning outcomes in these areas progressively over multiple semesters, although, the rate of increase in learning varied. A.C.C.E. has required that accredited cooperative education programs ensure that student learning outcomes have been established for the program and assessment tools are used to measure the accomplishments of those student learning outcomes (A.C.C.E., 2006).

Nasr, Pennington, and Andres (2004) claimed that cooperative education prepares students for the workplace by allowing students to "take what they have learned in the classroom and apply it to something considerably more than situational classroom simulations (p. 13)". Marini and Tillman (1998) commented that students enrolled in a

cooperative education program are able to enhance specific skills demanded by employers such as their critical thinking, communication, team-work, and problem solving skills.

Recognizing that new CPAs are vital to the future, many accounting firms have committed a large part of their human resources budgets to internships to try to close the gap between students' understanding of public accounting and workplace realities (Lauber, Ruh, Theuri, & Woodlock (2004). Regardless of the industry, many executives have found that business-sponsored interns free up executive time for top-of-the-basket deadlines and strategic planning (Kelsey, 2002).

Phillips (1978) concluded that:

> A co-op program can provide the company with a continuous supply of qualified individuals who, because of their co-op experience, are better prepared to assume management responsibilities in the future . . . Co-op students who are hired permanently usually remain with the company longer and progress faster than regular college hires. (p. 20)

Langford and Cates (1995) investigated the contribution of cooperative education towards a student's development of communication and thinking skills, or those skills commonly referred to as soft skills. They concluded that these soft skills of communicating and thinking "are more sought after by employers than technical capabilities and high grade point averages" (p. 13).

Benefits for Educational Institutions

Grubb (1995) wrote that one of the most recognized benefits of cooperative education programs for educational institutions is the increased connection with employers. This connection benefits institutions in two ways. First, it helps institutions

provide recruiting opportunities for students to participate in, as well as direct placement opportunities for students who perform well in the cooperative education placements. Secondly, it helps an institution stay in touch with cutting-edge information about what is relevant in participating industries. This information can transform the classroom into a more relevant experience.

Another benefit for educational institutions is the fact that cooperative education programs contribute greatly to the overall educational process of their students (Grubb, 1995). It is widely accepted that cooperative education programs significantly contribute to a student's learning and academic performance through enhanced self-esteem as a result of participating in a cooperative education learning experience (Eakins, 1997).

Hofmann (2003) explains that "teaching management outside a business setting is just like teaching swimming without putting students in the water". He stated,

> It's true, I've been teaching for almost a quarter of a century, but I've yet to meet another professor who took a course in how to be a professor. We learned by doing, not by watching from the sidelines. If business schools don't ensure that all students, management students in particular, get this type of exposure through a required practicum of some form or fashion before they graduate, then we have failed them. . . Many educators entertain the assumption, a false one, that with enough knowledge about how to do something, one can do it. Well, folks, if you believe that works, read everything you can about flying and then go jump off a tall building. (p. 50)

Rogers (1969) described two types of learning: cognitive (meaningless) and experiential (significant). Cognitive learning consists of academic knowledge, such as rote memorization of music trivia. Experiential learning is applied knowledge, for example effectively managing an event after learning the fundamentals of event management. Rogers explained that one of the key elements of experiential learning is

that it addresses the specific needs and wants of the learner, allowing the learner to experience what they are studying. The theoretical work done on experiential learning is useful to both educators and learners (Kolb, 1976; Rogers 1969; Rogers & Freiberg, 1994). In contrast to a cognitive learning activity, a discrete experiential learning activity, such as a practicum, benefits learner and teacher by increasing the overall knowledge of both (Southall, Nagel, LeGrande, & Han, 2003).

All universities have particular strengths within their curricular offerings. Academics and practitioners have also identified the melding of theory and practice through internship experiences as a critical precursor to a future career success. (Cawley, 1999; Moriarty, 2000; Parkhouse, 2001; Pitts, 2001; Southall et al., 2003). Southall, Nagel, LeGrande, & Han (2003) explained that since employers are emphasizing practical experience, in addition to a strong background in theoretical foundation, successful sport management programs should maximize experiential leaning experiences before students leave the university setting. Cawley reported that Jeff Graubard, President of The Graubard Group, a sport marketing firm, has hundreds of resumes of potential employees and is only interested in the two or three applicants who have actually worked in the field.

Since students who participate in a cooperative education program tend to have higher placement rates upon graduation than students who do not participate in such a program, it benefits educational institutions to be able to tout these higher placement rates (Grubb, 1995). Weisz and Chapman (2004) claimed that not only do cooperative

education students enjoy higher placement rates, but they also earn higher grades and progress through their academic programs more quickly.

Experiential Learning and the Hospitality Curriculum

The documented benefits of experiential learning or cooperative education programs are significant and include: (a) improved student self confidence, self-concept, and improved social skills (Gillan, Davies, & Beissel, 1984). (b) increased practical knowledge and skills (Williams et al. (1993), and (c) enhanced employment opportunities (Clark, 1994; Sharma, Mannel & Rowe, 1995). Many programs have taken note of these benefits and as a result, the placement of students in various organizations as trainees is an academic requirement to foster the work experience so the students will attain the necessary skills to supplement their theoretical training (King, 1994).

Hospitality programs have embraced these benefits in their curricula as well. The Rosen College of Hospitality Management at the University of Central Florida has required all undergraduate students to enroll in three academic credit hours of paid, supervised, work experience in the hospitality industry. Students have fulfilled this requirement through the university's cooperative education program which has been managed by the university's cooperative education faculty (University of Central Florida, 2006). It has been understandably easy for students at the Rosen College of Hospitality Management to gain this required experience. The web page for the College boasts, "Our school is located in the largest learning laboratory in the world for hospitality and tourism, Orlando! Students at the Rosen College of Hospitality Management benefit from studying in a city that boasts 42 million visitors each year, and has 120,000 hotel rooms,

4,000 restaurants, and 75 theme parks and attractions." (University of Central Florida, 2006c)

Even programs that are located in hospitality business deprived locations have recognized the irreplaceable benefits of their students participating in an experiential learning program. The School of Hotel Administration at Cornell University required all of its undergraduate students to gain a minimum of 800 hours of practical work experience within the hospitality industry prior to graduation (Cornell, 2006). As a result of the dearth of local opportunities for students to engage in the hospitality industry, "students are encouraged to apply for summer employment and internships for the classroom break period beginning at the end of May until the end of August" (Cornell). Hospitality programs, not located in a high tourism district, have also adapted by creating their own hospitality operations. The Cornell website continues, "Students can also take advantage of the school's own Statler Hotel and J. Willard Marriott Executive Education Center for part-time, paid work. Positions in food and beverage service, guest services, accounting, Banfi's restaurant, front-desk operations, housekeeping, and banquet services are available during the school year and during summer and intersession breaks" (Cornell).

The Harrah Hotel College at the University of Nevada, Las Vegas also required its students to enroll in 3 hours of academic credit awarded through their internship program requiring a minimum of 1,000 hours of industry experience (University of Nevada, Las Vegas, 2006). The School of Hotel and Restaurant Management at the University of Northern Arizona (NAU) also has required their students to gain a

minimum of 800 hours of hospitality industry experience. NAU students also may gain experience on campus at the Inn at NAU (University of Northern Arizona, 2006). The Dedman School of Hospitality at the Florida State University has required its students to work a minimum of 1,000 hours in the hospitality industry (Florida State, 2006).

The Conrad H. Hilton College at the University of Houston described its two required academic hours of hospitality practicum this way, "Employment in a hospitality setting . . . in an instructor approved learning situation and participation in a number of career preparation activities" (University of Houston). As to why hospitality programs require that their students successfully participate in supervised work experience in the hospitality industry, Waryszak (2000) explained:

> Work experience gained through cooperative education placements can help in the induction process so that tourism organizations may be better able to retain their employees and foster their performance. It is important, therefore, to both educational institutions and industry, that students have realistic perceptions of their prospective entry to these organizations. If educators and employers know how students perceive their organizational placements environment, they can better prepare the students and organizational processes for successful entry to the labor force. (p. 84)

Even from its remote location, The School of Hotel Administration at Cornell University explains their graduation requirement to prospective students this way, ". . . you must have worked 800 hours . . . in the hospitality/service industry. The objective of the Practice Credit requirement is to ensure that your education has the essential balance between theory and practice" (Cornell)." Purcell and Quinn (1995) wrote "that one of the main purposes of Work Experience is to enable industry to demonstrate the career potential that is available which involves providing appropriate management learning opportunities and enabling students to obtain insight into the management and

supervision skills and knowledge they will require in their intended careers" (p. 11). Busby (2005), explained that many tourism programs are based in business schools, "or at least grounded in the business studies vocational area, and, as a result, tend to incorporate a range of links with industry . . . industry links occur through supervised work experience . . . involvement with program validation, guest speakers, and field trips . . . supervised work experience appears to be probably the single most important link" (p. 93).

Busby outlined seven specific purposes for the "tourism placement" (p. 94): (a) to experience employment and, where appropriate, accept responsibility for the completion of tasks and the supervision of others; (b) To develop key graduate attributes and skills; (c) to acquire further practical skills and experience; (d) to obtain an insight into management and management methods; (e) to gain greater maturity and self-confidence; (f) to be involved in the diagnosis and analysis of problems and (g) to develop attitudes and standards appropriate to career objectives.

Richards (1995) and Cooper and Sheperd (1997) asserted that the inclusion of work experience into the hospitality curriculum was intended to provide an appropriate vocational aspect to what might be mostly an academic curriculum. Evans (2001) wrote that the placement experience provided a practical foundation for the final year of study in which students attempt "to find solutions to real business problems" (p. 28).

Busby (2005) reported several hospitality students' comments regarding their experiential learning placement experience.

> Application of theory into practice was priceless, e.g. working for the (travel) wholesaler rather than reading about it made the whole distribution channel model

> much more understandable . . . character building . . . a great way of studying further the company you were on placement with . . . a great introduction to the working world especially for those who had never previously worked full time, particularly in the areas of authority. (p. 102)

Busby also reported comments from recent hospitality graduates reflecting back on their placement experience:

> In summary, the industrial placement at Thomas Cook (formerly C&N AG) was a very good experience as it gave me the opportunity to work in a variety of different departments. I learned about the processes and tasks and managed to build up a personal network throughout the company which is now of great help for my current job at Thomas Cook as Planning and Marketing Manager. Furthermore, this placement served as a first orientation in order to find out my strengths and weaknesses on the job and which area of work I wanted to focus on after my degree . . . overall the placement was a very good opportunity to establish a contact with a potential later employer and to get an insight into the processes of a tour operator. (p. 103)

Regardless of the level of knowledge acquired by the student at their experiential learning placement, the placement experience will impact their classroom experience (Morgan, 2004). Although some (Cooper & Sheperd 1997; Richards, 1995) asserted that the experiential learning or work experience placement may simply add a vocational slant to what might otherwise be a predominantly academic curriculum, The cooperative education movement has never intended to sway the focus of the curriculum to vocational issues. Cooperative education programs have consistently been academic in nature with the central focus to increase student learning. Herman Schneider launched the first cooperative education program 100 years ago, and as Sovilla and Varty (2004) wrote:

> . . . he became convinced that many professional concepts and skills could not be learned effectively in the classroom, but required practical experience for their understanding and mastery. After several years of struggling to find a better way to educate engineering students, he began to test some of his ideas with faculty and industrialists. In due course he developed his plan for hitching theory and practice together, the cooperative plan of education. (p. 4)

A group of universities, colleges and employers founded the World Association for Cooperative Education (WACE) in 1983. WACE is an international organization for the purpose of helping individual faculty members and institutions to "forge close ties between the classroom and the workplace" (Busby, 2005, p. 100). In their online brochure, WACE claimed that "thousands of colleges have found work-integrated learning valuable for enhancing the curriculum, attracting and retaining enrollment, and educating students who succeed after college . . . there is vast potential for development of applying practical, real-life experiences to students' classroom learning throughout the world" (WACE).

Branton et al. (1990) claimed that cooperative education programs have not been accepted by others in mainstream higher education because of a lack of research demonstrating the academic progress and success of cooperative education students as compared to students who did not participate in cooperative education programs. Faculty support has been critical to co-op programs being accepted as an academic option (Matson & Matson, 1995). Hartley and Smith (2000) wrote that faculty support is essential to sustain the academic role of cooperative education. They claimed that one of the most effective means of mustering and maintaining faculty support of cooperative education is the assessment of learning outcomes. The value of cooperative education in higher education, and the benefits that it offers, can only be proven through assessment, and it only becomes ideally useful for education through the assessment and validation of educational learning outcomes (Nasr, Pennington, & Andres, 2004).

Assessment of Cooperative Education

Cooperative education is a distinct educational model (Contomanolis, 2005) "that blends traditional classroom preparation with industry based work experience" (p. 11). However, "one wonders how many professors ever ask or listen to what the experienced co-op student has to say" (Homer, 1987, p. 67). Contomanolis explained why common professors may discount the experience of a co-op student. "On the surface, this knowledge gap may appear understandable given the philosophical orientation of an educational model such as cooperative education that emphasizes the value of what is learned by the student during the work experience *outside the classroom"* (p. 11). Heinemann and DeFalco (1990) explained this external orientation of cooperative education held by many faculty this way:

> A major reason cited for the academy indifference to cooperative education is that many teaching faculty and professional educators do not recognize that learning, thinking and general professional development can be achieved by using the work environment as a classroom with work serving as an instructional vehicle. (p. 38)

Not all faculty members have this external orientation to cooperative education. As a result of a national study, Wilson and Lyons (1961) reported that faculty believed student cooperative education experiences positively affected the classroom learning environment. Canjar (1987) described his experiences with cooperative education students in the classroom at the University of Detroit:

> It became obvious to me that cooperative education enhances the academic program. My teaching thermodynamics was more vibrant, more alive, more exciting, because those students had a reference point that they could base this theory on. (p. 3)

The value of cooperative education as an academic function having an academic contribution has been in question since its inception (Nasr, Pennington, & Andres, 2004). Branto et al., (1990) claimed that cooperative education continues to remain on the fringes of mainstream higher education. Simms, (1985) wrote that cooperative education programs faced an ongoing challenge of gaining recognition within institutions of higher learning as a worthwhile educational component. Branton et al. asserted that the lack of acceptance of cooperative education by others in mainstream higher education was due to a lack of research demonstrating the academic progress and success of cooperative education students as compared to students who did not participate in cooperative education programs. A common topic of discussion among co-op practitioners has been in regard to how faculty support can be generated. A growing area of research interest has been in understanding the relationship of cooperative education to the core academic curriculum (Contomanolis, 2005)

Cates and Jones (2001) claimed that cooperative education has much to contribute to the on-going debate regarding assessment in higher education. In fact, they insisted that cooperative education provides a model for assessing learning outcomes in higher education. Hartley and Smith (2000) added regarding the importance of assessment:

> Although the assessment of learning is not new, the current emphasis in higher education is largely being stimulated by the regional accreditation agencies in the United States . . . The institution must have effective assessment programs to demonstrate that the institution is accomplishing its educational and other purposes and that the institution can continue to accomplish its purposes and strengthen its educational effectiveness. (pp. 42-43)

Hartley and Smith (2000) continued to explain that the pressure from accreditation agencies regarding the assessment of student learning outcomes is being

reinforced by the "growing demand by the public for accountability in higher education" (p. 43). The value of cooperative education in higher education, and the benefits that it offers, can only be proven through assessment. Although cooperative education appears to be ideal for the development of both soft and hard skills in students, it only becomes ideally useful for education through the assessment and validation of educational learning outcomes (Nasr, Pennington, & Andres, 2004).

Matson and Matson (1995) insisted that faculty support was critical to the process of co-op programs being accepted as an academic option. "Faculty involvement helps to ensure that cooperative education will approach parity with other forms of learning, and will be seen as an important educational system" (Kubiak, Page, & Riggio, 1995, p. 64). Hartley and Smith (2000) wrote that faculty support is essential to sustain the academic role of cooperative education. They claimed that one of the most effective means of mustering and maintaining faculty support of cooperative education is the assessment of learning outcomes. Stull and DeAyora (1984) explained that some faculty will support cooperative education if they believe that it will facilitate classroom learning. Cates and Jones (1999) added that it is for this reason that it is beneficial for co-op to be linked with academic goals.

Palomba and Banta (1999) defined assessment of student learning outcomes as "the systematic collection, review, and use of information about educational programs undertaken for the purpose of improving student learning and development" (p. 4). Hartley and Smith (2000) asserted that assessment of student learning outcomes provides an excellent opportunity for cooperative education programs to document the academic

outcomes as a result of students' participation in such programs. They also claimed that assessment is a specific strategy for strengthening and diversifying the relationship between the co-op office and other academic units.

They went on to explain the benefits produced from assessing cooperative education programs:

> One mechanism for strengthening the linkage between cooperative education and academic goals is assessment . . . The assessment effort has produced information that has helped improve student learning. In addition, it has linked co-op more closely with the University's educational goals and enhanced the relationship with faculty. Finally it has yielded data that support various institutional initiatives, such as student recruiting. (p. 41)

Branton et al. asserted that the lack of acceptance of cooperative education by others in mainstream higher education was due to a lack of research demonstrating the academic progress and success of cooperative education students. Cooperative education practitioners from all around the world have responded by defining and evaluating specific competencies or outcomes that students should gain from education.

Specific learning objectives have been formed from these identified competencies (Dressler & Keeling, 2004). Parks, Onwuegbuzie, & Cash (2001) developed the Predicting Learning Advancement through Cooperative Education (P.L.A.C.E.) instrument to evaluate student perceptions of learning outcome achievement. The P.L.A.C.E. instrument has 34 items pertaining to student career, academic, and personal growth. Many of these items have been identified by the Accreditation Board for Engineering and Technology in the USA (ABET, 2003, Dressler &Keeling), and many are skills identified by employers in the U.S. Secretary's Commission on Advancing Necessary Skills document (SCANS, 1990). The P.L.A.C.E. instrument was developed

to be a standardized instrument measuring pre-graduation outcomes in these four areas: (a) career development, (b) academic functions achievement, (c) work skills development, and (d) personal growth/development (Parks et al.). Heinemann, (1988) emphasized: "Much more needs to be known about the educational role of cooperative education. Research is needed to have the learning potential understood by individuals within and outside the field" (p. 115). The P.L.A.C.E. instrument was used with permission in this study to evaluate and contrast student perceptions of learning in both their cooperative education assignments and their classroom environments.

CHAPTER 3

METHODOLOGY

Introduction

The following section describes the methodology and considerations used while conducting the study. This section explains the (a) population, (b) sampling procedures, (d) instrumentation, (e) data collection, (f) quantitative analysis, (g) ethical considerations, (h) general procedures, (i) assumptions, (j) delimitations and limitations, (k) research questions, and (l) organization of the proposed study.

Population

The population for this study was the students at the Rosen College of Hospitality Management at the University of Central Florida. This population was selected so that the study could focus on students in a hospitality curriculum that was based on classroom and experiential learning experiences. The student population at the Rosen College was about 1,700 students and therefore, provided a large enough sample size to determine significant differences among student responses. Also, all hospitality majors at the university have an experiential learning requirement they must fulfill in order to graduate. These experiences were all similar, structured with learning objectives, reflection assignments, assessment processes, supervisied and monitored by the same two faculty members for all students, minimizing some of the inherent variability in students' experiences, therefore holding some variables constant.

Sample

A stratified cluster sample of classes offered at the Rosen College of Hospitality Management was selected for this study. The sample was stratified by selecting four sections of 1000-level courses, 4 sections of 2000-level courses, 8 sections of 3000-level courses, and 12 sections of 4000-level courses. More upper-level (3000 and 4000) division courses were selected because more of the students enrolled in upper-division courses had participated in the cooperative education requirement than those enrolled in the lower-level (1000 and 2000) division courses. Included in the 4000-level courses was HFT 4295, which is the capstone course and is typically taken in a student's final semester of enrollment. This course, in particular, was selected in an effort to capture data from students near the end of their programs. The course sections with the highest enrollments for the spring 2006 semester were selected for this study. Once a course was selected, the course instructor was contacted to request permission to come into the class and distribute the survey. There were a total of 1,062 students enrolled in the classes selected to participate in this study. Some students were enrolled in more than one class that was selected to participate in this study. Students were asked to complete only one survey instrument and therefore the number of students who participated in the study was significantly less than the enrollment number. All surveys received were able to be used, and there were 681 students who responded to the in-class surveys.

Instrumentation

The Predicting Learner Advancement through Cooperative Education (P.L.A.C.E.) instrument (APPENDIX B) was used in order to collect data for the study.

The P.L.A.C.E. instrument was created, tested and validated by a group of researchers in a previous study (Parks et al., 2001). In addition, the people involved with the committee who developed the P.L.A.C.E. averaged almost 20 years of experience in the field of cooperative education.

The instrument was also modified based on exploratory factor analysis and extensive input from a committee of cooperative education professionals. The modified P.L.A.C.E. instrument consists of twenty-nine 7-point rating-scale items as well as four open-ended questions (Parks et al., 2001). This study did not take advantage of the qualitative items, but only used the 29 items that could be used in a quantitative analysis.

The items on the P.L.A.C.E. instrument pertained to student career, academic, and personal growth. The P.L.A.C.E. instrument was developed to be a standardized instrument measuring pre-graduation outcomes in these four areas: (a) career development, (b) academic functions achievement, (c) work skills development, and (d) personal growth/development (Parks et al., 2001). Parks et al. believed that developing the P.L.A.C.E. instrument would help create a base of research by documenting the impact of students' participation in cooperative education program upon student learning outcomes.

The P.L.A.C.E. instrument was adapted from the Cooperative Education Evaluation which was constructed by a committee of the Cooperative Education Network (Parks et al., 2001). Since the Cooperative Education Network members all subscribed to the attributes for co-op, this held many variables constant to study students across

different institutions. Parks et al. tested, validated and published the validation results regarding the P.L.A.C.E. instrument in the Journal of Cooperative Education.

Parks (2003) explained the original pilot study process for the P.L.A.C.E. instrument:

> In addition, pilot studies of the PLACE instrument were conducted in April and June 2001. Participating schools included Florida Atlantic University, Pennsylvania State University, the University of Central Florida, and Valdosta State University. Analysis of the data collected from the pre-pilot was used as part of the validation of the instrument. The PLACE instrument was subjected to an extensive validation process prior to use. The initial version, known as the Cooperative Education Evaluation, was administered to over 3,600 students between March and June 1999. After eliminating responses from students who had not worked their first co-op period, a total of 2,309 usable survey responses were analyzed. (pp. 46-47)

Parks (2003) explained the process used to assess the structural validity of the P.L.A.C.E. instrument:

> The Cooperative Education Evaluation contained 34 items. Exploratory factor analysis was employed to assess the structural validity of the instrument. . . Eleven of the items were eliminated from the draft instrument. These items failed to load at .50 or above or did not load in coherent fashion. The deleted items included: ability to design a system, component, or process to meet desired needs; understanding of professional and ethical issues; understanding of the relationship between academic theory and practical application; broad education necessary to understand impacts of solutions in a global and societal context; understanding of personal abilities and limitations; ability to use techniques, skills, and modern tools necessary for practice within the field of study; understanding of courses needed that would be helpful or important to career success; knowledge of contemporary issues related to the field; ability to analyze and interpret data; ability to manage personal finances; and tolerance and understanding of others. (p. 47)

Parks (2003) concluded that the remaining 22 items suggested 3 logical factors: career development, academic development, and work-skills development. The following reliability estimates were determined for the three sub-scales using coefficient

alpha: .91 for Work-Skills Development, .86 for Career Development, and .85 for Academic Functions/Achievement. A reliability estimate of .94 was found for the entire scale According to Parks et al., (2001), "the revised version of the CEE, which was termed Predicting Learner Advancement through Cooperative Education (i.e., P.L.A.C.E.), appeared to generate reliable and valid scores for the underlying sample" (p. 27).

In addition, Parks (2003) conducted an extensive peer review of the instrument. As a result, seven items designed to measure students' personal outcomes were added to the instrument. Specific response options were added to each answer choice (i.e., 7 = increased significantly, 6 = increased moderately, 5 = increased slightly, 4 = no change, 3 = decreased slightly, 2 = decreased moderately, and 1 = decreased significantly). The addition of specific definitions anchored each response to a specific descriptor, which converted the PLACE instrument to a Likert scale. This change was designed to result in a more sensitive instrument that was better able to discriminate between different populations of students (Parks et al., 2001).

In this study, the researcher modified the P.L.A.C.E. instrument developed by Parks into an instrument comprised of three parts. The first section included 29 items that were derived from the P.L.A.C.E. instrument and asked students to identify only their perceptions of learning in their cooperative education experiences. The second section included the same 29 items as the first section, but this section asked students to report their perceptions of learning only as they related to their classroom experiences.

The third section collected demographic data that were used to identify the different groups of respondents for purposes of analysis.

Data Collection

Data collection began on January 24, 2006, and concluded on February 21, 2006. Each class was visited either at the beginning or ending of a class meeting. Instructions were read aloud to students who agreed to participate in the survey. Students were also informed that participation in the survey process was voluntary and that all responses would be anonymous and kept confidential (Appendix A). The estimated time to complete the PLACE instrument was between 6 and 15 minutes.

This study utilized a causal-comparative research design which attempts to compare groups that are already formed on one or more dependent variables (Huck & Cormier, 1999). The causal-comparative design most often includes at least two groups and one dependent variable (Gay & Airasian, 2000). In this study, students enrolled in the co-op program who had worked one, two, three or more semesters, as well as students who had not participated in the co-op program for any semesters formed groups for comparison purposes. The dependent variables were the 29 survey items measuring students' perceptions of learning as they related to either their classroom or cooperative education experiences.

Quantitative Analysis

The data obtained in this study were analyzed using The Statistical Package for the Social Sciences (SPSS) © 11.5 for Windows. The primary statistical analysis

included paired t-test to compare students' responses regarding their perceptions of learning in the classroom as compared to their perceptions of learning as a result of their cooperative education requirement. An Analysis of Variance (ANOVA) was used to determine significant differences among groups within the sample. Respondents were divided into groups of those who had participated in a cooperative education placement for zero, one, two, and three or more semesters.

Presentation of Ethical Considerations

Permission to gather and to examine data was obtained from the University of Central Florida Institutional Review Board (Appendix C). The survey was completely voluntary, and participants were informed of their rights as participants. Data were analyzed and presented so that no individual subject can be identified.

General Procedures

A stratified cluster sample of classes offered at the Rosen College of Hospitality Management was selected, the instrument was administered during a class meeting and the data collected were analyzed using the statistical analysis software Statistical Package for the Social Sciences (SPSS®) Version 11.5 for Windows. The data were analyzed for statistical significance in mean differences in perceptions of student learning in the classroom when compared to perceptions of student learning in experiential learning experiences. The results of the statistical analysis are reported in Chapter 4. In order to facilitate understanding of the results, tables and accompanying narratives presented in Chapter 4 display and discuss only those items for which significance ($p<.05$) was found

in the analysis. Supportive appendixes (Appendixes G-M) contain the comprehensive results of the analysis for all items regardless of the level of significance.

Summary

A cluster sample of courses offered at the Rosen College of Hospitality management at the University of Central Florida were selected to participate in this particular study. The instrument used in the study was a modified version of the "Predicting Learner Advancement through Cooperative Education" survey (Parks et al., 2001). Pilot studies and input from an expert panel were employed to refine the instrument. A variety of quantitative approaches were used to analyze the data for statistical significance in mean differences in perceptions of student learning in the classroom when compared to perceptions of student leaning in experiential learning experiences. Methods included paired sample t-tests, and Analysis of Variance (ANOVA).

CHAPTER 4

DATA ANLYSIS

Introduction

This study attempted to evaluate, contrast, and compare student perceptions of learning outcomes in both the classroom environment and cooperative education learning assignments. The student respondents (n = 681) completed a modified version of the "Predicting Learner Advancement through Cooperative Education" survey (Parks et al., 2001). The P.L.A.C.E. instrument (Appendix B) uses a Likert-type scale ranging from 1, indicating decreased significantly, to 7, indicating increased significantly. Students were asked to rate their perceptions of learning in the contexts of both their experiential learning experiences and their classroom experiences. Demographic data were also collected from each respondent.

Four research questions guided this study, and the data were analyzed using different descriptive and statistical analyses. The Statistical Package for Social Sciences for Windows (SPSS®), Version 11.5 (SPSS®, 2003) was used to perform all data analyses. The analyses of the data are presented in this chapter.

Description of the Population

The data for this study were collected during the spring 2006 semester at the Rosen College of Hospitality Management at the University of Central Florida. A stratified cluster sample of 28 course sections was selected to participate in this study. The sample was stratified by selecting 4 sections of 1000-level courses, 4 sections of

2000-level courses, 8 sections of 3000-level courses, and 12 sections of 4000-level courses. More upper-level (3000 and 4000) division courses were selected because more of the students enrolled in upper-division courses had participated in the cooperative education requirement than those enrolled in the lower-level (1000 and 2000) division courses. Included in the 4000-level courses was HFT 4295, which is the capstone course, and was typically completed in students' final semester of enrollment. This course in particular was selected in an effort to capture data from students near the end of their curriculum. Tables 1-4 summarize the data regarding the demographic characteristics of the respondents.

Table 1 presents information regarding respondents' gender, class standing and major and minor areas of study. Female students (n = 488) outnumbered male students (n = 191) by a ratio of almost 3:1. Two students did not indicate their gender. Freshmen (n = 38) accounted for 5.6% of the total sample, sophomores (n = 116) accounted for 17% of the total sample, juniors (n = 269) were the largest group within the sample, accounting for 39.5% of the sample, and seniors (n = 252) accounted for 37% of the sample. Six students did not identify their class standing.

As expected, students who declared hospitality management as their major (n = 637) dominated the sample population and accounted for 93.5% of the sample. Students who declared restaurant management as their major (n = 10) accounted for 1.5% of the population. Students who had declared hospitality as a minor (n = 18) accounted for 2.6% of the population. Another 1.5% of the sample (n = 10) indicated that they had

declared another major other than hospitality management, and there were six students who did not indicate their declared major.

Table 1
Student Respondent Demographics: Gender, Class Standing, Major and Minor (n = 681)

Descriptors	Frequency	%
Gender		
Male	191	28.0
Female	488	71.7
Missing	2	.3
Class Standing		
Freshman (completed up to 29 semester credits)	38	5.6
Sophomore (completed up to 59 semester credits)	116	17.0
Junior (completed up to 89 semester credits)	269	39.5
Senior (completed 90 semester credits or more)	252	37.0
Missing	6	.9
Major and Minor		
Hospitality Major	637	93.5
Restaurant Major	10	1.5
Hospitality Minor	18	2.6
Other Major	10	1.5
Missing	6	.9

Note: Not all participants responded to all survey items

Table 2 shows that the majority of students were 18-22 years old (n = 528), and accounted for 77.5% of the sample. The next largest group of students were those between the ages of 23-26 years old (n = 119), and accounted for 17.5% of all respondents. There were 22 students who were between 27-35 years of age (n = 22), and accounted for 3.2% of the respondents. Respondents 36 years old or older (n = 12), were in the minority accounting for only 1.8% of the entire group.

Most of the respondents were citizens of the United States (n = 645). There were however, small numbers of students who indicated that they were permanent residents (n = 14), as well as international students with an F-1 VISA (n = 16).

Table 2
Student Respondent Demographics: Age and Citizenship (n = 681)

Descriptors	Frequency	%
Age		
18-22	528	77.5
23-26	119	17.5
27-35	22	3.2
36-49	6	.9
50 or older	2	.3
Missing	4	.6
Citizenship		
United States	645	94.7
Permanent Resident	14	2.1
International Student (F-1 VISA)	16	2.3
Other	2	.3
Missing	4	.6

Note: Not all participants responded to all survey items

Table 3 reports that all but 65 of the respondents had some level of experience working in the hospitality industry (n = 616). The majority (29.7%) of respondents had over 4 years of hospitality industry experience (n = 202). Although most respondents (88.6%) did have some level of hospitality industry work experience, over 30% had not participated in the cooperative education program yet. The largest group (32.6%) reported having not started their co-op experiences (n = 222). Those reporting that they had one semester of co-op experience (n = 192) were the next largest group accounting for 28.2% of the sample. Next were those who indicated that they had participated in the co-op experience for two semesters (n = 128). More than 18% of the respondents indicated that they participated in the co-op experience for three or more semesters (n = 125).

Table 3
Student Respondent Demographics: Industry and Co-op Experience (n = 681)

Descriptors	Frequency	%
Months of Hospitality Industry Experience		
0	65	9.5
1-12	135	19.8
13-24	87	12.8
25-36	101	14.8
37-48	78	11.5
49 or more	202	29.7
Missing	13	1.9
Semesters of Co-op Participation		
0	222	32.6
1	192	28.2
2	128	18.8
3 or more	125	18.4
Missing	14	2.1

Note: Not all participants responded to all survey items

Table 4 reports that almost 62% of the respondents indicated that they had previous work experience outside of the hospitality industry (n = 421). Of those with prior work experience outside the hospitality industry; 140 respondents (20.6%) had a year or less of such experience, 95 respondents (14%) had 13-24 months of such experience, 65 respondents (9.5%) indicated having 25-36 months of such experience, 55 respondents (8.1%) had 37-48 months of such experience, and 52 respondents (7.6%) indicated having more than 4 years of such experience.

An overwhelming 82% of the respondents indicated that they were not currently working outside of the hospitality industry (n = 558), while 16.4% indicated that they were currently working outside of the hospitality industry (n = 112). Of those currently working outside of the hospitality industry, 33 indicated that they were working no more than 16 hours a week. Another 36 respondents indicated that they were working between 17 and 24 hours a week. Of those currently working outside the hospitality industry, 26

respondents indicated that they were working between 25 and 36 hours a week. Only 13 respondents indicated that they were working more than 36 hours a week outside of the hospitality industry.

Table 4
Student Respondent Experience Non-Hospitality Industry Experience (n = 681)

Descriptors	Frequency	%
Previous Experience Outside Hospitality		
Yes	421	61.8
No	249	36.6
Missing	11	1.6
Months of Previous Non-Hospitality Industry Experience		
0	249	36.6
1-12	140	20.6
13-24	95	14.0
25-36	65	9.5
37-48	55	8.1
49 or more	52	7.6
Missing	25	3.7
Currently Working Outside Hospitality		
Yes	112	16.4
No	558	81.9
Missing	11	1.6
Number of Hours Working Outside Hospitality		
0	558	81.9
1-16	33	4.8
17-24	36	5.3
25-36	26	3.8
37 or more	13	1.9
Missing	15	2.2

Note: Not all participants responded to all survey items

Table 5 shows that most respondents (41.7%) indicated having an overall grade point average (GPA) of between 3.0 and 3.49 (n = 284), followed by those (24.5%) who reported that their overall GPA was between 3.5 and 3.99 (n = 167). About 20% indicated that their overall GPA was between 2.5 and 2.99. Only six respondents indicated that their overall GPA was a perfect 4.0.

When asked about their hospitality curriculum specific GPA, 47 respondents indicated that they had a perfect 4.0 GPA in all of their hospitality coursework. Only 47 respondents indicated having a hospitality GPA of less than a 3.0. Over 96% of the respondents were single (n = 652), and only 24 (3.5%) indicated that they were married.

Table 5
Student Respondent Demographics: GPA and Marital Status (n = 681)

Descriptors	Frequency	%
Overall GPA		
<2	1	.1
2.0-2.49	27	4.0
2.5-2.99	137	20.1
3.0-3.49	284	41.7
3.5-3.99	167	24.5
4.0	6	.9
Missing	59	8.7
Hospitality GPA		
<2	0	.0
2.0-2.49	2	.3
2.5-2.99	45	6.6
3.0-3.49	168	24.6
3.5-3.99	104	28.5
4.0	47	6.9
Missing	225	33.0
Marital Status		
Single	652	96.4
Married	24	3.5
Missing	5	.7

Note: Not all participants responded to all survey items

Research Question 1

What are the student perceptions of learning as a result of their classroom experiences?

Student respondents were asked to rate their perception of learning as it related to their classroom experiences for 29 items. The results are presented in Table 6.

Table 6
Student Perceptions of Learning as a Result of Classroom Experiences (n = 681)

Student Perceptions of Learning	n	Mean	Std. Dev.
Practical knowledge related to major	678	6.03	.95
Practical knowledge related to career goals	678	5.83	.99
Understanding of how organizations function	677	5.76	.97
Clarity of career goals	677	5.57	1.14
Ability to view career expectations realistically	674	5.58	1.08
Professional network of contacts	667	5.22	1.05
Opportunities to learn from professionals	673	5.74	1.02
Ability to apply core knowledge	672	5.64	.94
Motivation to learn in the classroom	677	5.40	1.21
Motivation to continue and persist to graduation	677	5.80	1.27
Ability to take initiative	679	5.51	1.09
Ability to follow through	678	5.50	1.11
Desire to pursue life-long learning	679	5.35	1.27
Ability to set priorities	676	5.54	1.04
Ability to creatively identify, formulate and solve problems	678	5.44	1.00
Ability to adapt to change	676	5.52	1.02
Leadership skills	680	5.55	1.06
Ability to contribute to a team effort	676	5.61	1.06
Oral presentation skills	674	5.42	1.12
Writing skills	676	5.14	1.10
Ability to work with others to accomplish a goal	677	5.51	1.07
Ability to design and conduct experiments	670	5.07	1.06
Ability to make decisions	678	5.44	1.06
Self confidence	673	5.40	1.09
Time management skills	678	5.41	1.08
Financial management skills	668	5.04	1.11
Interpersonal communication skills	676	5.44	1.02
Awareness of civic responsibilities	668	5.20	1.07
Maturity	675	5.68	1.01

Note: Not all participants responded to every item.
Degree of Measurement: 1=Decreased Significantly; 2=Decreased Moderately; 3=Decreased Slightly; 4=No Change; 5=Increased Slightly; 6=Increased Moderately; 7=Increased Significantly.

Respondents indicated their perceptions using a 7-point scale. The degrees of measurement used were: 1=Decreased Significantly; 2=Decreased Moderately; 3=Decreased Slightly; 4=No Change; 5=Increased Slightly; 6=Increased Moderately; 7=Increased Significantly.

In order to investigate this question, the researcher analyzed the mean and standard deviation reported for each item on the survey instrument. It is interesting to

point out that with the exception of "motivation to learn in the classroom" (S.D. = 1.21), "motivation to continue and persist to graduation" (S.D. = 1.27), and "desire to pursue life-long learning" (S.D. = 1.27), all standard deviation scores fell very close to one.

All items received mean scores above five indicating that student perceptions of learning as a result of their classroom experiences increased to some degree. The item "practical knowledge related to major" received the highest mean score of 6.03 (n = 678), indicating a mean response slightly higher than increased moderately. All other mean scores fell between five and six indicating responses between increased slightly and increased moderately. The items with the lowest reported mean scores were "financial management skills," "ability to design and conduct experiments," and "writing skills," with mean scores of 5.04, 5.07, and 5.14 respectively.

Research Question 2

What are the student perceptions of learning as a result of their experiential learning experiences?

Student respondents were asked to rate their perception of learning as it related to their co-op or internship experiences for 29 items on a scale from 1 to 7. The items and degrees of measurement were identical to those used for the first research question, but the context was changed to inquire about students' experiential learning experiences. In order to investigate this question, the researcher analyzed the mean and standard deviation reported for each item on the survey instrument. Table 7 illustrates the data reported for each survey item.

Table 7
Student Perceptions of Learning as a Result of Co-op or Internship Experiences (n = 681)

Student Perceptions of Learning	n	Mean	Std. Dev.
Practical knowledge related to major	443	6.11	.94
Practical knowledge related to career goals	442	5.83	1.03
Understanding of how organizations function	444	5.96	.90
Clarity of career goals	442	5.60	1.19
Ability to view career expectations realistically	442	5.69	1.08
Professional network of contacts	440	5.49	1.05
Opportunities to learn from professionals	440	5.75	.96
Ability to apply core knowledge	443	5.69	.90
Motivation to learn in the classroom	442	5.33	1.31
Motivation to continue and persist to graduation	444	5.65	1.09
Ability to take initiative	445	5.66	1.09
Ability to follow through	444	5.46	1.14
Desire to pursue life-long learning	443	5.35	1.25
Ability to set priorities	443	5.54	1.06
Ability to creatively identify, formulate and solve problems	444	5.56	.97
Ability to adapt to change	444	5.61	1.01
Leadership skills	443	5.74	1.03
Ability to contribute to a team effort	445	5.67	1.01
Oral presentation skills	443	5.31	1.08
Writing skills	443	4.95	1.06
Ability to work with others to accomplish a goal	445	5.45	1.02
Ability to design and conduct experiments	434	4.89	1.06
Ability to make decisions	445	5.45	1.05
Self confidence	444	5.55	1.09
Time management skills	444	5.48	1.10
Financial management skills	442	5.14	1.12
Interpersonal communication skills	444	5.45	1.02
Awareness of civic responsibilities	436	5.13	1.04
Maturity	442	5.68	1.07

Note: Not all participants responded to every item.
Degree of Measurement: 1=Decreased Significantly; 2=Decreased Moderately; 3=Decreased Slightly; 4=No Change; 5=Increased Slightly; 6=Increased Moderately; 7=Increased Significantly.

The item "practical knowledge related to major" received the highest mean score of 6.11 indicating that students in the sample perceived their learning to fall between increased moderately and increased significantly. It is interesting to point out that this item also had a standard deviation (S.D. = .94) of less than one. With the exception of "ability to design and conduct experiments" which received a mean score of 4.89, and "writing skills" which received a mean score of 4.95, all other items received scores

higher than 5.0 indicating that student respondents perceived that their learning had at least increased slightly. Standard deviations ranged from .9 to 1.31, with "understanding of how organizations function" and "ability to apply core knowledge" measuring the smallest amounts of variance with standard deviation scores of .9 and "motivation to learn in the classroom" measuring the highest level of variance with a standard deviation of 1.31.

Research Question 3

What are the statistically significant differences, if any, between student perceptions of learning in the classroom and their perceptions of learning in experiential learning experiences?

The researcher attempted to answer this question in three separate contexts. First the researcher looked at students who had participated in the experiential learning program and compared their perceptions of learning in both the classroom environment and their experiential learning assignments. Next, the researcher compared student perceptions of learning in the classroom as reported by students who had participated in the experiential learning program and as reported by students who had not participated in the experiential learning program. Finally, the researcher analyzed the data based on gender.

The researcher first performed a paired samples or dependent samples t-test, comparing student responses for their perceptions of learning in the classroom environment with their perceptions of learning in their experiential learning assignments. The results of this analysis are presented in Table 8.

Table 8
Paired Samples t-test: Student Participants in Experiential Learning (n=681)

Student Perceptions of Learning	n	Mean Diff.	Std. Dev.	t	DF	Sig. (2-tailed)
Practical knowledge related to major	442	.14	1.06	2.7	441	.01
Practical knowledge related to career goals	441	.05	1.09	1.05	440	.30
Understanding of how organizations function	442	.20	1.11	3.86	441	.00
Clarity of career goals	440	.05	1.16	.82	439	.41
Ability to view career expectations realistically	439	.12	1.13	2.25	438	.03
Professional network of contacts	437	.17	1.04	3.36	436	.00
Opportunities to learn from professionals	436	.01	1.04	.14	435	.89
Ability to apply core knowledge	439	.03	1.00	.57	438	.57
Motivation to learn in the classroom	440	-.04	1.07	-.85	439	.40
Motivation to continue and persist to graduation	442	-.01	.93	-.05	441	.96
Ability to take initiative	443	.18	.97	3.88	442	.00
Ability to follow through	442	-.04	1.04	-.82	441	.41
Desire to pursue life-long learning	442	.02	1.00	.38	441	.70
Ability to set priorities	439	-.02	.93	-.41	438	.68
Ability to creatively identify, formulate and solve problems	443	.07	.92	1.55	442	.12
Ability to adapt to change	441	.10	1.02	2.02	440	.04
Leadership skills	442	.13	1.04	2.70	441	.01
Ability to contribute to a team effort	442	.03	1.01	.56	441	.57
Oral presentation skills	440	-.22	.98	-4.67	439	.00
Writing skills	441	-.25	1.01	-5.28	440	.00
Ability to work with others to accomplish a goal	443	-.11	98	-2.32	442	.02
Ability to design and conduct experiments	431	-.22	.96	-4.77	430	.00
Ability to make decisions	443	-.05	1.04	-1.09	442	.28
Self confidence	440	.10	1.02	2.06	439	.04
Time management skills	443	-.02	.97	-.49	442	.62
Financial management skills	437	.12	1.04	2.40	436	.02
Interpersonal communication skills	443	-.01	.96	-.30	442	.77
Awareness of civic responsibilities	432	-.10	.89	-2.44	431	.02
Maturity	438	.03	.88	.60	437	.55

Note: Mean scores are reported in table 7 and table 8.

Note: A positive mean difference reflects student responses reporting higher scores for experiential learning. A negative mean difference reflects student responses reporting higher scores for classroom experiences. Not all participants responded to every item.

Table 8 presents the number of respondents for each item, which was significantly less than the total 681 respondents. Respondents had to have participated in the

experiential learning program to be included in this particular analysis. Presented are the mean differences which were the difference between student respondents' perception of learning in their classroom environment and their perceptions of learning in their experiential learning assignments, as well as the standard deviation, t-test scores, degrees of freedom, and the significance level (2-tailed).

Of 29 items, 14 were found to have statistically significant differences between student perceptions of learning in the classroom environment and their perceptions of learning in their experiential learning experiences. Students reported learning more in nine areas as a result of their experiential learning assignments. These data are represented in Table 9.

Table 9
Increased Learning Reported as a Result of Experiential Learning (n=681)

Student Perceptions of Learning	n	Mean Diff.	Std. Dev.	t	DF	Sig. (2-tailed)
Practical knowledge related to major	442	.14	1.06	2.7	441	.01
Understanding of how organizations function	442	.20	1.11	3.86	441	.00
Ability to view career expectations realistically	439	.12	1.13	2.25	438	.03
Professional network of contacts	437	.17	1.04	3.36	436	.00
Ability to take initiative	443	.18	.97	3.88	442	.00
Ability to adapt to change	441	.10	1.02	2.02	440	.04
Leadership skills	442	.13	1.04	2.70	441	.01
Self confidence	440	.10	1.02	2.06	439	.04
Financial management skills	437	.12	1.04	2.40	436	.02

Note: Mean scores are reported in table 7 and table 8.

Note: A positive mean difference reflects student responses reporting higher scores for experiential learning. A negative mean difference reflects student responses reporting higher scores for classroom experiences. Not all participants responded to every item.

The first item, "practical knowledge related to major", had a statistically significant ($p \leq .01$) mean difference of .14 indicating that students perceived learning

more practical knowledge related to their major in their experiential learning assignment than they did in the classroom. Respondents also reported a statistically significant ($p \leq .01$) mean difference regarding their perceptions of learning about how organizations function. The mean difference of .2 indicates that students reported learning more in their experiential learning assignments than they reported learning in the classroom about how organizations function.

Respondents indicated that their ability to view career expectations realistically increased more as a result of their experiential learning assignments than the classroom with a mean difference of .12 ($p<.05$). Not surprisingly, students also reported that their professional network of contacts increased more as a result of their experiential learning assignments than the classroom with a mean difference of .17 ($p<.01$). Student respondents indicated that their ability to take initiative increased more as a result of their experiential learning assignments than the classroom with a reported mean difference of .18 ($p<.01$).

Students reported statistically significant differences in their ability to adapt to change and in their leadership skills with reported mean differences of .1 ($p<.05$) and .13 ($p \leq .01$) respectively. These statistically significant mean differences indicate that students report learning more about adapting to change and about how to lead more as a result of their exponential learning assignments than they did in the classroom. Respondents also reported statistically significant differences in mean scores for self-confidence and financial management skills of .1 ($p<.05$) and .12 ($p<.05$) respectively,

indicating that students reported learning or growing more in these areas as a result of their experiential learning assignments than they did in the classroom.

Students also reported learning more in five areas as a result of their classroom experiences. These data are reported in Table 10.

Table 10
Increased Learning Reported as a Result of Classroom Environment (n=681)

Student Perceptions of Learning	n	Mean Diff.	Std. Dev.	t	DF	Sig. (2-tailed)
Oral presentation skills	440	-.22	.98	-4.67	439	.00
Writing skills	441	-.25	1.01	-5.28	440	.00
Ability to work with others to accomplish a goal	443	-.11	98	-2.32	442	.02
Ability to design and conduct experiments	431	-.22	.96	-4.77	430	.00
Awareness of civic responsibilities	432	-.10	.89	-2.44	431	.02

Note: A positive mean difference reflects student responses reporting higher scores for experiential learning. A negative mean difference reflects student responses reporting higher scores for classroom experiences. Not all participants responded to every item.

Not surprisingly, respondents reported statistically significant differences in mean scores for both oral presentation skills and writing skills of -.22 ($p<.01$), and -.25 ($p<.01$), indicating that students perceived learning more about oral presentation skills and writing skills in the classroom than they did in their experiential learning assignments. Students also indicated that their ability to work with others to accomplish a goal (mean diff. = -.11, $p<.05$) and that their ability to design and conduct experiments (mean diff. = -.22, $p<.01$) increased more as a result of the classroom than their experiential learning assignments. Another area in which respondents indicated a statistically significant difference was their awareness of civic responsibilities with a mean difference of -.1 ($p<.05$). This also indicated that students perceived becoming

more aware of civic responsibilities as a result of classroom rather than their experiential learning assignments.

After looking at the differences in perceptions of learning reported by students for both their experiential learning assignments and their classroom environments, the researcher investigated differences in student perceptions of learning in the classroom. The researcher did this by performing an independent samples t-test for two groups of respondents: those who participated in the experiential learning program and those who had not yet participated in the experiential learning program. These data are reported in Table 11. The researcher found eight statistically significant differences in student perceptions of learning in the classroom between those who had participated in the experiential learning program, and those who had not yet participated in the experiential learning program.

There was found to be a statistically significant difference between mean scores reported by respondents regarding their practical knowledge related to their major. However, this item also reported a statistically significant Levene's test ($F= 8.027$, $p <.01$), so equal variances were not assumed when interpreting the results of this analysis. The mean difference reported when equal variances were not assumed was .1885 ($t = 2.476$, $df = 426.558$, $p < .05$) indicating that students who had not participated in the experiential learning program reported learning more practical knowledge related to their major than those students who had participated in the experiential learning program.

There was also found to be a statistically significant difference between mean scores reported by respondents regarding their practical knowledge related to their career

goals. This item also reported a statistically significant Levene's test (F= 6.764, p <.05), so equal variances were not assumed when interpreting the results of this analysis. The mean difference reported when equal variances were not assumed was .1814 (t = 2.248, df = 411.472, p < .05) indicating that students who had not participated in the experiential learning program reported learning more practical knowledge related to their career goals than those students who had participated in the experiential learning program.

Table 11
Differences in Students' Perceptions as a Result of Experiential Learning

Student Perceptions of Learning	Levene's F	Test Sig.	t	df	Sig. (2-tailed)	Mean Diff
Practical knowledge related to major		.				
Equal variances assumed	8.027	.005	2.314	634	.021	.1885
Equal variances not assumed			2.476	426.558	.014	.1885
Practical knowledge related to career goals						
Equal variances assumed	6.764	.010	2.139	634	.033	.1814
Equal variances not assumed			2.248	411.472	.025	.1814
Professional network of contacts						
Equal variances assumed	8.726	.003	-4.165	627	.000	-.3767
Equal variances not assumed			-4.322	384.783	.000	-.3767
Motivation to learn in the classroom						
Equal variances assumed	4.812	.029	3.602	633	.000	.3775
Equal variances not assumed			1.991	386.440	.047	.2134
Motivation to continue and persist to graduation						
Equal variances assumed	4.407	.036	1.938	633	.053	.2134
Equal variances not assumed			1.991	386.440	.047	.2134
Oral presentation skills						
Equal variances assumed	.284	.594	-.3.740	632	.000	-.3614
Equal variances not assumed			-3.807	378.662	.000	-.3614
Writing skills						
Equal variances assumed	.774	.379	-2.299	635	.022	-.2157
Equal variances not assumed			-2.343	385.162	.020	-.2157
Ability to make decisions						
Equal variances assumed	3.642	.057	-2.055	634	.040	-.1873
Equal variances not assumed			-2.143	404.345	.033	-.1873
Self-confidence						
Equal variances assumed	1.347	.246	-2.063	630	.039	-.1947
Equal variances not assumed			-2.093	372.980	.037	-.1947
Time management skills						
Equal variances assumed	.553	.458	-3.138	635	.002	-.2950
Equal variances not assumed			-3.110	357.656	.002	-.2950

Note: Not all participants responded to every item. Appendix G contains complete results for all items.

There was found to be a statistically significant difference between mean scores reported by respondents regarding their professional network of contacts. This item also reported a statistically significant Levene's test (F= 8.726, p <.01), so equal variances were not assumed when interpreting the results of this analysis. The mean difference reported when equal variances were not assumed was -.3767 (t = -4.322, df = 384.783, p < .01) indicating that students who had participated in the experiential learning program reported higher scores related to professional network of contacts than those students who had not participated in the experiential learning program.

There was found to be a statistically significant difference between mean scores reported by students regarding their motivation to learn in the classroom. This item reported a statistically significant Levene's test (F= 4.812, p <.05), so equal variances were not assumed when interpreting the results of this analysis. The mean difference reported when equal variances were not assumed was .3775 (t = 3.829, df = 420.27, p < .01) indicating that students who had not participated in the experiential learning program reported that their motivation to learn in the classroom increased more than was reported for those students who had participated in the experiential learning program.

Related to students' motivation to learn in the classroom was the item regarding students' motivation to continue and persist to graduation. There was found to be a statistically significant difference between mean scores reported by respondents regarding their motivation to continue and persist to graduation. However, this item also reported a statistically significant Levene's test (F= 4.407, p <.05), so equal variances

were not assumed when interpreting the results of this analysis. The mean difference reported when equal variances were not assumed was .2134 (t = 1.991, df = 386.44, p < .05) indicating that students who had not participated in the experiential learning program reported higher scores regarding their motivation to continue and persist to graduation than those scores reported from students who had participated in the experiential learning program.

There was found to be a statistically significant difference between mean scores reported by students regarding their ability to make decisions. This item did not report a statistically significant Levene's test (F= 3.642, p >.05), so equal variances were assumed when interpreting the results of this analysis. The mean difference reported when equal variances were assumed was -.1873 (t = -2.055, df = 634, p < .05) indicating that students who had participated in the experiential learning program reported that their ability to make decisions increased more than the increase that was reported for those students who had not participated in the experiential learning program.

There was found to be a statistically significant difference between mean scores reported by students regarding their self-confidence. This item did not report a statistically significant Levene's test (F= 1.347, p >.05), so equal variances were assumed when interpreting the results of this analysis. The mean difference reported when equal variances were assumed was -.1947 (t = -2.063, df = 630, p < .05) indicating that students who had participated in the experiential learning program reported that their self-confidence increased more than the increase that was reported for those students who had not participated in the experiential learning program.

There was found to be a statistically significant difference between mean scores reported by students regarding their time management skills. This item did not report a statistically significant Levene's test (F= .553, p >.05), so equal variances were assumed when interpreting the results of this analysis. The mean difference reported when equal variances were assumed was -.295 (t = -3.138, df = 635, p < .05) indicating that students who had participated in the experiential learning program reported that their time management skills increased more than the increase that was reported for those students who had not participated in the experiential learning program.

The researcher also investigated differences reported by students based on gender. The data were analyzed by performing an independent samples *t*-test for two groups, males and females. Table 12 presents the data as it relates to students' perceptions of learning in their experiential learning assignments.

Table 12
Differences in Student Perceptions as a Result of Experiential Learning By Gender

Student Perceptions of Learning	Levene's F	Test Sig.	t	df	Sig. (2-tailed)	Mean Diff
Motivation to continue and persist to graduation		.				
Equal variances assumed	.491	.484	2.258	482	.024	.3021
Equal variances not assumed			2.234	230.460	.026	.3021
Ability to take initiative						
Equal variances assumed	.314	.576	2.629	482	.009	.2907
Equal variances not assumed			2.554	222.681	.011	.2907
Ability to follow through						
Equal variances assumed	.029	.865	2.409	481	016	.2790
Equal variances not assumed			2.378	229.660	.018	.2790
Ability to adapt to change						
Equal variances assumed	4.953	.027	2.138	482	.033	.2210
Equal variances not assumed			2.036	212.596	.043	.2210

Note: Not all participants responded to every item. Appendix H contains complete results for all items.

All together, there were four statistically significant differences reported when the researcher compared students' perceptions of learning in their experiential learning assignments by gender. It is very interesting that in all four instances, females reported a higher mean score than their male classmates. There was found to be a statistically significant difference between mean scores reported by students regarding their motivation to continue and persist to graduation. This item did not report a statistically significant Levene's test (F= .491, p >.05), so equal variances were assumed when interpreting the results of this analysis. The mean difference reported when equal variances were assumed was .3021 (t = 2.258, df = 482, p < .05) indicating that female students reported their motivation to continue and persist to graduation increased more than did their male student colleagues.

There was also found to be a statistically significant difference between mean scores reported by students regarding their ability to take initiative. This item did not report a statistically significant Levene's test (F= .314, p >.05), so equal variances were assumed when interpreting the results of this analysis. The mean difference reported when equal variances were assumed was .2907 (t = 2.629, df = 482, p < .01) indicating that female students, more than male students, reported that their ability to take initiative increased.

There was found to be a statistically significant difference between mean scores reported by students regarding their ability to follow through. This item did not report a statistically significant Levene's test (F= .029, p >.05), so equal variances were assumed when interpreting the results of this analysis. The mean difference reported when equal

variances were assumed was .279 ($t = 2.409$, df = 481, $p < .05$) indicating that female students reported that their ability to follow through increased more than did the increase that was reported for male students.

There was also found to be a statistically significant difference between mean scores reported by students regarding their ability to adapt to change. This item did report a statistically significant Levene's test (F= 1.953, $p < .05$), so equal variances were not assumed when interpreting the results of this analysis. The mean difference reported when equal variances were not assumed was .221 ($t = 2.036$, df = 212.596, $p < .05$) indicating that female students reported that their ability to adapt to change increased more than did the increase that was reported for male students.

Table 13 presents the data as it relates to students perceptions of learning in their classroom environments. When comparing student perceptions of learning in their classroom environments by gender, two statistically significant differences emerged.

Table 13
Differences in Student Perceptions as a Result of Classroom Environment by Gender

Student Perceptions of Learning	Levene's F	Test Sig.	t	df	Sig. (2-tailed)	Mean Diff
Ability to apply core knowledge		.				
Equal variances assumed	2.452	.118	2.483	668	.013	.2004
Equal variances not assumed			2.440	326.825	.015	.2004
Motivation to learn in the classroom						
Equal variances assumed	.190	.663	3.096	673	.002	.3207
Equal variances not assumed			3.046	331.668	.003	.3207
Motivation to continue and persist to graduation						
Equal variances assumed	8.516	.004	2.925	673	.004	.3170
Equal variances not assumed			2.780	312.759	.006	.3170

Note: Not all participants responded to every item. Appendix I contains complete results for all items.

It was also interesting to note that these two items received higher mean scores by the female students than they did by their male classmates. There was found to be a statistically significant difference between mean scores reported by students regarding their ability to apply core knowledge. This item did not report a statistically significant Levene's test (F= 2.452, $p > .05$), so equal variances were assumed when interpreting the results of this analysis. The mean difference reported when equal variances were assumed was .2004 ($t = 2.483$, df = 668, $p < .05$) indicating that female students reported that their ability to apply core knowledge increased more than the increase that was reported for male students.

There was also found to be a statistically significant difference between mean scores reported by students regarding their motivation to learn in the classroom. This item did not report a statistically significant Levene's test (F= .19, $p > .05$), so equal variances were assumed when interpreting the results of this analysis. The mean difference reported when equal variances were assumed was .3207 ($t = 3.096$, df = 673, $p < .05$) indicating that female students reported that their ability to adapt to change increased more than the increase that was reported for male students.

Next the researcher analyzed the data for differences in perceptions of learning in student's experiential learning assignments based on the number of co-op terms a student participated in. This was done by performing an analysis of the variance (ANOVA) with the data divided into four groups. First there was a group of students who had not participated in co-op. Next there was a group comprised of students who indicated that they had participated in only one co-op term. Another group was comprised of students

who had indicated that they had participated in exactly two co-op terms. The last group was comprised of students who had indicated that they had participated in at least three co-op terms. These groups were used to perform an ANOVA on both student perceptions of learning in their experiential learning assignments. These data are presented in Table 14.

Table 14
ANOVA Results by Co-op Term: Student Perceptions of Experiential Learning

Student Perceptions of Learning	Sum of Squares	df	Mean Square	F	Sig.
Oral presentation skills					
Between groups	7.453	2	3.727	3.246	.040
Within groups	505.179	440	1.148		
Total	512.632	442			
Writing skills					
Between groups	8.273	2	4.137	3.725	.025
Within groups	488.634	440	1.111		
Total	496.907	442			
Maturity					
Between groups	7.357	2	3.679	3.223	.041
Within groups	501.023	439	1.141		
Total	508.380	441			

Note: Only students who had participated in experiential learning were included in this analysis. Maturity reported a statistically significant Levene statistic of 4.274 (2, 485) $p>.05$. Appendix J contains complete results for all items.

Regarding student perceptions of learning as a result of their experiential learning assignments, there was a significant effect of the number of semesters a student had participated in the co-op program on three items; oral presentation skills (F (2,440) = 7.453, $p < .05$) writing skills (F (2,440) = 8.273, $p < .05$), and maturity (F (2,440) = 7.357, $p < .05$). Of the three items, only maturity reported a statistically significant Levene statistic of 4.274 (2, 484) $p > .05$, indicating homogeneity of the variances for this item and that the F statistic for this item may be inaccurate. A closer look at the mean scores reported for each of these items shows that as students were involved with two

semesters of co-op, their reported mean scores increased. When the students had been involved with three or more co-op terms, however, the reported increase of mean scores for these three items decreased. Still, mean scores were higher than those reported by students in the one semester of co-op group and supported an increase in these particular learning outcomes.

Regarding students' perceptions of learning in the classroom environment, the researcher found that there were a number of items that reported a statistically significant Levene statistic signaling that the variances between the groups were different, and also that the F-statistic reported may not be accurate. These data are reported first in Table 15. Eight items reported a statistically significant Levene statistic. Practical knowledge related to major reported a Levene statistic of 3.569 ($p < .05$). Ability to view career expectations realistically reported a Levene statistic of 3.785 ($p < .05$). Professional network of contacts reported a Levene statistic of 2.891 ($p < .05$). Motivation to continue and persist to graduation reported a Levene statistic of 2.925 ($p < .05$). Ability to creatively identify, formulate, and solve problems reported a Levene statistic of 2.649 ($p < .05$). Ability to design and conduct experiments reported a Levene statistic of 2.738 ($p < .05$). Awareness of civic responsibilities reported a Levene statistic of 2.805 ($p < .05$). Also, maturity reported a Levene statistic of 2.825 ($p < .05$).

Table 15
Test of Homogeneity of Variances

Student Perceptions of Learning	Levene Statistic	df1	df2	Sig.
Practical knowledge related to major	3.569	3	632	.014
Practical knowledge related to career goals	2.625	3	632	.050
Understanding of how organizations function	1.235	3	632	.296
Clarity of career goals	1.359	3	631	.254
Ability to view career expectations realistically	3.785	3	630	.010
Professional network of contacts	2.891	3	625	.035
Opportunities to learn from professionals	.818	3	628	.484
Ability to apply core knowledge	1.014	3	627	.386
Motivation to learn in the classroom	1.892	3	631	.130
Motivation to continue and persist to graduation	2.925	3	631	.033
Ability to take initiative	2.167	3	633	.091
Ability to follow through	2.138	3	633	.094
Desire to pursue life-long learning	.556	3	634	.644
Ability to set priorities	2.243	3	631	.082
Ability to creatively identify, formulate and solve problems	2.649	3	633	.048
Ability to adapt to change	.030	3	631	.993
Leadership skills	1.151	3	634	.328
Ability to contribute to a team effort	1.208	3	631	.306
Oral presentation skills	1.537	3	630	.204
Writing skills	1.121	3	633	.340
Ability to work with others to accomplish a goal	.591	3	633	.621
Ability to design and conduct experiments	2.738	3	625	.043
Ability to make decisions	1.730	3	632	.160
Self confidence	.842	3	628	.471
Time management skills	.693	3	633	.557
Financial management skills	.748	3	625	.524
Interpersonal communication skills	2.338	3	631	.072
Awareness of civic responsibilities	2.805	3	624	.039
Maturity	2.825	3	630	.038

Table 16 presents the data from the ANOVA analysis of student perceptions of learning in their classroom experiences. The students were placed into groups according to the number of semesters they had participated in the experiential learning program. First there was a group of students who had not participated in co-op. Next there was a group comprised of students who indicated that they had participated in only one co-op term. Another group was comprised of students who had indicated that they had

participated in exactly two co-op terms. The last group was comprised of students who had indicated that they had participated in at least three co-op terms.

Table 16
ANOVA Results by Co-op Term: Student Perceptions of Classroom Learning

Student Perceptions of Learning	Sum of Squares	df	Mean Square	F	Sig.
Practical knowledge related to major					
Between groups	8.675	3	2.892	3.265	.021
Within groups	559.758	632	.886		
Total	568.432	635			
Practical knowledge related to career goals					
Between groups	10.097	3	3.366	3.505	.015
Within groups	606.877	632	.960		
Total	616.975	635			
Professional network of contacts					
Between groups	21.619	3	7.206	6.693	.000
Within groups	672.976	625	1.077		
Total	694.595	628			
Motivation to learn in the classroom					
Between groups	22.044	3	7.348	4.993	.002
Within groups	928.592	631	1.472		
Total	950.636	634			
Oral presentation skills					
Between groups	23.908	3	7.969	6.409	.000
Within groups	783.398	630	1.243		
Total	807.306	633			
Writing skills					
Between groups	13.791	3	4.597	3.897	.009
Within groups	746.774	633	1.180		
Total	760.565	636			
Time management skills					
Between groups	11.755	3	3.918	3.287	.020
Within groups	754.659	633	1.192		
Total	766.414	636			

Note. Appendix K contains complete results for all items.

There was a significant effect of the number of semesters a student had participated in the co-op program on seven items regarding students' perceptions of learning in the classroom; practical knowledge related to major practical knowledge related to major (F (3,632) = 3.265, $p < .05$), practical knowledge related to career goals (F (3,632) = 3.366, $p < .05$), professional network of contacts (F (3,625) = 7.206, $p <$

.01), motivation to learn in the classroom (F (3,631) = 7.348, $p < .01$), oral presentation skills (F (3,630) = 7.969, $p < .01$), writing skills (F (3,633) = 4.597, $p < .01$), and time management skills (F (3,633) = 3.918, $p < .05$). Of the seven items, only practical knowledge related to major and professional network of contacts reported a statistically significant Levene statistic, indicating homogeneity of the variances for these two items and that the F statistic for these items may be incorrect.

A closer look at the mean scores reported for practical knowledge related to career goals shows that as students are involved with increasing numbers of semesters of co-op their reported mean scores decrease in a linear fashion. Students with zero semesters of co-op participation reported a mean score of 5.95. Students with one semester of co-op participation reported a mean score of 5.88. Students with two semesters of co-op experience reported a mean score of 5.77, and students with 3 or more semesters of co-op experience reported mean score of 5.6.

The item regarding students' perceived motivation to learn in the classroom also reported a similar trend in mean scores reported. Students with zero semesters of co-op participation reported a mean score of 5.75. Students with one semester of co-op participation reported a mean score of 5.43. Students with two semesters of co-op experience reported a mean score of 5.41, and students with 3 or more semesters of co-op experience reported mean score of 5.24.

The item regarding students' perceived learning of oral presentation skills reported an opposite trend in mean scores reported. Whereas the number of semesters of co-op participation increased, so did the reported mean score of perceived learning.

Students with zero semesters of co-op participation reported a mean score of 5.18. Students with one semester of co-op participation reported a mean score of 5.4. Students with two semesters of co-op experience reported a mean score of 5.61, and students with 3 or more semesters of co-op experience reported mean score of 5.67.

The item regarding students' perceived learning of writing skills reported the same linear trends as reported for oral presentation skills. As the number of semesters of co-op participation increased, so did the reported mean score of perceived learning. Students with zero semesters of co-op participation reported a mean score of 4.99. Students with one semester of co-op participation reported a mean score of 5.06. Students with two semesters of co-op experience reported a mean score of 5.29, and students with 3 or more semesters of co-op experience reported mean score of 5.34.

A closer look at the mean scores reported for time management skills shows that as students were involved with one and two semesters of co-op, their reported mean scores increased with each semester. However, when the students were involved with three or more co-op terms, the reported mean score decreased but were still higher than those reported by students in the zero semesters of co-op group.

Research Question 4

What are the statistically significant differences, if any, between student perceptions of learning in the classroom and their perceptions of learning in experiential learning experiences based on class standing (Freshman, Sophomore, Junior, Senior)?

Next the researcher analyzed the data for differences in perceptions of learning in student's experiential learning assignments based on their class standing. This analysis was conducted by performing an analysis of the variance (ANOVA) with the respondents

divided into four groups. Students completing up to 29 semester credit hours were considered freshmen. Students completing between 30 and 59 semester credit hours were considered sophomores. Students between 60 and 89 semester credit hours were considered juniors. Students completing 90 or more semester credit hours were considered seniors. These groups were used to perform an ANOVA on both student perceptions of learning in their experiential learning assignments and their perceptions of learning in the classroom environment.

The ANOVA results of student perceptions of learning in their experiential learning assignments showed that there were no significant effects of class standing on any of the items. The results of the analysis for the 29 survey items have been included for informational purposes in Appendix L.

The results of the data analysis of differences in perceptions of learning in student's classroom experiences based on their class standing are presented in Table 17. This analysis was completed by performing an ANOVA with the respondents divided into the same four groups for the previous analysis. Students completing up to 29 semester credit hours were considered freshmen. Students completing 30-59 semester credit hours were considered sophomores. Students completing 60-89 semester credit hours were considered juniors. Students completing 90 or more semester credit hours were considered seniors. There was a significant effect of class standing on four items regarding students' perceptions of learning in the classroom; practical knowledge related to major (F (3,668) = 4.374, $p < .01$), practical knowledge related to career goals (F (3,668) = 3.435, $p < .05$), motivation to learn in the classroom (F (3,667) = 3.915, $p <$

.05), and oral presentation skills (F (3,664) = 3.596, $p < .05$). Of the four items, practical knowledge related to major, practical knowledge related to career goals, and motivation to learn in the classroom all reported a statistically significant Levene statistic, indicating homogeneity of the variances for these items and that the F statistic for these items may be incorrect.

Table 17
ANOVA Results by Class Standing: Student Perceptions of Classroom Learning

Student Perceptions of Learning	Sum of Squares	df	Mean Square	F	Sig.
Practical knowledge related to major					
Between groups	11.645	3	3.882	4.374	.005
Within groups	592.818	668	.887		
Total	604.463	671			
Practical knowledge related to career goals					
Between groups	10.306	3	3.435	3.547	.014
Within groups	647.027	668	.969		
Total	657.333	671			
Motivation to learn in the classroom					
Between groups	11.744	3	3.915	2.659	.047
Within groups	982.003	667	1.472		
Total	993.747	670			
Oral presentation skills					
Between groups	10.787	3	3.596	2.862	.036
Within groups	834.165	664	1.256		
Total	844.952	667			

Appendix M contains complete results for all items.

A closer look at the mean scores reported for oral presentation skills shows that as students progress from freshmen to sophomores to juniors to seniors, their reported mean scores increased in a linear fashion. Freshmen reported a mean score of 5.21. Sophomore reported a mean score of 5.28. Juniors reported a mean score of 5.37, and seniors reported mean score of 5.58.

Summary

This chapter presented an analysis of the data collected from 681 respondents to a modified version of the P.L.A.C.E. survey instrument. These data were used in an attempt to answer the four research questions that guided this study. Several comparisons were made. Of particular interest, comparisons were made between students who had, and students who had not yet, participated in the experiential learning program that was a required part of the curriculum of those participating in the study. When statistically significant differences were found, they were reported. A summary and discussion of the findings are presented in Chapter 5. Conclusions drawn from this research, as well as recommendations for future research, are also presented in Chapter 5.

CHAPTER 5

SUMMARY, DISCUSSION AND RECOMMENDATIONS

Introduction

This final chapter provides for a review of the problem identified in this research and the methodology used in the study. A summary and discussion of the findings, conclusions and recommendations for future research are also presented.

Statement of the Problem

Cooperative Education has been around for 100 years. Although much has been done up to this point, much work is left in order to promote and advance quality cooperative education programs (Sovilla & Varty, 2004). Heinimann (1988) reported that despite the obvious growth and success of cooperative education programs, overall, many programs still languished on the sidelines of mainstream academics. Van der Worm (1988) added that there were three main reasons for this:

1. Faculty do not recognize work as a vehicle for learning and, in fact, view cooperative education as *anti-intellectual* [original emphasis].
2. Co-op practitioners tend to see themselves as operational people concerned with logistics and administration – not as educators, and
3. Cooperative education methodology for promoting learning is vague and underdeveloped (p. 121).

Sovilla and Varty (2004) claimed that "many administrators and program staff do not seem to understand that the primary mission of cooperative education is enhanced

student learning" (p. 10). They continued to explain that even when administrators understand the mission of cooperative education, many times they ignore the mission when making administrative decisions. Eames and Cates (2004) added that "the failure to gain clear recognition of work experience components as learning opportunities has been linked to a failure thus far to place cooperative education on a sound educational basis with a theoretical underpinning (p. 39). It has been difficult for cooperative education practitioners to convince faculty to integrate co-op into the curriculum. "Many faculty and administrators are entrenched and comfortable in the more conventional education system" (Sovilla & Varty, p. 11).

This study attempted to analyze student perceptions of learning in both experiential learning assignments outside the classroom and student perceptions of learning inside the classroom environment. Analysis in the study may provide important knowledge useful in supporting the idea that cooperative education assignments do address faculty agendas and values, and in turn help solicit faculty support of experiential learning programs.

Methodology

The following section is a summary of the methodology used for this study. This section includes a summary of the population studied, sampling procedures, the instrument that was used, data collection procedures, and methods of data analysis used for this study.

Population

The population for this study was the students at the Rosen College of Hospitality Management at the University of Central Florida. This population was selected so that the study could focus on students in a hospitality curriculum that was based on classroom and experiential learning experiences. The student population at the Rosen College was about 1,700 students and therefore, provided a large enough sample size to determine significant differences among student responses. Also, all hospitality majors at the university have an experiential learning requirement they must fulfill in order to graduate. These experiences are structured and monitored by the same two faculty members for all students, minimizing some of the inherent variability in students' experiences, therefore holding some variables constant.

Sampling

A stratified cluster sample of classes offered at the Rosen College of Hospitality Management was selected for this study. The sample was stratified by selecting 4 sections of 1000-level courses, 4 sections of 2000-level courses, 8 sections of 3000-level courses, and 12 sections of 4000-level courses. More upper-level (3000 and 4000) division courses were selected because more of the students enrolled in upper-division courses had participated in the cooperative education requirement than those enrolled in the lower-level (1000 and 2000) division courses. Included in the 4000-level courses was HFT 4295, the capstone course, and was typically taken in students' final semester of enrollment. This course, in particular, was selected in an effort to capture data from students near the end of their curriculum. The course sections with the most students

enrolled in them for the spring 2006 semester were selected for this study. Once a course was selected, the course instructor was contacted to request permission to come into the class and distribute the survey. There were 681 students who responded to the in-class surveys.

Instrumentation

A modified version of the Predicting Learner Advancement through Cooperative Education (P.L.A.C.E.) instrument (APPENDIX B) was used in order to collect data for the study. The P.L.A.C.E. instrument was created, tested and validated by a group of researchers in a previous study (Parks et al., 2001). In addition, the people involved with the committee who developed the P.L.A.C.E. averaged almost 20 years of experience in the field of cooperative education.

The instrument was also modified based on exploratory factor analysis and extensive input from a committee of cooperative education professionals. The modified P.L.A.C.E. instrument consists of 29 items using a 7-point rating-scale and 4 open-ended questions (Parks et al., 2001). This study did not take advantage of the qualitative items but only used the 29 items that could be used in a quantitative analysis.

The items on the P.L.A.C.E. instrument pertained to student career, academic, and personal growth. The P.L.A.C.E. instrument was developed to be a standardized instrument measuring pre-graduation outcomes in these four areas: (a) career development, (b) academic functions achievement, (c) work skills development, and (d) personal growth/development (Parks et al., 2001). The P.L.A.C.E. instrument was adapted from the Cooperative Education Evaluation which was constructed by a

committee of the Cooperative Education Network (Parks et al.). Since the Cooperative Education Network members all subscribed to the same attributes for co-op, this held many variables constant to study students across different institutions. Parks et al. tested, validated and published the validation results regarding the P.L.A.C.E. instrument in the Journal of Cooperative Education.

Specific response options (i.e., 7 = increased significantly, 6 = increased moderately, 5 = increased slightly, 4 = no change, 3 = decreased slightly, 2 = decreased moderately, and 1 = decreased significantly) were used to create a Lickert-type scale of measurement for each item. The modified instrument used for this study was comprised of three parts. The first section included 29 items that were derived from the P.L.A.C.E. instrument and asked to students to identify only their perceptions of learning in their cooperative education experiences. The second section included the same 29 items as the first section, but this section asked students to report their perceptions of learning only as it related to their classroom experiences. The third section collected demographic data that were used to identify different groups of respondents for analysis.

Data Collection

Data collection began on January 24, 2006, and concluded on February 21, 2006. Each class was visited either at the beginning or ending of a class meeting. Instructions were read aloud to students who agreed to participate in the survey. Students were also informed that participation in the survey was voluntary and that all responses would be anonymous and kept confidential. The estimated time to complete the P.L.A.C.E. instrument was between 6 and 15 minutes.

This study utilized a causal-comparative research design which attempts to compare groups that are already formed on one or more dependent variables (Huck & Cormier, 1999). The causal-comparative design most often includes at least two groups and one dependent variable (Gay & Airasian, 2000). In this study, students enrolled in the co-op program who had worked one, two, three or more semesters, as well as students who had not participated in the co-op program during any semester formed groups for comparison purposes. The dependent variables were the 29 survey items measuring students' perceptions of learning as they related to either their classroom or cooperative education experiences.

Data Analysis

The data obtained in this study were analyzed using The Statistical Package for the Social Sciences (SPSS) © 11.5 for Windows. The primary statistical analysis included both independent and dependent t-tests to compare students' responses regarding their perceptions of learning in the classroom as compared to their perceptions of learning as a result of their cooperative education requirement. An Analysis of Variance (ANOVA) was used to determine significant differences among groups within the sample. Respondents were divided into groups of those who had participated in a cooperative education placement for zero, one, two, and three or more semesters, male and female, and class standing (i.e., freshmen, sophomores, juniors, and seniors).

Summary and Discussion of Findings

Four research questions guided this research. Specific findings from the analysis for each research question are presented along with a related discussion of those specific findings. It is important to point out here that some of the analysis involving ANOVAs produced groups reporting homogeneity of the variance. Although it has been noted specifically for the reader whenever this occurred, the results have been presented as they were produced, so caution should be used when interpreting these particular results.

Brief Description of the Population

The data for this study were collected during the spring 2006 semester at the Rosen College of Hospitality Management at the University of Central Florida. A stratified cluster sample of 28 course sections was selected to participate in this study. Similar to many hospitality programs (R. Springall, personal communication, June 1, 2006), female students (n = 488) outnumbered male students (n = 191). Although this study did not attempt to generalize its findings to other populations, the similarities, such as gender representation, with other student populations at other hospitality programs should be noted. Freshmen (n = 38) accounted for 5.6% of the total sample, sophomores (n=116) accounted for 17% of the total sample, juniors (n = 269) were the largest group within the sample, accounting for 39.5% of the sample, and seniors (n = 252) accounted for 37% of the sample.

Students who had declared either hospitality management or restaurant management as their major (n = 647) dominated the sample population and accounted for 95% of the sample. The majority of students were 18-22 years old (n = 528), and

accounted for 77.5% of the sample. Most of the respondents were citizens of the United States (n = 645). All but 65 of the respondents had some level of experience working in the hospitality industry (n = 616). This could be a result of the population studied being located in one of the country's most popular tourist destinations, Orlando, Florida. The majority (29.7%) of respondents had over 4 years of hospitality industry experience (n = 202).

Although most respondents (88.6%) did have some level of hospitality industry work experience, over 30% had not participated in the cooperative education program yet. The largest group (32.6%) reported having not started their co-op experiences (n = 222). Those reporting that they had one semester of co-op experience (n = 192) were the next largest group accounting for 28.2% of the sample. Next were those who indicated that they had participated in the co-op experience for two semesters (n = 128). More than 18% of the respondents indicated that they participated in the co-op experience for three of more semesters (n = 125).

Almost 62% of the respondents indicated that they had previous work experience outside of the hospitality industry (n = 421). An overwhelming 82% of the respondents indicated that they were not currently working outside of the hospitality industry (n = 558). Most respondents indicated having an overall grade point average (GPA) of between 3.0 and 3.49 (n = 284), followed by those who reported that their overall GPA was between 3.5 and 3.99 (n = 167). When asked about their hospitality curriculum specific GPA, only 47 respondents indicated having a hospitality GPA of less than a 3.0. Over 96% of the respondents were single (n = 652).

Research Question 1

What are the student perceptions of learning as a result of their classroom experiences?

In the analysis of the first research question, the researcher attempted only to collect data in order to describe student perceptions of learning in their classroom experiences. Student respondents were asked to rate their perception of learning as it related to their classroom experiences for 29 items using a Likert-type scale ranging from 1-7. The degrees of measurement used were: 1=Decreased significantly; 2=Decreased moderately; 3=Decreased slightly; 4=No change; 5=Increase slightly; 6=Increased moderately; 7=Increased significantly.

The researcher analyzed the mean and standard deviation reported for each item on the survey instrument in order to investigate this research question. All items received mean scores above five indicating that student perceptions of learning as a result of their classroom experiences increased to some degree. The item "practical knowledge related to major" received the highest mean score of 6.03 (n = 678), indicating a mean response slightly higher than "increased moderately." All other mean scores fell between five and six indicating responses between increased slightly and increased moderately. The items with the lowest reported mean scores were "financial management skills," "ability to design and conduct experiments," and "writing skills" with mean scores of 5.04, 5.07, and 5.14 respectively.

Research Question 2

What are the student perceptions of learning as a result of their experiential learning experiences?

Student respondents were asked to rate their perception of learning as it relates to their co-op or internship experiences for 29 items on a scale from one to seven. The items were identical to those used for the first research question, but the context was changed to inquire about students' experiential learning experiences. The degree of measurement used was: 1=Decreased significantly; 2=Decreased moderately; 3=Decreased slightly; 4=No change; 5=Increased slightly; 6=Increased moderately; 7=Increased significantly.

In order to investigate this question, the researcher analyzed the mean and standard deviation reported for each item on the survey instrument. The item "practical knowledge related to major" received the highest mean score of 6.11 indicating that students in the sample perceived their learning to fall between increased moderately and increased significantly. With the exception of "ability to design and conduct experiments," which received a mean score of 4.89, and "writing skills," which received a mean score of 4.95, all other items received scores higher than five indicating that student respondents perceived that their learning had at least increased slightly.

Research Question 3

What are the statistically significant differences, if any, between student perceptions of learning in the classroom and their perceptions of learning in experiential learning experiences?

The researcher attempted to answer this question in three separate contexts. First, the researcher looked at students who had participated in the experiential learning

program. Next, the researcher compared the data reported by students who had participated in the experiential learning program and the data reported by students who had not participated in the experiential learning program. Finally, the researcher analyzed the data based on gender.

The researcher first performed a paired samples or dependent samples t-test, comparing student responses for their perceptions of learning in the classroom environment with their perceptions of learning in their experiential learning assignments. A total of 14 items of 29 were found to have statistically significant differences between student perceptions of learning in the classroom environment and their perceptions of learning in their experiential learning experiences. Students reported learning more in nine areas as a result of their experiential learning assignments. They also reported learning more in five areas as a result of their classroom experiences.

The nine items that students reported significantly higher perceptions of learning in their experiential learning assignments than in the classroom were practical knowledge related to major, how organizations function, ability to view career expectations realistically, professional network of contacts, ability to take initiative, ability to adapt to change, leadership skills, self-confidence and financial management skills. Cooper, Bottomly, and Gordon (2004) claimed that experiential learning opportunities afford students opportunity for deeper levels of learning and application of classroom learning. They assumed that deeper learning occurred as the student increased his or her level of involvement in the activity. This idea fits well with Kolb's (1984) learning cycle. Kolb explained that there are four stages of learning: (a) experience, which leads to (b)

observation and (c) reflection, which leads to the development of new ideas and (d) experimentation, which leads to further experience. Learning is most effective when it is grounded in experience (Train & Elkin, 2001). Dewey stated that it is not sufficient for the teacher to merely transmit information to the student or for the student to participate in active tasks in order for learning to occur (Cooper, Bottomley, & Gordon). Dewey (1938) claimed that for real learning to occur at deeper levels that education needed to be grounded in experience, and that experience needed to be accompanied by the student's active reflection on his or her experience. The researcher believed that students reported comparatively higher levels of learning in these nine learning outcomes as a result of the opportunity for students to develop and exercise specific skills in a real world setting structured for learning in which they could experience the bigger picture and context of how organizations function on a daily basis, as well as how organizations work to accomplish specific organizational goals. The researcher concluded that the increased learning reported by participants in these nine areas were the result of being a part of and interacting with a team of co-workers, and agreed that the specific interactions and intricacies of teamwork are often difficult to produce in a classroom environment.

Respondents reported significantly higher perceptions of learning in the classroom than in their experiential learning assignments in five areas: oral presentation skills, writing skills, ability to work with others to accomplish a goal, ability to design and conduct experiments, and awareness of civic responsibilities. The researcher concluded that the comparatively higher levels of learning in these five areas was the result of the classroom environment being structured to nurture these personal growth

learning outcomes. With the exception of the item, ability to work with others to accomplish a goal, these learning outcomes reflect individual personal growth that allows a student to succeed in academic settings. Although the researcher previously alluded to the difficulty in creating realistic team-oriented work situations in the classroom, many classes do include a team or group project involving specific interactions with groups of students focused on one particular goal.

Next, the researcher investigated differences in student perceptions of learning in the classroom of students who had participated in the experiential learning program and of students who had not participated in the experiential learning program. The researcher did this by performing an independent samples t-test for the two groups of respondents. The researcher found eight statistically significant differences in student perceptions of learning in the classroom between those who had participated in the experiential learning program, and those who had not participated in the experiential learning program. Dressler (2003) explained that cooperative education is inherently developmental because it allows students the opportunity to apply what they are learning as they are learning it. Not only are students afforded the opportunity to apply what they learn in the classroom in the workplace, but they are equally afforded the opportunity to apply what they are learning in the workplace in the classroom environment.

Respondents who had participated in the experiential learning program reported significantly higher scores for four items regarding their perceptions of learning in the classroom. The four items that students who had participated in the experiential learning program reported significantly higher perceptions of learning while in the classroom were

professional network of contacts, ability to make decisions, self-confidence, and time management skills. The researcher observed that these four learning outcomes related to the opportunity for a student to effectively take responsibility necessary to be employed. Unlike the classroom environment where absences or tardiness may be overlooked, most employers in the hospitality industry would not be willing to overlook such transgressions.

Respondents who had not participated in the experiential learning program also reported significantly higher scores for four items regarding their perceptions of learning in the classroom. The four items that students who had not participated in the experiential learning program reported significantly higher perceptions of learning while in the classroom were practical knowledge related to their major, practical knowledge related to their career goals, motivation to learn in the classroom, and motivation to continue and persist to graduation. The researcher regarded it important to point out that differences reported here are comparatively higher between students who had not participated when compared to students who had participated in experiential learning. The data do not indicate that students who did not participate in experiential learning actually learn more in these areas than the students who did participate in experiential learning. The significant differences reported could be the result of students who did participate in experiential learning reporting lower perceived levels of learning for these particular items because of the interaction and comparison of the learning they experienced in their experiential learning assignments.

The researcher also analyzed the data to determine if there were any statistically significant differences reported by students based on gender. Similar to many student populations at other hospitality programs, female students outnumbered male students in the population studied (R. Springall, personal communication, June 1, 2006). The data were analyzed by performing an independent samples *t*-test for two groups, males and females. All together, there were four statistically significant differences reported when the researcher compared students' perceptions of learning in their experiential learning assignments by gender. It is very interesting that in all four instances, females reported a higher mean score than their male classmates. There was found to be a statistically significant difference between mean scores reported by students regarding their motivation to continue and persist to graduation, ability to take initiative, ability to follow through, and ability to adapt to change.

When comparing student perceptions of learning in their classroom environments by gender, two statistically significant differences emerged. It is also interesting to note that these two items received higher mean scores for female students than their male classmates. There was found to be a statistically significant difference between mean scores reported by students regarding their ability to apply core knowledge and motivation to learn in the classroom.

The researcher found it interesting that all of the items that were found to have reported significantly higher levels of learning reported by females, regardless of the context of experiential learning or classroom environment, related to a student's motivation to participate, engage, adapt, persist, and continue on to completion in the

curriculum. Although this study did not attempt to measure participants' levels of motivation or passion and interest in the study of the hospitality industry, it was recognized that these significant differences could be the result of higher levels of passion and motivation to study the hospitality industry that may be inherent in females when compared to male as evidenced by the larger number of female students in the population studied, as well as enrolled in hospitality programs in general.

Next the researcher analyzed the data for differences in perceptions of learning in students' experiential learning assignments based on the number of co-op terms in which a student had participated. This was done by performing an analysis of the variance (ANOVA) with the data divided into four groups. First, there was a group of students who had not participated in co-op. Next, there was a group comprised of students who indicated that they had participated in only one co-op term. Another group was comprised of students who had indicated that they had participated in exactly two co-op terms. The last group was comprised of students who had indicated that they had participated in at least three co-op terms. These groups were used to perform an ANOVA on both student perceptions of learning in their experiential learning assignments, and their perceptions of learning in the classroom environment.

Regarding students' perceptions of learning in their experiential learning assignments, there was a significant effect based on the number of semesters a student had participated in the co-op program on three items; oral presentation skills, writing skills, and maturity. Of the three items, only maturity reported a statistically significant Levene statistic of 4.274 (2, 484) $p > .05$, indicating homogeneity of the variances for this

item and that the *F* statistic for this item may be inaccurate. A closer look at the mean scores reported for each of these items shows that students who were involved with two semesters of co-op reported a higher level of increase in mean scores when compared to students who were only involved with one semester of co-op. However, when students had been involved for three or more co-op terms, the reported increase in mean scores for these three items decreased when compared to the increase reported by students involved with co-op for exactly two semesters but were still higher than those reported by students in the one semester of co-op group.

There was a significant effect of the number of semesters a student had participated in the co-op program on seven items regarding students' perceptions of learning in the classroom; practical knowledge related to major (reported a statistically significant Levene statistic), practical knowledge related to career goals, professional network of contacts (reported a statistically significant Levene statistic), motivation to learn in the classroom, oral presentation skills, writing skills, and time management skills. Of the seven items, only practical knowledge related to major and professional network of contacts reported a statistically significant Levene statistic, indicating homogeneity of the variances for these two items and that the *F* statistic for these items may be incorrect.

The mean scores reported for practical knowledge related to career goals shows that as students were involved with increasing numbers of semesters of co-op their reported mean scores decreased in a linear fashion. Students with zero semesters of co-op participation reported a mean score of 5.95. Students with one semester of co-op

participation reported a mean score of 5.88. Students with two semesters of co-op experience reported a mean score of 5.77, and students with 3 or more semesters of co-op experience reported a mean score of 5.6.

The item regarding students' perceived motivation to learn in the classroom also reported a similar trend in mean scores. Students with zero semesters of co-op participation reported a mean score of 5.75. Students with one semester of co-op participation reported a mean score of 5.43. Students with two semesters of co-op experience reported a mean score of 5.41, and students with 3 or more semesters of co-op experience reported mean score of 5.24. It is important to remember that the data do not indicate that students' reported perceptions of learning decreased in a linear fashion as they participated in experiential learning but that the scores reported reflected a comparative difference that still indicates learning occurred. The significant differences reported could be the result of students reporting lower perceived levels of learning for these particular items as the interaction and comparison of the learning they experienced in their experiential learning assignments increased.

The item regarding students' perceived learning of oral presentation skills reported an opposite trend in mean scores. Whereas the number of semesters of co-op participation increased, so did the reported mean score of perceived learning. Students with zero semesters of co-op participation reported a mean score of 5.18. Students with one semester of co-op participation reported a mean score of 5.4. Students with two semesters of co-op experience reported a mean score of 5.61, and students with 3 or more semesters of co-op experience reported mean score of 5.67.

The item regarding students' perceived learning of writing skills reported the same linear trends as reported for oral presentation skills. As the number of semesters of co-op participation increased, so did the reported mean score of perceived learning. Students with zero semesters of co-op participation reported a mean score of 4.99. Students with one semester of co-op participation reported a mean score of 5.06. Students with two semesters of co-op experience reported a mean score of 5.29, and students with 3 or more semesters of co-op experience reported mean score of 5.34.

The mean scores reported for time management skills indicated that as students were involved with one and two semesters of co-op, their reported mean scores increased with each semester. However, when the students had been involved for three or more co-op terms, the rate of increased learning reported decreased. Still, it was higher than those reported by students in the zero semesters of co-op group.

Research Question 4

What are the statistically significant differences, if any, between student perceptions of learning in the classroom and their perceptions of learning in experiential learning experiences based on class standing (Freshman, Sophomore, Junior, Senior)?

The researcher analyzed the data for differences in perceptions of learning in students' experiential learning assignments based on their class standing. This analysis was done by performing an analysis of the variance (ANOVA) with the respondents divided into four groups. Students completing up to 29 semester credit hours were considered freshmen. Students completing between 30 and 59 semester credit hours were considered sophomores. Students between 60 and 89 semester credit hours were

considered juniors. Students completing 90 or more semester credit hours were considered seniors. These groups were used to perform an ANOVA on both student perceptions of learning in their experiential learning assignments and their perceptions of learning in the classroom environment.

The ANOVA results of student perceptions of learning in their experiential learning assignments showed that there were no significant effects of class standing on any of the items. Next the researcher analyzed the data for differences in perceptions of learning in student's classroom experiences based on their class standing. This analysis was done by performing an ANOVA with the respondents divided into the same four groups for the previous analysis. There was a significant effect of class standing on four items regarding students' perceptions of learning in the classroom; practical knowledge related to major, practical knowledge related to career goals, motivation to learn in the classroom, and oral presentation skills.

It is important to note that three of the four items (practical knowledge related to major, practical knowledge related to career goals, and motivation to learn in the classroom) reported a statistically significant Levene statistic, indicating homogeneity of the variances for these items and that the *F* statistic for these items may be incorrect. A closer look at the mean scores reported for oral presentation skills shows that as students progressed from freshmen to sophomores to juniors to seniors, their reported mean scores increased in a linear fashion. Freshmen reported a mean score of 5.21. Sophomore reported a mean score of 5.28. Juniors reported a mean score of 5.37, and seniors reported mean score of 5.58.

Conclusions

This study sought to analyze differences in student perceptions of learning in their experiential learning assignments and their classroom experiences. The researcher used four research questions to guide this investigation. While attempting to answer each research question, several statistically significant differences in student perceptions of learning were discovered in both contexts of students' experiential learning assignments and their classroom experiences. The following conclusions have been drawn as a result of the data analysis performed for this study:

1. It was concluded that students perceive that learning occurs in both their experiential learning assignments and their classroom experiences for all 29 items that were measured in the study.
2. Students reported that they perceived practical knowledge related to their major increased more than any other item in both their experiential learning assignments and their classroom experiences. However, it was concluded that practical knowledge related to their major was perceived to be significantly higher as a result of students' experiential learning assignments than it was as a result of students' classroom experiences.
3. Students reported significantly higher perceptions of learning in their experiential learning assignments than in the classroom for nine items: practical knowledge related to major, how organizations function, ability to view career expectations realistically, professional network of contacts, ability to take initiative, ability to adapt to change, leadership skills, self-confidence

and financial management skills. As a result, it was concluded that students tended to learn more about the big-picture context of how they can fit into the hospitality industry as individuals and how they can personally apply themselves to the hospitality world of work as a result of experiential learning assignments than they do in the classroom environment.

4. Students reported significantly higher perceptions of learning in the classroom than their experiential learning assignments for five items: oral presentation skills, writing skills, ability to work with others to accomplish a goal, ability to design and conduct experiments, and awareness of civic responsibilities. The researcher concluded that students tended to learn more individual skills as a result of their classroom environment that allowed them to apply themselves and succeed in academic settings than they did in their experiential learning assignments.
5. The researcher also concluded the possibility that some skills, which students reported higher perceptions of learning in their classroom environments, such as verbal and written presentation skills, working with others to accomplish a goal, designing and conducting experiments, as well as an overall awareness of civic responsibilities and how one becomes a valuable and contributing member of society may be learned by observation in a student's experiential learning assignment. Once the student has learned these skills through observation and interaction with their supervisors and managers in their experiential learning assignments, the student is more able to then, as a result

of their experiential learning, apply what they have learned in the classroom environment with their peers.

6. Respondents who had participated in the experiential learning program reported significantly higher scores for four items regarding their perceptions of learning in the classroom: professional network of contacts, ability to make decisions, self-confidence, and time management skills. It was concluded that as a result of participating in the experiential learning program students were more confident in themselves and the decisions they made, possessed better time management skills and valued networking with professionals more.
7. Respondents who had not participated in the experiential learning program also reported significantly higher scores for four items regarding their perceptions of learning in the classroom: practical knowledge related to their major, practical knowledge related to their career goals, motivation to learn in the classroom, and motivation to continue and persist to graduation. It was concluded that students who had not participated in the experiential learning program reported higher levels of learning for items such as practical knowledge related to their major and practical knowledge related to their career goals because of the lack of experiential learning. Although the students reported significantly higher levels of learning as a result of their classroom experiences, the significant difference is the result of comparing student responses with the group of students who were engaged in experiential learning. Therefore, the researcher concluded that the significant differences

may be the result of students who were engaged in experiential learning reporting lower scores when asked about their practical knowledge related to their major and to their career goals as a result of their classroom experiences. The researcher suggests that the significant differences are the result of students who were engaged in experiential learning reporting lower scores for learning more practical knowledge in their classroom environments as a result of learning they gained in their experiential learning assignments.

8. It was also discovered in this study that the mean scores reported for practical knowledge related to career goals as a result of students' classroom experiences decreases in a linear fashion as students were involved with increasing numbers of semesters of co-op. However, the researcher did not conclude that students learn less practical knowledge in the classroom as a result of increased experiential learning experience. It was concluded that as students were engaged in their experiential learning assignments they learn more practical knowledge about the hospitality industry and it became more second nature. As a result of engaging in experiential learning, the scores reported by students in this study increased with a decreasing rate. This was determined when examining groups of students who had participated in one, two, and three or more semesters of experiential learning.
9. It was concluded that female students reported learning more than did male students for six items. This may be related to a potentially higher level of

motivation for female students to study the hospitality industry when compared to their male classmates.

10. Students' perceived motivation to learn in the classroom also reported a declining linear trend as students engaged in more semesters of experiential learning. It was concluded that as students gained more practical experience in the hospitality industry they became more motivated to learn practical lessons from the industry they were preparing to enter and less motivated to learn in an academic classroom. Mellor (1991) explained why students may be more motivated to learn in experiential learning opportunities than in the classroom. In most cases, the classroom is teacher-centered because the teacher usually guides the presentation of material and lectures. Experiential learning opportunities are usually student-centered because the learning is guided by the individual student's experiences, choices, and decisions as they experience new situations (Mellor). This creates a higher level of student engagement, interest and involvement in the learning process as a result of student centered experiential learning as compared to teacher focused learning in the classroom.

Recommendations

Multiple leading authorities within the field of experiential learning have asserted that experiential learning professionals should become more research oriented (Bartkus & Stull, 1997, 2004; Ricks et al., 1990; Ryder, 1987; Weaver, 1993; Wilson, 1988). Ricks et al. argued that scientific research will help cooperative education be more of a part of the

mainstream of higher education. Weaver (1993) asserted that the "identity of co-op as an academic program must be reinforced" (p. 6). Weaver continued to explain that the mechanism for reinforcement is research:

> To be credible, cooperative education must be able to substantiate claims that cooperative education practice is good educational practice and be able to relate cooperative education practice to the theoretical framework of education. (p. 10)

Kolb's (1984) learning cycle included four stages of learning: (a) experience, which leads to (b) observation and (c) reflection, which leads to the development of new ideas and (d) experimentation, which leads to further experience. Learning is most effective when it is grounded in experience (Train & Elkin, 2001). Dressler (2003) explained that cooperative education is inherently developmental because it allows students the opportunity to apply what they are learning as they are learning it.

Fletcher (1989) identified three groups of learning outcomes as a result of participation in an experiential learning program into which much of the literature reviewed can be classified: personal development, career development, academic development. Parks, (2003) added professional/work-skills development as a fourth group of learning outcomes.

This study attempted to add to the literature of research regarding learning outcomes by contrasting learning in the classroom environment and cooperative education learning assignments. It is important to point out in this discussion that participants in this study reported increases of learning for all learning outcomes measured in this study, regardless of the context of either experiential learning assignments or the classroom environment. Participants in this study who had

participated in both the classroom and experiential learning reported 14 or about half of the 29 items on the survey instrument had significant differences in student perceptions of learning when comparing student perceptions of learning in both the classroom environment and their experiential learning assignments. Specific recommendations should be considered for implementation into hospitality programs of study as a result of this research.

Experiential Learning in the Curriculum

Many leading hospitality programs currently incorporate an experiential learning component into their curricula. Benefits of experiential learning or cooperative education programs have been well documented. They include: (a) improved student self-confidence, self-concept, and improved social skills (Gillan, Davies, & Beissel, 1984). (b) increased practical knowledge and skills (Williams et al. (1993), and (c) enhanced employment opportunities (Clark, 1994; Sharma, Mannel and Rowe, 1995). This study confirmed these previously documented benefits of experiential learning, as well as an increased understanding of how organizations function, increased ability to view career expectations realistically, an increased network of professional contacts, increased ability to take initiative, increased ability to adapt to change, increased leadership skills and increased financial management skills.

Many programs have taken note of these benefits. As King (1994) explained, the placement of students in various organizations and work environments as trainees is an academic requirement to foster the work experience so the students will attain the necessary skills to supplement their theoretical training. The researcher recommends that

university and program administrators continue to value and include experiential learning as a viable and important curriculum element necessary to produce successful graduates for the hospitality industry. In addition, the researcher recommends that those hospitality programs that currently do not incorporate experiential learning into their curriculums should begin to do so in order to enhance and improve student learning.

Synergistic Efforts of all Faculty

Ricks et al. (1990) argued that scientific research will help cooperative education be more of a part of the mainstream of higher education. Weaver (1993) asserted that the "identity of co-op as an academic program must be reinforced" (p. 6). As a result of this study, the researcher recommends that experiential learning faculty members join their mainstream classroom faculty counterparts in a joint effort to increase student learning. Classroom faculty members should consider the benefits experiential learning brings to the classroom environment. There exists the possibility that students may report higher perceptions of learning in the classroom because of the nature of these items and because of the integration of experiential learning into the curriculum, these higher scores reported may indeed be the result of students engaged in experiential learning being able to apply what they learn in their experiential learning assignments more appropriately in the classroom, resulting in higher levels of learning overall being reported by the students.

Recommendations for Future Research

Based on a review of the literature and this study, the researcher recommends the following be considered for future research:

Additional research should be considered to replicate this study with more students involved with hospitality education at multiple institutions. This would allow future researchers to study and account for the interaction of different curriculums, different institutional influences, and different experiential learning opportunities.

Additional research should be considered to further investigate the relationship of student learning opportunities in experiential learning in the hospitality industry and how these impact student learning opportunities inside the classroom environment in the hospitality management curriculum. This would allow future researchers to study more closely the interaction of the classroom environment and experiential learning opportunities.

Additional research should be considered to include a study similar to this particular study on a longitudinal basis. This would allow researchers to study how the interaction of the classroom and experiential learning opportunities affect individual students over time.

Additional research should be considered to include a study regarding differences in levels of students' motivation based on gender to enroll in, participate in, and persist and continue until graduation specifically in hospitality programs.

APPENDIX A:

INFORMED LETTER OF CONSENT

January 22, 2006

Dear Student:
I am a graduate student at the University of Central Florida. As part of my coursework, I am conducting a survey, the purpose of which is to learn about student perceptions of learning in their cooperative education work-assignments, as well as their classroom environments. The survey should take no longer than 12 minutes. The survey is attached to this letter. You will not have to answer any question you do not wish to answer. Your identity will be kept confidential and will not be revealed in the final manuscript. You must be 18 years of age or older to participate.

There are no anticipated risks, compensation or other direct benefits to you as a participant in this survey. You are free to withdraw your consent to participate and may discontinue your participation in the survey at any time without consequence.

If you have any questions about this research project, please contact me at (407) 903-8000. My faculty supervisor, Dr. Levester Tubbs, may be contacted at (407) 823-1466 or by email at Tubbs@mail.ucf.edu. Research at the University of Central Florida involving human participants is carried out under the oversight of the Institutional Review Board (IRB). Questions or concerns about research participants' rights may be directed to the Institutional Review Board Office, IRB Coordinator, University of Central Florida, Office of Research & Commercialization, 12443 Research Parkway, Suite 302, Orlando, FL 32826-3252. The telephone number is (407) 823-2901.

Please sign this copy of the letter before starting the survey. A second copy is provided for your records. By signing this letter, you give me permission to report your responses anonymously in the final manuscript to be submitted to my faculty supervisor as part of my course work.
Sincerely,
Scott Lee, Doctoral Candidate

___ I have read the procedure described above for the School Curriculum Interview assignment.
_ I voluntarily agree to participate in the interview.
____ I agree to be audio taped during the interview.
____ I do not agree to be audio taped during the interview.

/
Participant Date

/
Principal Investigator Date

APPENDIX B:

P.L.A.C.E. INSTRUMENT

P.L.A.C.E.

To improve our understanding of student perceptions of learning, I am investigating individual student responses to the following survey regarding learning in experiential learning (co-op or internship) assignments and the classroom environment. Your answers to the following questions will be very helpful.

Directions:

- **Please answer each based on your own opinion.**
- **Place an X on the number that corresponds with your answer; the scale ranges from 1 = decreased significantly to 7 = increased significantly.**
- **If something does not apply to you, place an X in the last box.**

Start here ▼ For items 1 through 29, please answer only as it relates to ALL of your co-op or internship experiences while at the Rosen College:

	Decreased Significantly	Decreased Moderately	Decreased Slightly	No Change	Increased Slightly	Increased Moderately	Increased Significantly	Not Applicable
1. . . . I feel that my practical knowledge related to my major has	1	2	3	4	5	6	7	N
2. . . . I feel that my practical knowledge related to my career goals have	1	2	3	4	5	6	7	N
3. . . . My understanding of how organizations function has	1	2	3	4	5	6	7	N
4. . . . Clarity of career goals has	1	2	3	4	5	6	7	N
5. . . . My ability to view my career expectations realistically has	1	2	3	4	5	6	7	N
6. . . . My professional network of contacts in my field has	1	2	3	4	5	6	7	N
7. . . . Opportunities to learn from professionals in my field has	1	2	3	4	5	6	7	N
8. . . . My ability to apply core knowledge within my field of study has	1	2	3	4	5	6	7	N
9. . . . My motivation to learn in the classroom has	1	2	3	4	5	6	7	N
10. . . . My motivation to continue and persist to graduation has	1	2	3	4	5	6	7	N
11. . . . My ability to take initiative has	1	2	3	4	5	6	7	N
12. . . . My ability to follow through on tasks and projects has	1	2	3	4	5	6	7	N
13. . . . My desire to pursue life-long learning has	1	2	3	4	5	6	7	N
14. . . . My ability to set priorities has	1	2	3	4	5	6	7	N
15. . . . My ability to creatively identify, formulate, and solve problems has	1	2	3	4	5	6	7	N
16. . . . My ability to adapt to change has	1	2	3	4	5	6	7	N
17. . . . My leadership skills have	1	2	3	4	5	6	7	N
18. . . . My ability to contribute to a team effort has	1	2	3	4	5	6	7	N
19. . . . My oral presentation skills has	1	2	3	4	5	6	7	N
20. . . . My writing skills has	1	2	3	4	5	6	7	N
21. . . . My ability to work with others to accomplish a goal has	1	2	3	4	5	6	7	N
22. . . . My ability to design and conduct experiments has	1	2	3	4	5	6	7	N
23. . . . My ability to make decisions has	1	2	3	4	5	6	7	N
24. . . . My self confidence has	1	2	3	4	5	6	7	N
25. . . . My time management skills have	1	2	3	4	5	6	7	N
26. . . . My financial management skills have	1	2	3	4	5	6	7	N
27. . . . My interpersonal communication skills have	1	2	3	4	5	6	7	N

28. . . . My awareness of civic responsibilities has	1	2	3	4	5	6	7	N
29. . . . My maturity has	1	2	3	4	5	6	7	N

Please continue survey on other side.

. . . Continued from other side

Directions:

- **Please answer each based on your own opinion.**
- **Place an X on the number that corresponds with your answer; the scale ranges from 1 = decreased significantly to 7 = increased significantly.**
- **If something does not apply to you, place an X in the last box.**

Start here ▼ For items 30 through 58, please answer only as it relates to ALL of your classroom experiences while at the Rosen College:

	Decreased Significantly	Decreased Moderately	Decreased Slightly	No Change	Increased Slightly	Increased Moderately	Increased Significantly	Not Applicable
30. . . .I feel that my practical knowledge related to my major has	1	2	3	4	5	6	7	N
31. . . . I feel that my practical knowledge related to my career goals have	1	2	3	4	5	6	7	N
32. . . . My understanding of how organizations function has	1	2	3	4	5	6	7	N
33. . . . Clarity of career goals has	1	2	3	4	5	6	7	N
34. . . . My ability to view my career expectations realistically has	1	2	3	4	5	6	7	N
35. . . . My professional network of contacts in my field has	1	2	3	4	5	6	7	N
36. . . . Opportunities to learn from professionals in my field has	1	2	3	4	5	6	7	N
37. . . . My ability to apply core knowledge within my field of study has	1	2	3	4	5	6	7	N
38. . . . My motivation to learn in the classroom has	1	2	3	4	5	6	7	N
39. . . . My motivation to continue and persist to graduation has	1	2	3	4	5	6	7	N
40. . . . My ability to take initiative has	1	2	3	4	5	6	7	N
41. . . . My ability to follow through on tasks and projects has	1	2	3	4	5	6	7	N
42. . . . My desire to pursue life-long learning has	1	2	3	4	5	6	7	N
43. . . . My ability to set priorities has	1	2	3	4	5	6	7	N
44. . . . My ability to creatively identify, formulate, and solve problems has	1	2	3	4	5	6	7	N
45. . . . My ability to adapt to change has	1	2	3	4	5	6	7	N
46. . . . My leadership skills have	1	2	3	4	5	6	7	N
47. . . . My ability to contribute to a team effort has	1	2	3	4	5	6	7	N
48. . . . My oral presentation skills has	1	2	3	4	5	6	7	N
49. . . . My writing skills has	1	2	3	4	5	6	7	N
50. . . . My ability to work with others to accomplish a goal has	1	2	3	4	5	6	7	N
51. . . . My ability to design and conduct experiments has	1	2	3	4	5	6	7	N
52. . . . My ability to make decisions has	1	2	3	4	5	6	7	N
53. . . . My self confidence has	1	2	3	4	5	6	7	N
54. . . . My time management skills have	1	2	3	4	5	6	7	N
55. . . . My financial management skills have	1	2	3	4	5	6	7	N

56. . . . My interpersonal communication skills have	1	2	3	4	5	6	7	N
57. . . . My awareness of civic responsibilities has	1	2	3	4	5	6	7	N
58. . . . My maturity has	1	2	3	4	5	6	7	N

. . . Continued from previous page

Directions: Please answer each item below.

1. I am a:
   a. Female
   b. Male
2. I am a:
   a. Freshman (completed up to 29 semester credits)
   b. Sophomore (completed up to 59 semester credits)
   c. Junior (completed up to 89 semester credits)
   d. Senior (completed 90 semester credits or more)
3. I am a:
   a. Hospitality Major
   b. Hospitality Minor
   c. Other, Major: _____
4. My age is: _____
5. I am a:
   a. U.S. Citizen
   b. Permanent Resident
   c. International Student (F1-VISA)
   d. Other _____
6. How long have you worked in the hospitality industry? ____years ____months
7. How many semesters have you participated in an internship or co-op experience while attending the Rosen College of Hospitality Management?
8. Do you have previous work experience in a field other than hospitality?
   a. Yes - How long? _____
   b. No
9. Do you currently work in non-hospitality related jobs?
   a. Yes – How many hours a week? _____
   b. No
10. What is your GPA? _____Overall _____Hospitality Courses
11. Marital Status:
    a. Single
    b. Married

Thank you very much for completing this survey!

APPENDIX C:

INSTITUTIONAL REVIEW BOARD APPROVAL LETTER

University of Central Florida

Office of Research & Commercialization

January 11, 2006

Scott Lee
5443 Stratfield Drive
Orlando, FL 32826

Dear Mr. Lee:

The University of Central Florida's Institutional Review Board (IRB) received your protocol IRB #05-3141 entitled, "**Student Perceptions of Learning in Experiential Learning Opportunities and the Classroom Environment**." The IRB Chair did not have any concerns with the proposed project and has indicated that under federal regulations, Category #4, research involving the use of existing data, documents, and records, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifies linked to the subjects, this research is **exempt** from further review by our IRB, so an approval is not applicable and a renewal within one year is not required. The data is public information.

Please accept our best wishes for the success of your endeavors. Should you have any questions, please do not hesitate to call me at 407-823-2901.

Cordially,

Barbara Ward

Barbara Ward, CIM
IRB Coordinator

Copies: IRB File
Dr. LeVester Tubbs, Ed.D.

BW:jm

APPENDIX D:

THE COOPERATIVE EDUCATION MODEL

The Cooperative Education Model

The co-op model which follows was developed by a national committee of experienced practitioners. The definition and essential characteristics were approved by the boards of the National Commission for Cooperative Education, Cooperative Education Association and the Cooperative Education Division of the American Society for Engineering Education. Also included are a list of anticipated outcomes and five model variations for implementing co-op in colleges.

DEFINITION

Cooperative education is a structured educational strategy integrating classroom studies with learning through productive work experiences in a field related to a student's academic or career goals. It provides progressive experiences in integrating theory and practice. Co-op is a partnership among students, educational institutions and employers, with specified responsibilities for each party. These include:

ESSENTIAL CHARACTERISTICS

Formal recognition by the school as an educational strategy integrating classroom learning and progressive work experiences, with a constructive academic relationship between teaching faculty and co-op faculty or administrators.

Structure for multiple work experiences in formalized sequence with study leading to degree completion of an academic program.

Work experiences which include both an appropriate learning environment and productive work. Work experiences related to career or academic goals. Formal recognition of the co-op experience on student records (e.g. grade, credit hours, part of degree requirement, notation on transcript, etc.) Pre-employment preparation for students, as well as ongoing advising.

Agreement among the school, employer and the student on:

- Job description and new learning opportunities
- Specified minimum work periods (equivalent in length to an academic term (quarter, semester or trimester). In alternating programs, students work approximately 40 hrs/wk, full-time during the term. In parallel programs, students work approximately 20 hrs/wk, part-time during the term.
- Work monitored by the school and supervised by employers
- Official school enrollment during employment
- Recognition as a co-op employee by the employer
- Evaluations by the student, the school, and the employer, with guided reflection by the student
- Remuneration for the work performed

Provision for employer and school evaluation of quality and relevance of the work experience and curriculum Designed to maximize outcomes for students, employers and the school.

ANTICIPATED OUTCOMES

Cooperative Education is designed to develop or enhance the following outcomes:

STUDENT OUTCOMES

Academic

- Ability to Integrate Classroom Theory with Workplace Practice
- Clarity about Academic Goals
- Academic Motivation
- Technical Knowledge Through Use of State-of-the-Art Equipment

Professional

- Clarity about Career Goals
- Understanding of Workplace Culture
- Workplace Competencies
- New or Advanced Skills
- Career Management
- Professional Network
- After-Graduation Employment Opportunities

Personal

- Maturity
- Determination of Strengths & Weaknesses
- Development/Enhancement of Interpersonal Skills
- Earnings to Assist College Expenses or to Support Personal Financial
- Responsibilities
- Productive and Responsible Citizenship Skills
- Lifelong Learning Skills

EMPLOYER OUTCOMES

- Well-prepared Short-term Employees
- Flexibility to Address Human Resource Needs
- Cost-effective Long-term Recruitment and Retention
- Access to Candidates with Sought-after Skills and/or Background
- Increased Staff Diversity
- Partnerships with Schools
- Input on Quality and Relevance of School's Curricula
- Cost-effective Productivity

COLLEGE AND UNIVERSITY OUTCOMES

- Recruitment of New Students
- Retention of Current Students
- Wider Range of Learning Opportunities for Students
- Enriched Curriculum
- Enhanced Reputation in the Employment Community
- Improved Rate of Employment of Graduates
- Increased Alumni Participation (hire students, contribute money, etc.)
- Partnerships with Business, Government and Community Organizations
- Increased External Support by Corporations, Foundations & Government Grants

SOCIETAL OUTCOMES

- Established Model for Workforce Preparedness
- Income Tax Revenue
- Reduced Demand for Student Loans
- Productive and Responsible Citizens
- Industry-Education Partnerships

COOPERATIVE EDUCATION MODEL VARIATIONS

All models of cooperative education should include the essential characteristics. However, variations in the needs of students, educational institutions and employers shape program models. Distinguishable characteristics include: differences in the structured role for employers beyond student supervision and evaluation; the structure for multiple terms and the pattern of participation (alternating or parallel); and the method and degree of formal recognition of co-op by the school.

All models should be designed to enhance student, employer, institution and societal outcomes. Future research should examine the impact of participation in co-op on targeted outcomes. In addition, research examining the correlation between program characteristics and outcomes will assist in identifying which models may be more effective in enhancing the outcomes for different audiences.

I. DISTINGUISHABLE CHARACTERISTICS:

Administered by School with Structured Employer Involvement

- In Cooperative Education Program Design (all models include a formalized employer role in supervision and evaluation)
- In Curriculum Design for Industry Specific Competencies

Formalized Sequential Work Pattern Structured to Provide for Multiple Terms

- Formalized Work Pattern
    - Alternating Pattern (40 hours per week/full-time)
    - Parallel Pattern (20 hours per week/part-time
- Specified Amount of Work Experience
    - Multiple Terms (A single term is defined as 1 semester, 1 trimester, or 2 quarters)
    - Minimum Amount of Work Experience

Academic Structure - Formal Recognition of Co-op by the School

- Credit or Non-Credit Bearing
- Notation on Transcript/Certificate of Completion
- Secondary to Post secondary Articulation
- Certification Process
    - for Cooperative Education Program
    - for Student--Industry Specific Credential

II. CO-OP MODELS:

(Current models of implementation at the post secondary level)

Flexible 4-Year Model

- Informal Employer Role in Co-op Program Design
- Parallel/Alternating/Full-Time Summer and Designed for Multiple Terms
- Both Credit and Non-Credit Bearing Programs

Community College Model

- Informal Employer Role in Co-op Program Design/Opportunities for Formalized Role in Curriculum Design for Specific Competencies (more formal role in review of previous experience when advancing within a field)
- Predominantly Parallel and Full-Time Summer with Limited Opportunities for Multiple Terms/May Include Secondary to Post secondary Articulation
- Predominantly Credit Bearing/Opportunities for Industry Specific Credential

Nontraditional Student Model
(Can be adapted in either Flexible 4-year or Community College Models)

- Informal Employer Role in Co-op Program Design (more formal role in review of previous experience when advancing within a field)
- Predominantly Parallel with Limited Opportunities for Multiple Terms (flexible to meet students' needs)
- Predominantly Credit Bearing with Opportunities for Industry-Specific Credential

Accreditation Board for Engineering & Technology (ABET) Baccalaureate Model (also used in non-engineering fields). (ABET Associate Engineering Technology degree programs have different requirements).

- Formalized Employer Role in Co-op Program Design
- Alternating Pattern/Multiple Terms/Minimum of 1-Year Experience Required
- Both Credit and Non-credit Bearing Programs/Certificate of Student's Completion of Program/Engineering Co-op Accreditation

Articulated Co-op Model
(May include programs such as Tech Prep, 2+2 and School-to-Work when the post secondary component meets co-op's definition and essential characteristics).

- Formalized Employer Role in Curriculum Design for Specific Competencies
- Predominantly Parallel and Full-Time Summer with Limited Opportunities for Multiple Terms/Secondary to post secondary Articulation (Co-op portion may or may not be articulated).
- Certification Process for Industry - Specific Credential

Note: A single term is defined as one semester, one trimester or two quarters.

APPENDIX E:

A.C.C.E. CRITERIA FOR ACCREDITATION

Criteria for Accreditation

The criteria for accreditation through the Accreditation Council for Cooperative Education have been developed based upon The Attributes of Cooperative Education Programs, a structural model that reflects the founding principles and distinctive definition of cooperative education. They provide a set of standards that are subscribed to by a significant number of programs of cooperative education and a conceptual framework that advances cooperative education as a discipline.

CRITERION ONE: The institution has effectively included cooperative education as an integral part of the academic program and has implemented policies and practices appropriate to achievement of program educational goals.

- A permanent record of student participation in cooperative education work experiences, for each work term, is documented on the official institutional student academic transcript.
- Cooperative education work experiences are formally identified by the institution as part of the curriculum.
- Student work experiences and related learning take place under real-world working conditions.
    - While on cooperative work experience periods students are considered as employees of the hiring organization and subject to the policies and laws that relate to other employees of the organization.
    - Participating students will receive compensation in the form of wages for work performed.
    - Students will be under the supervision of the employing organization and perform work assigned by the employer.
- New students in the program are provided with an orientation to program purposes and policies and the expectations for their participation.
- The institution engages in ongoing assessment to ensure that cooperative education work experiences are related to student academic and/or career goals.
- The program's monitoring practices of student workplace experiences are used to facilitate breadth of practical experiences for students and/or provide for progression to increased responsibilities as they advance in their education program.
- Methods are used to evaluate student performance for each work period.
- Process and methods are used to assist all participating students in assessing their work experiences and in integrating their classroom studies with the practical knowledge obtained.

- Policies and systems are in place for maintaining information on student participation, including employer evaluations of students and student evaluations of each work experience.
- The institution offers a form of academic credit for cooperative education work experiences, i.e. A, B, C and credit hours; substitute for required elective courses; requirement for the degree; Pass/Fail; etc.
- Student learning outcomes have been established for your program and assessment tools are being used to measure the accomplishments of those student learning outcomes.

CRITERION TWO: The institution has a clear and publicly-stated, formalized plan for the alternation, full-time or half-time, of campus-based classroom study with multiple periods of work experiences appropriate to a program of cooperative education.

- Time spent in the work portion of the curriculum should encompass a significant portion of the overall degree program (minimum guideline - 20% of the total time) to be an effective augmentation to the curriculum. (No cooperative education program consists of 100% Summer employment. This is a Summer Employment Program.) Recognized plans include Full-Time Alternating, Parallel, and Combination Alternating / Parallel
- Participating students fulfill a minimum time specified for the work portion of the curriculum for each formalized alternating plans

CRITERION THREE: The Program demonstrates faculty involvement in the cooperative education program.

- Faculty have endorsed the program's fundamental policies, including the methods for awarding credit for periods of cooperative education work experience.
- The opinions and views of faculty about the cooperative education program are discussed and brought forward to the co-op unit.
- The cooperative education program's operating unit maintains a productive relationship with faculty in the involved academic departments.

CRITERION FOUR: The program demonstrates efforts to achieve understandings with employers as to the goals for cooperative education and to encourage agreements on policies and expectations for the cooperative relationship.

- Policies and practices of the program are communicated to employers to help ensure that the employer, students and institution, equally, meet individual objectives from participation in the cooperative education program.
- Institutional written statements include understandings for employer program participation that demonstrate a commitment of cooperation between the employer and the institution to ensure student learning and an agreement on the process for evaluating the student's work experience.
- The program makes efforts to encourage participating employers to maintain an on-going cooperative education employment relationship that lasts beyond a single student's participation and/or beyond the completion of a project.

CRITERION FIVE: The program has been effectively defined in the institution's literature and its mission, goals and policies are appropriate to a program of cooperative education, as defined in the ACCE "Attributes of Cooperative Education Programs."

- Institutional literature includes the mission and goals for the cooperative education program.
- Institutional literature identifies the disciplines in which cooperative education is included in the curriculum.
- Institutional literature includes policies related to student eligibility for program participation that requires the applicant to be classified by the institution as at least a half-time, matriculated student and that the initial cooperative work experience will not precede the student's first academic term, or occur after the final school term.

APPENDIX F:

THE ATTRIBUTES OF COOPERATIVE EDUCATION

The Attributes of Cooperative Education Programs

The Attributes of Cooperative Education Programs provide a conceptual framework that advances cooperative education as a discipline and are the foundation on which the accreditation process is established. Programs of cooperative education can now be accredited based on their adherence to this model. It is recognized, however, that any process will evolve, and elaboration of this model will be no exception.

College and University representatives participating in the Cooperative Education Network, the discussion group which founded the Accreditation Council for Cooperative Education, have subscribed to the following Attributes of Cooperative Education Programs:

- Institutionalizing Cooperative Education
- Faculty Involvement
- Student Involvement
- Employer Involvement

Institutionalizing Cooperative Education

Literature of the educational institution must include:

- Descriptions of the mission and goals for the cooperative education program.
- Definition of cooperative education as an academic program.
- Identifying information as to the disciplines which provide for cooperative education in the curriculum.
- Location of the program coordinating office(s).

The institution must have established written criteria defining:

- Student eligibility for the cooperative education program, with policies for student participation.
- Employer participation in the cooperative education program, with policies defining the cooperative relationship.

Admission of students to the cooperative education program must be the responsibility of the educational institution.

A formalized plan should exist for the alternation of campus-based classroom study with multiple periods of work experience. Time spent in the work portion of the curriculum should encompass a significant portion of the overall degree program (minimum guideline - 20% of the total time) to be an effective augmentation to the curriculum. (No

cooperative education program consists of 100% Summer employment. This is a Summer Employment Program.)

Full-Time Alternating
The institution will have in place formalized alternation of periods of full-time classroom study with periods of full-time work experience approximately equal in length to the classroom periods.

- Baccalaureate programs Curriculum includes at least one academic year of multiple terms of full-time work experience. (Normally totals at least 30 weeks, depending on the institution calendar.)
- Two-year academic programs and graduate-level programs. Curriculum includes a minimum of two work periods , one of which is not a Summer term. (Normally totals well over 15 weeks due to the "two-work-period" definition.)

Parallel
The student will be classified by the educational institution as, at least, a half-time student. The institution will have in place a formalized plan for a work experience component which will encompass approximately one-half of a regular work-week in length.

- Baccalaureate programs Curriculum includes four or more work/school combination periods scheduled over, at least, two academic years . (Normally totals at least 60 weeks, depending on the institution calendar.)
- Two-year academic programs and graduate-level programs Curriculum includes two or more work/school combination periods scheduled over, at least, one academic year . (Normally totals at least 30 weeks, depending on the institution calendar.)

Combination Alternating / Combination Parallel
Combination Alternating plans meet the defining features of full-time alternating models, in addition, they include one or more parallel components. Combination Parallel plans meet the defining features of parallel models, in addition, they include one or more periods of non-alternating full-time work.

- Baccalaureate programs Curriculum includes multiple combinations of parallel and full-time work-experience periods (including non-Summer terms) that result in the approximate equivalent of 30 full-time workweeks.
- Two-year academic programs and graduate-level programs Curriculum includes multiple combinations of parallel and full-time work-experience periods (including non-Summer terms) that result in the approximate equivalent of 15 full-time workweeks.

Faculty Involvement

In the disciplines which provide for cooperative education in the curriculum, faculty will have endorsed the fundamental policies for the program and approved the methods for awarding credit for periods of cooperative work experience.

There should be a productive relationship between the overall faculty in academic departments including cooperative education in the curriculum and the faculty and/or administrators who operate the cooperative education program.

Student Involvement

The formalized plan for the cooperative education program must include a description for students that indicates cooperative education involves alternating multiple periods of work experience with multiple periods of classroom study. The work periods are to be integrated with the curriculum, not occur previous to the initial school term or after the final school term has been completed. It will also specify that once a student is enrolled in the program, continuation in the alternation is expected over a significant portion of the remaining curriculum.

Cooperative education work experience periods are considered as a formal part of the student's curriculum. The student must be registered with the educational institution for the cooperative education work experience.

Prior to employment, participating students are provided with either an individualized or group orientation to the purposes and policies for the program and expectations for student involvement.

Efforts should be made to ensure that cooperative education work experiences are related to student academic and/or career goals. Ideally, a student's work scope and/or area(s) of responsibility should broaden and/or involve progression to increased responsibilities with advanced education.

Evidence of each period of cooperative education participation must be documented on the official institutional transcript of the student. Official documentation of participation, progress, employer evaluation of the student and student evaluation of each work experience must be maintained.

The educational institution should have in place a process to monitor student workplace experiences.

Student performance in each work period must be evaluated. In place, must be a methodology to assist the student in assessing work experiences and integrating classroom studies with the practical knowledge obtained.

Students should receive a form of academic credit for the periods of cooperative work experience. The type of academic credit awarded should be determined by the faculty in the educational institution. Possible Student Benefits and Requirements.

Employer Involvement

An attempt must be made to ensure that employers, as well as students and the academic institution, equally, meet individual objectives of the cooperative education program for it to be of maximum value to each as separate entities.

The educational institution should provide employers with written statements of the institution's goals and policies applicable to employer participation in the cooperative education program.

In place, should be a commitment of cooperation between participating employers and the academic institution to ensure student workplace learning as well as an agreed-upon process of evaluating the student's work experience.

An understanding should exist between the educational institution and participating employers as to the exchange of information required to ensure achievement of student, academic and employer goals for program participation.

There should be evidence of commitment on the part of the educational institution to encourage participating employers to maintain an on-going employment relationship within the cooperative education framework that lasts beyond a single student's participation and/or beyond a single project's completion.

A fundamental purpose of cooperative education is for students to have an opportunity to learn under real-work conditions. While on cooperative work experience periods, students are considered as actual employees of the hiring organization. These "conditions" of actual employment include:

- The student will be considered to be an employee of the hiring organization and subject to the policies and laws that relate to other employees of the organization.
- The student will receive compensation in the form of wages for work performed.
- The student will be under the supervision of the employer and perform work assigned by the employer.

APPENDIX G:

DIFFERENCES IN PERCEPTIONS OF LEARNING (EXPERIENTIAL)

Differences in Perceptions of Learning as a Result of Participating in Experiential Learning

Perception of Learning		Levene's F	Test Sig.	t	df	Sig. (2-tailed)	Mean Diff.
Practical knowledge related to major	Equal variances assumed	8.027	.005	2.314	634	.021	.1885
	Equal variances not assumed			2.476	426.558	.014	.1885
Practical knowledge related to career goals	Equal variances assumed	6.764	.010	2.139	634	.033	.1814
	Equal variances not assumed			2.248	411.472	.025	.1814
Understanding of how organizations function	Equal variances assumed	3.440	.064	.072	634	.942	.0061
	Equal variances not assumed			.075	401.052	.940	.0061
Clarity of career goals	Equal variances assumed	3.819	.051	.087	633	.931	.0086
	Equal variances not assumed			.091	404.994	.928	.0086
Ability to view career expectations realistically	Equal variances assumed	11.428	.001	.347	632	.728	.0325
	Equal variances not assumed			.379	452.672	.705	.0325
Professional network of contacts	Equal variances assumed	8.726	.003	-4.165	627	.000	-.3767
	Equal variances not assumed			-4.322	384.783	.000	-.3767
Opportunities to learn from professionals	Equal variances assumed	.019	.891	.159	630	.874	.0140
	Equal variances not assumed			.162	378.901	.871	.0140
Ability to apply core knowledge	Equal variances assumed	.740	.390	-1.055	629	.292	-.0861
	Equal variances not assumed			-1.096	395.220	.274	-.0861
Motivation to learn in the classroom	Equal variances assumed	4.812	.029	3.602	633	.000	.3775
	Equal variances not assumed			3.829	420.270	.000	.3775
Motivation to continue and persist to graduation	Equal variances assumed	4.407	.036	1.938	633	.053	.2134
	Equal variances not assumed			1.991	386.440	.047	.2134

Ability to take initiative	Equal variances assumed	1.151	.284	.883	635	.377	.0827
	Equal variances not assumed			.852	339.897	.395	.0827
Ability to follow through	Equal variances assumed	5.754	.017	-.414	635	.679	-.0395
	Equal variances not assumed			-.395	331.545	.693	-.0395
Desire to pursue life-long learning	Equal variances assumed	1.475	.225	.530	636	.597	.0584
	Equal variances not assumed			.542	388.012	.588	.0584
Ability to set priorities	Equal variances assumed	.605	.437	-.699	633	.485	-.0624
	Equal variances not assumed			-.683	349.838	.495	-.0624
Ability to creatively identify, formulate, and solve problems	Equal variances assumed	.014	.905	-1.758	635	.079	-.1520
	Equal variances not assumed			-1.773	372.640	.077	-.1520
Ability to adapt to change	Equal variances assumed	.024	.876	.455	633	.649	.0402
	Equal variances not assumed			.456	367.207	.649	.0402
Leadership skills	Equal variances assumed	.001	.974	-1.577	636	.115	-.1455
	Equal variances not assumed			-1.593	376.443	.112	-.1455
Ability to contribute to a team effort	Equal variances assumed	.052	.820	-1.369	633	.172	-.1260
	Equal variances not assumed			-1.406	390.123	.160	-.1260
Oral presentation skills	Equal variances assumed	.284	.594	-3.740	632	.000	-.3614
	Equal variances not assumed			-3.807	378.662	.000	-.3614
Writing skills	Equal variances assumed	.774	.379	-2.299	635	.022	-.2157
	Equal variances not assumed			-2.343	385.162	.020	-.2157
Ability to work with others to accomplish a goal	Equal variances assumed	.254	.614	-1.491	635	.136	-.1371
	Equal variances not assumed			-1.501	373.627	.134	-.1371

Ability to design and conduct experiments	Equal variances assumed	5.671	.018	-1.380	627	.168	-.1260
	Equal variances not assumed			-1.444	403.810	.149	-.1260
Ability to make decisions	Equal variances assumed	3.642	.057	-2.055	634	.040	-.1873
	Equal variances not assumed			-2.143	404.345	.033	-.1873
Self-confidence	Equal variances assumed	1.347	.246	-2.063	630	.039	-.1947
	Equal variances not assumed			-2.093	372.980	.037	-.1947
Time management skills	Equal variances assumed	.553	.458	-3.138	635	.002	-.2950
	Equal variances not assumed			-3.110	357.656	.002	-.2950
Financial management skills	Equal variances assumed	.835	.361	.388	627	.698	.0373
	Equal variances not assumed			.388	365.997	.698	.0373
Interpersonal communication skills	Equal variances assumed	5.297	.022	-1.365	633	.173	-.1213
	Equal variances not assumed			-1.419	397.985	.157	-.1213
Awareness of civic responsibilities	Equal variances assumed	7.772	.005	-.846	626	.398	-.0793
	Equal variances not assumed			-.892	410.680	.373	-.0793
Maturity	Equal variances assumed	.541	.462	.357	632	.721	.0338
	Equal variances not assumed			.363	381.261	.717	.0338

Note: Not all participants responded to every item.

APPENDIX H:

DIFFERENCES IN PERCEPTIONS OF LEARNING (EXPERIENTIAL BY GENDER)

Differences in Student Perceptions of Learning in their Experiential Learning Assignments Based on Gender

Perception of Learning		Levene's F	Test Sig.	t	df	Sig. (2-tailed)	Mean Diff.
Practical knowledge related to major	Equal variances assumed	.009	.924	.191	481	.848	.0183
	Equal variances not assumed			.193	240.407	.847	.0183
Practical knowledge related to career goals	Equal variances assumed	1.050	.306	.108	480	.914	.0112
	Equal variances not assumed			.103	213.620	.918	.0112
Understanding of how organizations function	Equal variances assumed	3.223	.073	1.466	481	.143	.1335
	Equal variances not assumed			1.411	219.074	.160	.1335
Clarity of career goals	Equal variances assumed	.676	.411	.302	480	.763	.0361
	Equal variances not assumed			.310	245.609	.757	.0361
Ability to view career expectations realistically	Equal variances assumed	.195	.659	.713	480	.476	.0783
	Equal variances not assumed			.713	230.416	.477	.0783
Professional network of contacts	Equal variances assumed	.593	.441	.396	474	.692	.0433
	Equal variances not assumed			.385	211.887	.701	.0433
Opportunities to learn from professionals	Equal variances assumed	.275	.600	.891	476	.373	.0884
	Equal variances not assumed			.920	246.983	.358	.0884
Ability to apply core knowledge	Equal variances assumed	.509	.476	.820	479	.412	.0759
	Equal variances not assumed			.820	233.371	.413	.0759
Motivation to learn in the classroom	Equal variances assumed	5.602	.018	1.656	480	.098	.2212
	Equal variances not assumed			1.550	206.626	.123	.2212

Motivation to continue and persist to graduation	Equal variances assumed	.491	.484	2.258	482	.024	.3021
	Equal variances not assumed			2.234	230.460	.026	.3021
Ability to take initiative	Equal variances assumed	.314	.576	2.629	482	.009	.2907
	Equal variances not assumed			2.554	222.681	.011	.2907
Ability to follow through	Equal variances assumed	.029	.865	2.409	481	.016	.2790
	Equal variances not assumed			2.378	229.660	.018	.2790
Desire to pursue life-long learning	Equal variances assumed	1.094	.296	.551	480	.582	.0704
	Equal variances not assumed			.534	222.070	.594	.0704
Ability to set priorities	Equal variances assumed	.936	.334	1.689	480	.092	.1843
	Equal variances not assumed			1.629	217.676	.105	.1843
Ability to creatively identify, formulate, and solve problems	Equal variances assumed	3.110	.078	-.104	482	.917	-.0104
	Equal variances not assumed			-.099	215.022	.921	-.0104
Ability to adapt to change	Equal variances assumed	4.953	.027	2.138	482	.033	.2210
	Equal variances not assumed			2.036	212.596	.043	.2210
Leadership skills	Equal variances assumed	1.248	.265	.543	479	.587	.0568
	Equal variances not assumed			.530	223.215	.596	.0568
Ability to contribute to a team effort	Equal variances assumed	.454	.501	.612	483	.541	.0624
	Equal variances not assumed			.607	230.744	.545	.0624
Oral presentation skills	Equal variances assumed	2.902	.089	-.717	480	.474	-.0779
	Equal variances not assumed			-.691	220.036	.490	-.0779
Writing skills	Equal variances assumed	1.700	.193	-1.138	480	.256	-.1255
	Equal variances not assumed			-1.117	227.738	.265	-.1255

Ability to work with others to accomplish a goal	Equal variances assumed	.295	.587	-.576	482	.565	-.0597
	Equal variances not assumed			-.573	233.211	.567	-.0597
Ability to design and conduct experiments	Equal variances assumed	1.649	.200	-.991	471	.322	-.1081
	Equal variances not assumed			-.962	219.740	.337	-.1081
Ability to make decisions	Equal variances assumed	.062	.804	.789	483	.431	.0839
	Equal variances not assumed			.801	242.633	.424	.0839
Self-confidence	Equal variances assumed	.005	.944	.801	482	.423	.0890
	Equal variances not assumed			.795	231.903	.427	.0890
Time management skills	Equal variances assumed	2.441	.119	1.435	482	.152	.1610
	Equal variances not assumed			1.387	220.499	.167	.1610
Financial management skills	Equal variances assumed	.722	.396	.447	476	.655	.0511
	Equal variances not assumed			.442	232.101	.659	.0511
Interpersonal communication skills	Equal variances assumed	.001	.979	1.237	481	.217	.1283
	Equal variances not assumed			1.210	225.833	.228	.1283
Awareness of civic responsibilities	Equal variances assumed	.109	.742	.334	472	.738	.0355
	Equal variances not assumed			.332	235.261	.740	.0355
Maturity	Equal variances assumed	1.110	.293	1.907	480	.057	.2063
	Equal variances not assumed			1.878	226.307	.062	.2063

APPENDIX I:

DIFFERENCES IN PERCEPTIONS OF LEARNING (CLASSROOM BY GENDER)

Differences in Student Perceptions of Learning in their Classroom Environments Based on Gender

Perception of Learning		Levene's F	Test Sig.	t	df	Sig. (2-tailed)	Mean Diff.
Practical knowledge related to major	Equal variances assumed	.135	.713	.685	674	.493	.0557
	Equal variances not assumed			.690	344.456	.491	.0557
Practical knowledge related to career goals	Equal variances assumed	1.394	.238	1.068	674	.286	.0906
	Equal variances not assumed			1.063	335.813	.289	.0906
Understanding of how organizations function	Equal variances assumed	1.549	.214	1.275	673	.203	.1064
	Equal variances not assumed			1.270	339.781	.205	.1064
Clarity of career goals	Equal variances assumed	.869	.352	.051	673	.960	.0050
	Equal variances not assumed			.052	350.690	.959	.0050
Ability to view career expectations realistically	Equal variances assumed	.056	.813	1.455	670	.146	.1346
	Equal variances not assumed			1.484	354.888	.139	.1346
Professional network of contacts	Equal variances assumed	2.451	.118	-.406	663	.685	-.0368
	Equal variances not assumed			-.395	320.732	.693	-.0368
Opportunities to learn from professionals	Equal variances assumed	.472	.492	.343	669	.732	.0301
	Equal variances not assumed			.352	354.015	.725	.0301
Ability to apply core knowledge	Equal variances assumed	2.452	.118	2.483	668	.013	.2004
	Equal variances not assumed			2.440	326.825	.015	.2004
Motivation to learn in the classroom	Equal variances assumed	.190	.663	3.096	673	.002	.3207
	Equal variances not assumed			3.046	331.668	.003	.3207

Motivation to continue and persist to graduation	Equal variances assumed	8.516	.004	2.925	673	.004	.3170
	Equal variances not assumed			2.780	312.759	.006	.3170
Ability to take initiative	Equal variances assumed	.163	.686	1.947	675	.052	.1817
	Equal variances not assumed			1.939	338.900	.053	.1817
Ability to follow through	Equal variances assumed	.210	.647	1.749	674	.081	.1652
	Equal variances not assumed			1.734	339.037	.084	.1652
Desire to pursue life-long learning	Equal variances assumed	2.260	.133	1.368	675	.172	.1489
	Equal variances not assumed			1.296	310.641	.196	.1489
Ability to set priorities	Equal variances assumed	2.447	.118	1.390	672	.165	.1235
	Equal variances not assumed			1.340	319.127	.181	.1235
Ability to creatively identify, formulate, and solve problems	Equal variances assumed	6.012	.014	.126	674	.900	.0108
	Equal variances not assumed			.120	315.144	.904	.0108
Ability to adapt to change	Equal variances assumed	.346	.556	.246	672	.805	.0216
	Equal variances not assumed			.245	341.954	.806	.0216
Leadership skills	Equal variances assumed	1.327	.250	1.203	676	.230	.1092
	Equal variances not assumed			1.185	334.438	.237	.1092
Ability to contribute to a team effort	Equal variances assumed	1.652	.199	1.881	672	.060	.1711
	Equal variances not assumed			1.830	322.230	.068	.1711
Oral presentation skills	Equal variances assumed	.047	.828	1.623	670	.105	.1564
	Equal variances not assumed			1.588	326.245	.113	.1564
Writing skills	Equal variances assumed	2.086	.149	.450	672	.653	.0424
	Equal variances not assumed			.457	357.674	.648	.0424

Ability to work with others to accomplish a goal	Equal variances assumed	.075	.784	.432	673	.666	.0395
	Equal variances not assumed			.434	347.195	.665	.0395
Ability to design and conduct experiments	Equal variances assumed	1.928	.165	-.115	666	.908	-.0105
	Equal variances not assumed			-.113	333.132	.910	-.0105
Ability to make decisions	Equal variances assumed	.006	.938	1.265	674	.206	.1149
	Equal variances not assumed			1.262	337.765	.208	.1149
Self-confidence	Equal variances assumed	.184	.668	.809	669	.419	.0760
	Equal variances not assumed			.801	331.151	.424	.0760
Time management skills	Equal variances assumed	.256	.613	.991	674	.322	.0923
	Equal variances not assumed			.979	333.784	.328	.0923
Financial management skills	Equal variances assumed	.046	.829	-.808	664	.419	-.0769
	Equal variances not assumed			-.809	342.410	.419	-.0769
Interpersonal communication skills	Equal variances assumed	.018	.894	.275	672	.783	.0241
	Equal variances not assumed			.276	345.347	.782	.0241
Awareness of civic responsibilities	Equal variances assumed	.002	.962	1.078	664	.281	.0995
	Equal variances not assumed			1.083	350.960	.280	.0995
Maturity	Equal variances assumed	.058	.809	.845	671	.398	.0787
	Equal variances not assumed			.856	354.985	.393	.0787

APPENDIX J:

ANOVAS: EXPERIENTIAL LEARNING (NUMBER OF CO-OP TERMS)

ANOVA results by co-op term: Experiential Learning Assignments

Perception of Learning		Sum of Squares	df	Mean Square	F	Sig.
Practical knowledge related to major	Between Groups	1.200	2	.600	.683	.506
	Within Groups	386.813	440	.879		
	Total	388.014	442			
Practical knowledge related to career goals	Between Groups	1.544	2	.772	.734	.481
	Within Groups	462.042	439	1.052		
	Total	463.586	441			
Understanding of how organizations function	Between Groups	1.143	2	.571	.707	.493
	Within Groups	356.128	441	.808		
	Total	357.270	443			
Clarity of career goals	Between Groups	3.097	2	1.548	1.099	.334
	Within Groups	618.616	439	1.409		
	Total	621.713	441			
Ability to view career expectations realistically	Between Groups	.149	2	.074	.063	.939
	Within Groups	514.765	439	1.173		
	Total	514.914	441			
Professional network of contacts	Between Groups	5.742	2	2.871	2.634	.073
	Within Groups	476.238	437	1.090		
	Total	481.980	439			
Opportunities to learn from professionals	Between Groups	.540	2	.270	.290	.748
	Within Groups	406.951	437	.931		
	Total	407.491	439			

Ability to apply core knowledge	Between Groups	1.582	2	.791	.969	.380
	Within Groups	359.050	440	.816		
	Total	360.632	442			
Motivation to learn in the classroom	Between Groups	3.568	2	1.784	1.041	.354
	Within Groups	752.206	439	1.713		
	Total	755.774	441			
Motivation to continue and persist to graduation	Between Groups	4.332	2	2.166	1.229	.294
	Within Groups	777.416	441	1.763		
	Total	781.748	443			
Ability to take initiative	Between Groups	4.227	2	2.114	1.782	.169
	Within Groups	524.168	442	1.186		
	Total	528.396	444			
Ability to follow through	Between Groups	1.820	2	.910	.704	.495
	Within Groups	570.367	441	1.293		
	Total	572.187	443			
Desire to pursue life-long learning	Between Groups	2.043	2	1.022	.650	.522
	Within Groups	691.316	440	1.571		
	Total	693.359	442			
Ability to set priorities	Between Groups	1.606	2	.803	.709	.493
	Within Groups	498.453	440	1.133		
	Total	500.059	442			

Ability to creatively identify, formulate, and solve problems	Between Groups	.713	2	.356	.375	.687
	Within Groups	418.880	441	.950		
	Total	419.592	443			
Ability to adapt to change	Between Groups	2.648	2	1.324	1.294	.275
	Within Groups	451.163	441	1.023		
	Total	453.811	443			
Leadership skills	Between Groups	5.107	2	2.554	2.427	.090
	Within Groups	462.992	440	1.052		
	Total	468.099	442			
Ability to contribute to a team effort	Between Groups	2.767	2	1.383	1.363	.257
	Within Groups	448.636	442	1.015		
	Total	451.402	444			
Oral presentation skills	Between Groups	7.453	2	3.727	3.246	.040
	Within Groups	505.179	440	1.148		
	Total	512.632	442			
Writing skills	Between Groups	8.273	2	4.137	3.725	.025
	Within Groups	488.634	440	1.111		
	Total	496.907	442			
Ability to work with others to accomplish a goal	Between Groups	.639	2	.319	.308	.735
	Within Groups	457.667	442	1.035		
	Total	458.306	444			

Ability to design and conduct experiments	Between Groups	.894	2	.447	.398	.672
	Within Groups	484.231	431	1.124		
	Total	485.124	433			
Ability to make decisions	Between Groups	.819	2	.409	.373	.689
	Within Groups	485.393	442	1.098		
	Total	486.211	444			
Self-confidence	Between Groups	.882	2	.441	.373	.689
	Within Groups	520.927	441	1.181		
	Total	521.809	443			
Time management skills	Between Groups	6.313	2	3.156	2.604	.075
	Within Groups	534.462	441	1.212		
	Total	540.775	443			
Financial management skills	Between Groups	2.585	2	1.293	1.035	.356
	Within Groups	548.148	439	1.249		
	Total	550.733	441			
Interpersonal communication skills	Between Groups	.922	2	.461	.439	.645
	Within Groups	463.085	441	1.050		
	Total	464.007	443			
Awareness of civic responsibilities	Between Groups	1.562	2	.781	.722	.487
	Within Groups	468.722	433	1.082		
	Total	470.284	435			

Maturity	Between Groups	7.357	2	3.679	3.223	.041
	Within Groups	501.023	439	1.141		
	Total	508.380	441			

Maturity reported a statistically significant Levene statistic of 4.274 (2, 484) $p > .05$

Only students who had participated in experiential learning were included in this analysis.

APPENDIX K:

ANOVA RESULTS BY CO-OP TERM: CLASSROOM LEARNING EXPERIENCES

ANOVA results for groupings by co-op term: Student Perceptions of Learning in their Classroom Experiences

Student Perception of Learning		Sum of Squares	df	Mean Square	F	Sig.
Practical knowledge related to major	Between Groups	8.675	3	2.892	3.265	.021
	Within Groups	559.758	632	.886		
	Total	568.432	635			
Practical knowledge related to career goals	Between Groups	10.097	3	3.366	3.505	.015
	Within Groups	606.877	632	.960		
	Total	616.975	635			
Understanding of how organizations function	Between Groups	1.714	3	.571	.592	.620
	Within Groups	609.436	632	.964		
	Total	611.149	635			
Clarity of career goals	Between Groups	4.044	3	1.348	1.032	.378
	Within Groups	823.862	631	1.306		
	Total	827.906	634			
Ability to view career expectations realistically	Between Groups	1.110	3	.370	.314	.815
	Within Groups	742.959	630	1.179		
	Total	744.069	633			
Professional network of contacts	Between Groups	21.619	3	7.206	6.693	.000
	Within Groups	672.976	625	1.077		
	Total	694.595	628			

Opportunities to learn from professionals	Between Groups	3.859	3	1.286	1.250	.291
	Within Groups	646.063	628	1.029		
	Total	649.922	631			
Ability to apply core knowledge	Between Groups	2.000	3	.667	.751	.522
	Within Groups	556.963	627	.888		
	Total	558.964	630			
Motivation to learn in the classroom	Between Groups	22.044	3	7.348	4.993	.002
	Within Groups	928.592	631	1.472		
	Total	950.636	634			
Motivation to continue and persist to graduation	Between Groups	7.132	3	2.377	1.461	.224
	Within Groups	1026.812	631	1.627		
	Total	1033.943	634			
Ability to take initiative	Between Groups	1.995	3	.665	.562	.640
	Within Groups	749.254	633	1.184		
	Total	751.250	636			
Ability to follow through	Between Groups	.994	3	.331	.269	.847
	Within Groups	778.209	633	1.229		
	Total	779.203	636			
Desire to pursue life-long learning	Between Groups	2.887	3	.962	.585	.625
	Within Groups	1042.468	634	1.644		
	Total	1045.354	637			

Ability to set priorities	Between Groups	1.119	3	.373	.347	.791
	Within Groups	678.440	631	1.075		
	Total	679.559	634			
Ability to creatively identify, formulate, and solve problems	Between Groups	3.645	3	1.215	1.207	.307
	Within Groups	637.513	633	1.007		
	Total	641.159	636			
Ability to adapt to change	Between Groups	.815	3	.272	.259	.855
	Within Groups	661.648	631	1.049		
	Total	662.463	634			
Leadership skills	Between Groups	3.125	3	1.042	.904	.439
	Within Groups	730.455	634	1.152		
	Total	733.580	637			
Ability to contribute to a team effort	Between Groups	2.851	3	.950	.833	.476
	Within Groups	720.072	631	1.141		
	Total	722.923	634			
Oral presentation skills	Between Groups	23.908	3	7.969	6.409	.000
	Within Groups	783.398	630	1.243		
	Total	807.306	633			
Writing skills	Between Groups	13.791	3	4.597	3.897	.009
	Within Groups	746.774	633	1.180		
	Total	760.565	636			

Ability to work with others to accomplish a goal	Between Groups	4.348	3	1.449	1.269	.284
	Within Groups	722.695	633	1.142		
	Total	727.042	636			
Ability to design and conduct experiments	Between Groups	3.015	3	1.005	.905	.438
	Within Groups	694.180	625	1.111		
	Total	697.196	628			
Ability to make decisions	Between Groups	6.632	3	2.211	1.977	.116
	Within Groups	706.550	632	1.118		
	Total	713.182	635			
Self-confidence	Between Groups	5.332	3	1.777	1.493	.215
	Within Groups	747.352	628	1.190		
	Total	752.684	631			
Time management skills	Between Groups	11.755	3	3.918	3.287	.020
	Within Groups	754.659	633	1.192		
	Total	766.414	636			
Financial management skills	Between Groups	.569	3	.190	.153	.928
	Within Groups	775.590	625	1.241		
	Total	776.159	628			
Interpersonal communication skills	Between Groups	2.509	3	.836	.789	.500
	Within Groups	668.981	631	1.060		
	Total	671.490	634			

Awareness of civic responsibilities	Between Groups	1.394	3	.465	.397	.755
	Within Groups	729.696	624	1.169		
	Total	731.089	627			
Maturity	Between Groups	1.767	3	.589	.489	.690
	Within Groups	759.343	630	1.205		
	Total	761.110	633			

Note: Eight items reported a statistically significant Levene statistic:

Practical knowledge related to major reported a Levene statistic of 3.569 ($p < .05$).
Ability to view career expectations realistically reported a Levene statistic of 3.785 ($p < .05$).
Professional network of contacts reported a Levene statistic of 2.891 ($p < .05$).
Motivation to continue and persist to graduation reported a Levene statistic of 2.925 ($p < .05$).
Ability to creatively identify, formulate, and solve problems reported a Levene statistic of 2.649 ($p < .05$).
Ability to design and conduct experiments reported a Levene statistic of 2.738 ($p < .05$).
Awareness of civic responsibilities reported a Levene statistic of 2.805 ($p < .05$).
Maturity reported a Levene statistic of 2.825 ($p < .05$).

Note: Not all participants responded to every item.

APPENDIX L:

ANOVAS FOR EXPERIENTIAL LEARNING BY CLASS STANDING

ANOVA results for groupings by class standing: Student Perceptions of Learning in their Experiential Learning Assignments

Student Perception of Learning		Sum of Squares	df	Mean Square	F	Sig.
Practical knowledge related to major	Between Groups	2.244	3	.748	.843	.471
	Within Groups	421.668	475	.888		
	Total	423.912	478			
Practical knowledge related to career goals	Between Groups	1.062	3	.354	.338	.798
	Within Groups	496.170	474	1.047		
	Total	497.232	477			
Understanding of how organizations function	Between Groups	.226	3	.075	.094	.963
	Within Groups	381.097	475	.802		
	Total	381.324	478			
Clarity of career goals	Between Groups	4.210	3	1.403	1.020	.384
	Within Groups	652.493	474	1.377		
	Total	656.703	477			
Ability to view career expectations realistically	Between Groups	.821	3	.274	.237	.871
	Within Groups	548.175	474	1.156		
	Total	548.996	477			
Professional network of contacts	Between Groups	4.739	3	1.580	1.427	.234
	Within Groups	519.231	469	1.107		
	Total	523.970	472			

Opportunities to learn from professionals	Between Groups	2.682	3	.894	.958	.412
	Within Groups	438.443	470	.933		
	Total	441.124	473			
Ability to apply core knowledge	Between Groups	4.405	3	1.468	1.810	.144
	Within Groups	383.725	473	.811		
	Total	388.130	476			
Motivation to learn in the classroom	Between Groups	9.202	3	3.067	1.799	.147
	Within Groups	808.257	474	1.705		
	Total	817.458	477			
Motivation to continue and persist to graduation	Between Groups	1.700	3	.567	.325	.808
	Within Groups	831.292	476	1.746		
	Total	832.992	479			
Ability to take initiative	Between Groups	5.756	3	1.919	1.611	.186
	Within Groups	566.836	476	1.191		
	Total	572.592	479			
Ability to follow through	Between Groups	2.669	3	.890	.681	.564
	Within Groups	620.642	475	1.307		
	Total	623.311	478			
Desire to pursue life-long learning	Between Groups	3.890	3	1.297	.822	.482
	Within Groups	747.307	474	1.577		
	Total	751.197	477			

Ability to set priorities	Between Groups	5.007	3	1.669	1.465	.223
	Within Groups	539.888	474	1.139		
	Total	544.895	477			
Ability to creatively identify, formulate, and solve problems	Between Groups	1.239	3	.413	.427	.733
	Within Groups	459.842	476	.966		
	Total	461.081	479			
Ability to adapt to change	Between Groups	2.222	3	.741	.717	.542
	Within Groups	491.703	476	1.033		
	Total	493.925	479			
Leadership skills	Between Groups	5.451	3	1.817	1.742	.157
	Within Groups	493.266	473	1.043		
	Total	498.717	476			
Ability to contribute to a team effort	Between Groups	1.840	3	.613	.610	.609
	Within Groups	479.915	477	1.006		
	Total	481.755	480			
Oral presentation skills	Between Groups	5.593	3	1.864	1.647	.178
	Within Groups	536.583	474	1.132		
	Total	542.176	477			
Writing skills	Between Groups	7.612	3	2.537	2.188	.089
	Within Groups	549.710	474	1.160		
	Total	557.322	477			

Ability to work with others to accomplish a goal	Between Groups	.240	3	.080	.077	.972
	Within Groups	495.591	476	1.041		
	Total	495.831	479			
Ability to design and conduct experiments	Between Groups	1.461	3	.487	.432	.730
	Within Groups	524.027	465	1.127		
	Total	525.488	468			
Ability to make decisions	Between Groups	.514	3	.171	.157	.925
	Within Groups	520.488	477	1.091		
	Total	521.002	480			
Self-confidence	Between Groups	.652	3	.217	.183	.908
	Within Groups	566.246	476	1.190		
	Total	566.898	479			
Time management skills	Between Groups	1.073	3	.358	.293	.830
	Within Groups	580.675	476	1.220		
	Total	581.748	479			
Financial management skills	Between Groups	1.284	3	.428	.340	.796
	Within Groups	592.497	471	1.258		
	Total	593.781	474			
Interpersonal communication skills	Between Groups	2.294	3	.765	.734	.532
	Within Groups	495.075	475	1.042		
	Total	497.370	478			

Awareness of civic responsibilities	Between Groups	.412	3	.137	.127	.944
	Within Groups	505.057	467	1.081		
	Total	505.469	470			
Maturity	Between Groups	.500	3	.167	.147	.932
	Within Groups	538.080	474	1.135		
	Total	538.579	477			

APPENDIX M:

CLASSROOM ENVIRONMENT ANOVAS BY CLASS STANDING

ANOVA results for groupings by class standing: Student Perceptions of Learning in their Classroom Environments

Student Perception of Learning		Sum of Squares	df	Mean Square	F	Sig.
Practical knowledge related to major	Between Groups	11.645	3	3.882	4.374	.005
	Within Groups	592.818	668	.887		
	Total	604.463	671			
Practical knowledge related to career goals	Between Groups	10.306	3	3.435	3.547	.014
	Within Groups	647.027	668	.969		
	Total	657.333	671			
Understanding of how organizations function	Between Groups	3.228	3	1.076	1.129	.336
	Within Groups	635.568	667	.953		
	Total	638.796	670			
Clarity of career goals	Between Groups	1.767	3	.589	.452	.716
	Within Groups	868.761	667	1.302		
	Total	870.528	670			
Ability to view career expectations realistically	Between Groups	3.328	3	1.109	.955	.413
	Within Groups	770.978	664	1.161		
	Total	774.305	667			
Professional network of contacts	Between Groups	4.164	3	1.388	1.265	.286
	Within Groups	721.029	657	1.097		
	Total	725.192	660			

Opportunities to learn from professionals	Between Groups	1.333	3	.444	.429	.733
	Within Groups	687.276	663	1.037		
	Total	688.609	666			
Ability to apply core knowledge	Between Groups	2.865	3	.955	1.076	.359
	Within Groups	587.797	662	.888		
	Total	590.662	665			
Motivation to learn in the classroom	Between Groups	11.744	3	3.915	2.659	.047
	Within Groups	982.003	667	1.472		
	Total	993.747	670			
Motivation to continue and persist to graduation	Between Groups	6.048	3	2.016	1.238	.295
	Within Groups	1086.590	667	1.629		
	Total	1092.638	670			
Ability to take initiative	Between Groups	4.305	3	1.435	1.200	.309
	Within Groups	799.900	669	1.196		
	Total	804.205	672			
Ability to follow through	Between Groups	.360	3	.120	.097	.962
	Within Groups	823.627	668	1.233		
	Total	823.987	671			
Desire to pursue life-long learning	Between Groups	5.745	3	1.915	1.178	.317
	Within Groups	1087.795	669	1.626		
	Total	1093.539	672			

Ability to set priorities	Between Groups	2.311	3	.770	.714	.544
	Within Groups	718.180	666	1.078		
	Total	720.491	669			
Ability to creatively identify, formulate, and solve problems	Between Groups	2.632	3	.877	.871	.456
	Within Groups	672.866	668	1.007		
	Total	675.499	671			
Ability to adapt to change	Between Groups	2.303	3	.768	.732	.533
	Within Groups	698.982	666	1.050		
	Total	701.285	669			
Leadership skills	Between Groups	4.484	3	1.495	1.322	.266
	Within Groups	757.759	670	1.131		
	Total	762.243	673			
Ability to contribute to a team effort	Between Groups	1.978	3	.659	.582	.627
	Within Groups	754.901	666	1.133		
	Total	756.879	669			
Oral presentation skills	Between Groups	10.787	3	3.596	2.862	.036
	Within Groups	834.165	664	1.256		
	Total	844.952	667			
Writing skills	Between Groups	2.636	3	.879	.725	.537
	Within Groups	807.030	666	1.212		
	Total	809.666	669			

Ability to work with others to accomplish a goal	Between Groups	2.994	3	.998	.873	.455
	Within Groups	762.649	667	1.143		
	Total	765.642	670			
Ability to design and conduct experiments	Between Groups	4.702	3	1.567	1.404	.240
	Within Groups	736.682	660	1.116		
	Total	741.384	663			
Ability to make decisions	Between Groups	.781	3	.260	.231	.875
	Within Groups	752.956	668	1.127		
	Total	753.737	671			
Self-confidence	Between Groups	2.716	3	.905	.759	.518
	Within Groups	791.403	663	1.194		
	Total	794.120	666			
Time management skills	Between Groups	2.037	3	.679	.573	.633
	Within Groups	791.461	668	1.185		
	Total	793.499	671			
Financial management skills	Between Groups	2.563	3	.854	.698	.554
	Within Groups	807.168	659	1.225		
	Total	809.732	662			
Interpersonal communication skills	Between Groups	.371	3	.124	.118	.950
	Within Groups	698.620	666	1.049		
	Total	698.991	669			

Awareness of civic responsibilities	Between Groups	.398	3	.133	.114	.952
	Within Groups	767.072	658	1.166		
	Total	767.470	661			
Maturity	Between Groups	1.711	3	.570	.479	.697
	Within Groups	792.193	665	1.191		
	Total	793.904	668			

LIST OF REFERENCES

Accreditation Board for Engineering and Technology. (2003). Retrieved November 02, 2005, from http://www.asee.org

Accreditation Council for Cooperative Education. (2006). Retrieved June 4, 2006, from http://www.co-opaccreditation.org/

Armsby, H. H. (1954). Cooperative education in the united states. *Bulletin No. 11 U.S. Department of Health, Education and Welfare, Office of Education (58),* 58.

Bartkus, K. R., & Stull, W. A. (1997). Some thoughts about research in cooperative education. *Journal of Cooperative Education, 32*(2), 7-16.

Bartkus, K. R., & Stull, W. A. (2004). Research in cooperative education. In R. K. Coll & C. Eames, *International Handbook for Cooperative Education: An International Perspective of the Theory, Research, and Practice of Work-Integrated Learning (pp. 67-81).* Boston: World Association for Cooperative Education.

Branton, G. R., Van Gyn, G., Cutt, J., Loken, M., Ney, T., & Ricks, F. (1990). A model for assessing the learning benefits in cooperative education. *Journal of Cooperative Education, 26*(2), 26-38.

Braunstein, L. A., & Loken, M. A. (2004). Benefits of cooperative education for employers. In R. K. Coll & C. Eames, *International Handbook for Cooperative Education: An International Perspective of the Theory, Research, and Practice of Work-Integrated Learning (pp. 237-254).* Boston: World Association for Cooperative Education.

Busyby, G. (2005). Work experience and industrial links. In D. Airey & J. Tribe, *An International Handbook of Tourism Education (pp. 93-107).* New York: Elsevier.

Canjar, L. (1987). My conversion to cooperative education. In D. C. Hunt, *50 Views of Cooperative Education* (5th ed.) (pp. 1-4). Detroit, MI: University of Detroit.

Carlson, A. (1999). Co-op planet. *Northeastern University Magazine,* May 1999. Retrieved November 2, 2005, from http://www.numag.neu.edu/9905/wase.html

Cates, C., & Jones, P. (2001). Co-op's shining moment: Learning, learning outcomes, and assessment. *Proceedings of the 2001 American Society for Engineering Education Annual Conference & Exposition,* CED 211: American Society for Engineer Education.

Cawley, R. (1999). Get to work, then get a career. *Sportsbusiness Journal*, *2*(33), December 1999.

Clark, C.J. (1994). *The effect of co-operative education on graduate employment prospects.* Paper presented at the conference on Industry and Education: The co-operative Venture. Auckland, New Zealand, 24-26 August.

Collins, S.B. (1968). *Philosophy and operation of cooperative education: A directory of participating colleges in the united states and Canada. Philadelphia:* Cooperative Education Association

Contomanolis, E. (2005). Integrating cooperative education based student learning in the college classroom: A study of engineering faculty attitudes and activities. *Journal of Cooperative Education, 39*(1), 11-23.

Cooper, C., & Sheperd, R. (1997). The relationship between tourism education and the tourism industry: Implications for tourism education. *Tourism Recreation Research, 22*(1), 34-47.

Cooper, S., Bottomley, C., & Gordon, J. (2004). Stepping out of the classroom and up the ladder of learning: An experiential learning approach to entrepreneurship education. *Industry & Higher Education,* February, 2004.

Cooperative Education Network. (1996). The attributes of cooperative education. Retrieved November 16, 2005, from http://www.co-op.uc.edu/home

Cornell University (2006). Undergraduate Program. Retrieved February 24, 2006, from http://www.hotelschool.cornell.edu/prospective/undergrad/curriculum /practical.html

Dewey, J. (1938). *Experience and Education*. New York: Macmillan.

Dressler, S. (2003). Co-op vs. Internship. E-mail to P.Rowe (23 September 2003).

Dressler, S., & Keeling, A. (2004). Student benefits of cooperative education. In R. K. Coll & C. Eames, *International Handbook for Cooperative Education: An International Perspective of the Theory, Research, and Practice of Work-Integrated Learning (*pp. 217-236*).* Boston: World Association for Cooperative Education.

Eakins, P. (1997). The theory and practice of cooperative education: A case study. In L. V. Engelbrecht (Ed.), *Proceedings of the 10th World Conference on Cooperative Education* (pp. 67-73). Cape Town, South Africa: World Association for Cooperative Education.

Eames, C., & Cates, C. (2004). Theories of learning in cooperative education. In R. K. Coll & C. Eames, *International Handbook for Cooperative Education: An International Perspective of the Theory, Research, and Practice of Work-Integrated Learning (*pp. 37-47*).* Boston: World Association for Cooperative Education.

Evans, N. (2001). The development and positioning of business related university tourism education: A UK perspective. *Journal of Teaching in Travel and Tourism, 1*(1), 17-36.

Fletcher, J.K. (1989). Student outcomes: What do we know and how do we know it? *Journal of Cooperative Education, 26*(1), 26-33.

Florida State University (2006). Undergraduate Course Requirements for Hospitality Administration (HA) Majors For 2005-2006. Retrieved February 24, 2006, from http://cob.fsu.edu/dsh/ha_ba_curriculum.cfm

Gay, L. R., & Airasian, P. W. (2000). *Educational research: Competencies for analysis and application (6th ed.).* Englewood Cliffs, NJ: Prentice Hall.

Gillin, L. M., Davie, R. S., & Beissel, K. R. (1984). Evaluating the career progress of Austrailian engineering graduates. *Journal of Cooperative Education, 20*(3), 53-70.

Gould, P. (1987). Alternating cooperative education. In D. Hunt (Ed.). 50 views of cooperative education. Detroit, MI: University of Detroit.

Groenewald, T. (2004). Towards a definition for cooperative education. In R. K. Coll & C. Eames, *International Handbook for Cooperative Education: An International Perspective of the Theory, Research, and Practice of Work-Integrated Learning (*pp. 17-25*).* Boston: World Association for Cooperative Education.

Grubb, W. (1995). The sub-baccalaureate labor market and the advantages of cooperative education. *Journal of Cooperative Education, 30*(2), 6-19.

Grubb, W. N., Dickenson, T., Giordano, L., & Kaplan, (1992). Betwixt and between: Education, skills, and employment in sub-baccalaureate labor markets. Berkeley, CA: National Center for Research in Vocational Education.

Grubb, W. N., & Villeneuve, J. C. (1995). *Co-operative Education in Cincinnati: Implications for school- to-work programs in the U.S.* Berkely, CA: National Center for Research in Vocational Education. (ERIC Document Reproduction Service No. ED388860).

Hammond, H. P. (1933). Promotion of engineering education in the past forty years. In F.L. Bishop (Ed.), *Proceedings of the Annual American Society for Engineering Conference,* 44-61.

Hartley, J.L., & Smith, B.W. (2000). Strengthening academic ties by assessment of learning outcomes. *Journal of Cooperative Education, 35*(1), 41-47.

Havighurst, R.J. (1948). *Developmental tasks and education.* Chicago: University of Chicago Press.

Heinemann, H. (1988). Cooperative education and the academy. *Journal of Cooperative Education, 24*(2-3), 109-119.

Heinemann, H. N., & DeFalco, A. (1990). Dewey's pragmatism: A philosophical foundation for cooperative education. *The Journal of Cooperative Education, 27*(1), 38-44.

Hofman, L. (2003). Your turn. *BizEd*, September/October, 50.

House, C. (1977). *Cincinnati technical college: the first decade*. Cincinnati, OH: Cincinnati Technical College.

Huck, S. W., & Cormier, W. H. (1999). *Reading statistics and research.* New York: Harper Collins.

Hurd, J., & Hendy, M. (1997). What we know about co-op employers perceptions of cooperative education: synthesis of research in the USA and in Canada. *Journal of Cooperative Education, 32*(2), 55-62.

Jarvis, P., & Wilson, A. L. (1999). *International dictionary of adult and continuing education* (2nd ed.). London: Kogan Page.

Kelsey, J. (2002, Fall). Fighting fires with interns – building a program that keeps you on track. *Public Relations Quarterly*.

King, B. (1994). Co-operative education for hospitality and tourism students: An australian case study. *Australian Journal of Hospitality Management, 1*(2), 53-70.

Kolb, D. (1984). *Experiential learning: experience as the source of learning and development.* Upper Saddle River, NJ: Prentice-Hall.

Kubiak, C., Page, N. R., & Riggio, R. E. (1995). The faculty based co-op program: A model for survival. *Journal of Studies in Technical Careers, 15*(2), 63-70.

Langford, D. R., & Cates, C. L. (1995). Developing general education skills through co-operative education. *Proceedings of the World Conference on Co-operative Education,* 129-137. Kinston, Jamaica: World Association of Cooperative Education.

Lauber, C. A., Ruh, L., Theuri, P. M., & Woodlock, P. (2004, July). Road to the future – use internships to contribute to the younger generation and get a good look at potential hires. *Journal of Accountancy*, 41-47.

Linn, P. L. (1999). Learning that lasts a lifetime. *Liberal Education, 85*, 26-34.

Marini, R. C., & Tillman, R. R. (1988). Giving graduates worldwide the business skills they need through cooperative education. *Journal of Cooperative Education. 23*(2), 50-59.

Matson, L. C., & Matson, R. (1995). Changing times in higher education: An empirical look at cooperative education and liberal arts faculty. *Journal of Cooperative Education, 30*(3), 13-22.

Mellor, A. (1991). Experiential learning through integrated project work: An example from soil science. *Journal of Geography in Higher Education*, *15*(2), 135-149.

Moody, P. (2002). College responds to growing service industry. *The Report of the South Carolina Chamber of Commerce*, *19*(2), 1-2.

Moore, L. S., & Urwin, C. A. (1991). Gatekeeping: A model for screening baccalaureate students for field education. *Journal of Social Work Education, 27*(1), 8-17.

Morgan, M. (2004). From production line to drama school: Higher education for the future of tourism. *International Journal of Contemporary Hospitality Management, 19*(2), 91-99.

Moriarty, E. (2000). Hands-on experience key for students in VCU program. *Sports Business Journal*, *3*(34), 2000.

Nasr, K.J., Pennington, J., & Andres, C. (2004). A study of students' assessment of cooperative education outcomes. *Journal of Cooperative Education,* 38(1), 13-21.

National Commission for Cooperative Education (2006). The cooperative education model. Retrieved June 5, 2006, from http://www.co-op.edu/aboutcoop.htm.

Nielson, R. P., & Porter, R. C. (1983). Employer benefits and cost effectiveness of cooperative education programs: A Review. *Journal of Cooperative Education, 20*(1), 11-24.

Palomba, C. A., & Banta, T. W. (1999). *Assesment Essentials.* San Francisco: Jossey-Bass Publishers.

Parkhouse, B. (2001). *The management of sport: its foundation and application (3rd edition)*. New York: McGraw-Hill.

Parks, D.K. (2003). An examination of cooperative education students' learning outcomes. Unpublished doctoral dissertation, Valdosta State University, Georgia.

Parks, D. K., Onwuegbuzie, A. J., & Cash, S. H. (2001). Development of a measure for predicting learning advancement through cooperative education: reliability and validity of the P.L.A.C.E. scale. *The Journal of Cooperative Education and Internships, 36*, 23-31.

Phillips, J. J. (1978). An employer evaluation of a cooperative education program. *Journal of Cooperative Education, 14*(2), 104-120.

Pierce, J.H. (1998). Developing a framework for the assessment of engineering education: The role of cooperative education. *Proceedings of the 1998 Conference for Industry and Education Collaboration,* 38-46: American Society for Engineering Education.

Pitts, B. (2001). Sport management at the millennium: A defining moment. *Journal Of Sport Management*, *15*(1).

Porter, B. B. (1981). *A review of the coordinator's role in cooperative education at Northeastern University*. Boston: Northeastern University Publishing Group.

Purcell, K., & Quinn, J. (1995). *Hospitality management education and employment trajectories.* Oxford: School of Hotel and Catering Management.

Richards, G. (1995). Introduction. In G. Richards, European tourism and leisure education: Trends and prospects (pp 3-13). Tilberg: Tilberg University Press.

Richardson-Koehler, V. (1988). Barriers to the effective supervision of student teaching: A field study. *Journal of Teacher Education*, *31*, 31-38.

Ricks, F., Van Gyn, G., Branton, G., Cut, J., Loken, M., & Ney, T. (1990). Theory and research in cooperative education: Practice implications. *Journal of Cooperative Education, 27*(1), 7-20.

Rogers, C. (1969). *Freedom to learn*. Columbus, OH: Merrill.

Rogers, C., & Freiberg H. (1994). *Freedom to learn (3rd ed.).* Columbus, OH: Merrill/MacMillan.

Ryder, J. (1987). *Cooperative education in a new era: understanding and Strengthening the links between college and the workplace*. San Francisco: Jossey-Bass.

Seaverns, C.F. (1970). *A manual for coordinators of cooperative education, (revised edition).* Boston: Northeastern University.

Secretary's Commission on Advancing Necessary Skills. (1990). *SCANS report.* Washington, D. C.: U. S. Department of Labor.

Sharma, L. A., Mannell, R. C., & Rowe, P. M. (1995). The relationship between education-related work experiences and career expectations. *Journal of Cooperative Education, 30*(3), 39-47.

Simms, M. W. (1985). Cooperative education and academia: When does the partnership come of age? *Jounral of Cooperative Education, 21*(3), 29-33.

Southall, R. M., Nagel, M. S., LeGrande, D., & Han, P. (2003). Sport management practica: a metadiscrete experiential learning model. *Sport Marketing Quarterly*, *12*(1), 27-36.

Sovilla, E. S., (1988). Cooperative education for the 90s and beyond. *Journal of Cooperative Education, 24*(2-3), 136-147.

Sovilla, E. S., & Varty, J. W. (2004). Cooperative education in the USA, Past and Present: some lessons learned. In R. K. Coll & C. Eames, *International Handbook for Cooperative Education: An International Perspective of the Theory, Research, and Practice of Work-Integrated Learning (*pp. 3-16*).* Boston: World Association for Cooperative Education.

Stirton, W.E. (1968). My meat and drink. *Journal of cooperative education, 4*(2), 24-34.

Stock, J. (2004). Internships: stepping-stones to employment. *Career World*, *33*(2), 22-23.

Stull, W. A., & deAyora, M. R. (1984). The benefits to faculty of involvement in cooperative education in institutions of higher education in the United States. *Journal of Cooperative Education, 20*(3), 18-27.

Train, B., & Elkin, J. (2001). Branching out: A model for experiential learning in professional practice. *Journal of Librarianship and Information Science, 33*(2), 68-74.

University of Central Florida (2006a) . About Co-op. Retrieved on February 24, 2006, from http://www.coop.ucf.edu/?go=aboutcoop

University of Central Florida (2006b). About Internships. Retrieved on February 24, 2006, from http://www.coop.ucf.edu/?go=aboutintern

University of Central Florida (2006c). Hospitality Management. Retrieved on February 24, 2006, from http://www.hospitality.ucf.edu

University of Houston (2006). Bachelor of Science in Hospitality Management. Retrieved on February 24, 2006, from http://www.hrm.uh.edu/?PageID=43

University of Nevada, Las Vegas (2006). Requirements for Graduation Bachelor of Science, Hotel Administration. Retrieved on February 24, 2006, from http://hotel.unlv.edu/degreeSheets/WEB_HOS.pdf

University of Northern Arizona (2006). Degree Requirements. Retrieved on February 24, 2006, from http://www.hrm.nau.edu/hrm/curriculum/hrm_blueprint.html#_Toc486236432

Van der Worm, P. T. (1988). Response to the preliminary report of the ad hoc committee on cooperative education and the curriculum. *Journal of Cooperative Education, 24*(2-3), 120-124.

Waryszak, R. Z. (2000). Before, during and after: International perspective of students' perceptions of their cooperative education placements in the tourism industry. *Journal of Cooperative Education 35*(2-3), 84-94.

Weaver, K. A. (1993). Research and employer oriented learning objectives. *Journal of Cooperative Education, 28*(3), 7-11.

Weisz, M., & Chapman, R. (2004). Benefits of cooperative education for educational institutions. In R. K. Coll & C. Eames, *International Handbook for Cooperative Education: An International Perspective of the Theory, Research, and Practice of Work-Integrated Learning (*pp. 247-258*).* Boston: World Association for Cooperative Education.

Williams, W., Sternberg, R., Rashotte, C., & Wagner, R. (1993). Assessing the value of cooperative education. *Journal of Cooperative Education, 28*(2), 32-55.

Wilson, J.W. (1970). On the nature of cooperative education. *Journal of Cooperative Education, 6*, 1-10.

Wilson, J. W. (1974). *Impact of cooperative education upon personal development and growth of values: A final report to the Braitmayer Foundation.* Boston: Northeastern University, Cooperative Education Research Center.

Wilson, J.W. (1988). Research in cooperative education. *Journal of Cooperative Education, 24*(2-3), 77-89.

Wilson, J.W., & Lyons, E.H. (1961). *Work-study college programs: Appraisal and report of the study of cooperative education.* New York: Harper and Brothers.

Wooldridge, R.L. (1969). *Cooperative Education.* Boston: Northeastern University.

World Association for Cooperative Education (2006). WACE Brochure. Retrieved on February 26, 2006, from http://www.waceinc.org/pdf/WACE%20Brochure.pdf

Zeichner, K. (1986). The practicum as occasion for learning to teach. *South Pacific Journal of Teacher Education, 13*(2), 11-27.