



SCHOOL of
GRADUATE STUDIES
EAST TENNESSEE STATE UNIVERSITY

East Tennessee State University
**Digital Commons @ East
Tennessee State University**

Electronic Theses and Dissertations


Student Works

May 1996

Assessing Students' Gains from the College Experience at East Tennessee State University

Ramona A. Williams
East Tennessee State University

Follow this and additional works at: <https://dc.etsu.edu/etd>

 Part of the [Higher Education Commons](#), and the [Higher Education Administration Commons](#)

Recommended Citation

Williams, Ramona A., "Assessing Students' Gains from the College Experience at East Tennessee State University" (1996). *Electronic Theses and Dissertations*. Paper 2994. <https://dc.etsu.edu/etd/2994>

This Dissertation - Open Access is brought to you for free and open access by the Student Works at Digital Commons @ East Tennessee State University. It has been accepted for inclusion in Electronic Theses and Dissertations by an authorized administrator of Digital Commons @ East Tennessee State University. For more information, please contact digilib@etsu.edu.

INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

UMI

A Bell & Howell Information Company
300 North Zeeb Road, Ann Arbor MI 48106-1346 USA
313/761-4700 800/521-0600

ASSESSING STUDENTS' GAINS FROM THE COLLEGE EXPERIENCE

AT

EAST TENNESSEE STATE UNIVERSITY

A Dissertation

Presented to

the Faculty of the Department of
Educational Leadership and Policy Analysis

East Tennessee State University

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Education

by

Ramona Adele Milhorn Williams

May 1996

UMI Number: 9623479

UMI Microform 9623479
Copyright 1996, by UMI Company. All rights reserved.

**This microform edition is protected against unauthorized
copying under Title 17, United States Code.**

UMI
300 North Zeeb Road
Ann Arbor, MI 48103

APPROVAL

This is to certify that the Graduate Committee of

RAMONA ADELE MILHORN WILLIAMS

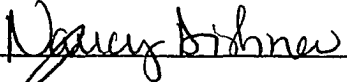
met on the

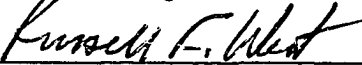
25th day of March, 1996.

The committee read and examined her dissertation, supervised her defense of it in an oral examination, and decided to recommend that her study be submitted to the Graduate Council, in partial fulfillment of the requirements for the degree of Doctor of Education.



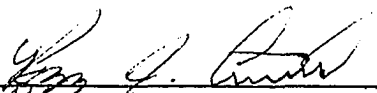
Chair, Graduate Committee







Signed on behalf of
the Graduate Council



Interim Dean,
School of Graduate Studies

ABSTRACT

ASSESSING STUDENTS' GAINS FROM THE COLLEGE EXPERIENCE

AT

EAST TENNESSEE STATE UNIVERSITY

by

Ramona Adele Milhorn Williams

The purpose of this study was to determine what activities from the ETSU experience influence students' opinions about their growth and development. This study also examined the influence of sex, age, and classification in college. Three research questions and five hypotheses were examined.

The Third Edition of the College Student Experiences Questionnaire (CSEQ) was the instrument used in this study. The CSEQ was administered to 50 undergraduate classes at East Tennessee State University during the Spring Semester 1994.

There were 19 independent variables and five dependent variables in this study. The 19 independent variables included students' scores on the 14 Quality of Effort Scales along with sex, age, and classification in college. The dependent variables were five factors extracted from the Estimate of Gains Scale. This study utilized a correlational research design with five hierarchical multiple regression models (one for each of the five factors). All hypotheses were tested using an alpha level of .05.

Results showed that the five factors extracted accounted for 60.8% of the variance in the Estimate of Gains Scale. The five factors were Factor I (Personal/Social Development), Factor II (Intellectual Skills), Factor III (Science/Technology), Factor IV (General Education, Literature, Arts, and Social Sciences), and Factor V (Vocational Preparation). For each of the five factors, the combined effects of age, sex, classification in college, and the Quality of Effort Scales explained more of the variance in the Estimate of Gains Scale than did age, sex, and classification in college alone.

INSTITUTIONAL REVIEW BOARD APPROVAL

This is to certify that the following study has been filed and approved by the Institutional Review Board of East Tennessee State University.

Title of Grant or Project Assessing Students' Gains from the College Experience at East Tennessee State University

Principal Investigator Ramona Adele Milhorn Williams

Department Educational Leadership and Policy Analysis

Date Submitted June 5, 1995

Institutional Review Board, Chairman

David W. Waller MD

DEDICATION

This dissertation is dedicated to my husband, Dr. George Alex Williams, II for his love, understanding, and encouragement, and to my parents Jack and Adel Milhorn who have always been there for me whatever it was whenever it occurred. This dissertation and many other things would not have been possible for me without their support.

ACKNOWLEDGEMENTS

There are many people who have made significant contributions to assist me with the completion of my coursework and dissertation. I would like to express my gratitude to my major professor, Dr. Marie S. Hill for her guidance throughout my program and dissertation. I am also thankful for the support and assistance of the other members of my committee: Dr. Nancy Dishner, Dr. Russ West, and Dr. Harold Whitmore.

I am eternally grateful to Dr. Susan Twaddle for her assistance with my dissertation. It would not have been possible for me to complete this without her.

I also wish to acknowledge and thank Dr. Emmett Essin, Janet Pickel, and Debbie Buckles from the Division of Developmental Studies who have assisted me in numerous ways. I want to also thank the staff and faculty members of Developmental Studies who were interested in my progress and always had kind words of wisdom for me.

Additionally I would like to thank my friends and colleagues Bonnie Burchett, Dr. Sherri Hodge-Hardin, Dr. Sally Lee, Lakie Hensley, Jo Lobertini, Trish Stafford, and Dr. Carla Warner who have been there when I needed encouragement, information, and a friend to listen.

A special thank you to Bob Baxley and Dr. Ginger Hawk who were helpful to me from the beginning of my dissertation effort. I also want to thank the Office of the Vice-President for Student Affairs who granted permission for me to use data from the College Student Experiences Questionnaire for my dissertation.

I would also like to thank my friends Beth, Chouree, Cindy, Jana, Karen, Liz, Mary Pat, and Rita who have been willing to listen to me talk about this project for the last four years. I am very lucky to have such good friends!

Several members of my family have assisted me in numerous ways and I am grateful for their concern. I would like to say thank you to my Grandmother, Gonzella Milhorn, Lisa Johnston, and Mark and La Donna Milhorn for their telephone calls, encouragement, and help with many activities throughout this process. I would also like to thank my husband's family for their understanding and support of my education.

I feel blessed to have known these people and am thankful for the many ways they have enriched my life.

CONTENTS

	Page
APPROVAL	ii
ABSTRACT	iii
INSTITUTIONAL REVIEW BOARD	iv
DEDICATION	v
ACKNOWLEDGMENTS	vi
LIST OF TABLES	xi
 Chapter	
1. INTRODUCTION	1
Statement of the Problem	5
Purpose of the Study	5
Research Questions	6
Hypotheses	6
Significance of the Problem	8
Delimitations and Limitations	9
Definition of Terms	10
Overview of the Study	12
2. REVIEW OF LITERATURE	14
Introduction	14
Theories of Student Development	16
Student Involvement	21
Student Activities	25
Library Experiences	25

	Page
Experiences with Faculty and Course Learning	25
Athletic and Artistic Experiences	26
Student Union	26
Clubs and Organizations	27
Experiences in Writing	28
Personal Experiences and Student Acquaintances	28
Science	29
Campus Residence	29
Conversations	30
Conclusion	31
 Chapter	
3. RESEARCH METHODOLOGY	32
Introduction	32
Instrumentation	33
Population and Sampling Procedures	37
Data Collection	39
Background Information about the CSEQ at ETSU	40
Variables	41
Independent Variables	42
Dependent Variables	44
Reliability and Validity	45
Research Design	46
Data Analysis	47
4. RESULTS OF DATA ANALYSIS	50

	Page
Research Question One	50
Research Question Two	56
Research Question Three	59
Null Hypothesis One	72
Null Hypothesis Two	76
Null Hypothesis Three	79
Null Hypothesis Four	83
Null Hypothesis Five	88
5. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS. . .	98
Summary	98
Conclusions	101
Research Question One	102
Research Question Two	103
Research Question Three	104
Null Hypothesis One	107
Null Hypothesis Two	109
Null Hypothesis Three	110
Null Hypothesis Four.	111
Null Hypotheses Five.	114
Summary of Conclusions	115
Recommendations for Further Study	122
REFERENCES	124
APPENDICES	134
A. COLLEGE STUDENT EXPERIENCES QUESTIONNAIRE. . .	135
B. UNDERGRADUATE CLASSES USED IN THIS STUDY . . .	143

	Page
C. QUALITY OF EFFORT SCALE	147
D. ESTIMATE OF GAINS SCALE	161
VITA	165

LIST OF TABLES

Table	Page
1. DEMOGRAPHIC INFORMATION ON CSEQ SAMPLE BY FREQUENCY AND PERCENT.	39
2. TOTAL (AND PERCENTAGES) ETSU STUDENT BODY AND CSEQ SAMPLE FOR SEX, SPRING 1994	51
3. TOTAL (AND PERCENTAGES) ETSU STUDENT BODY AND CSEQ SAMPLE FOR AGE, SPRING 1994	52
4. NUMBER (AND PERCENTAGES) ETSU STUDENT BODY AND CSEQ SAMPLE FOR CLASSIFICATION IN COLLEGE SPRING 1994	54
5. TOTAL (AND PERCENTAGES) ETSU STUDENT BODY AND CSEQ SAMPLE FOR RACIAL OR ETHNIC IDENTIFICATION, SPRING 1994.	55
6. 14 QUALITY OF EFFORT SCALES: ESTIMATES OF RELIABILITIES CSEQ NORM BASE AND THIS STUDY.	58
7. EIGENVALUE AND PERCENTAGE OF VARIANCE EXPLAINED FIVE FACTOR SOLUTION ESTIMATE OF GAINS SCALE.	61
8. FACTOR ANALYSIS WITH ROTATED FACTOR MATRIX	61
9. CHARACTERISTICS OF FACTOR I (PERSONAL/SOCIAL DEVELOPMENT)	63
10. CHARACTERISTICS OF FACTOR II (INTELLECTUAL SKILLS).	64
11. CHARACTERISTICS OF FACTOR III (SCIENCE/TECHNOLOGY)	64
12. CHARACTERISTICS OF FACTOR IV (GENERAL EDUCATION, LITERATURE, ARTS, AND SOCIAL SCIENCES)	65
13. CHARACTERISTICS OF FACTOR V (VOCATIONAL PREPARATION)	66

	Page
14. FACTOR I (GENERAL EDUCATION, LITERATURE, ARTS, AND SOCIAL SCIENCES) FOR THE CSEQ NORM BASE WAS FACTOR IV FOR THIS STUDY	67
15. FACTOR II (PERSONAL/SOCIAL DEVELOPMENT) FOR THE CSEQ NORM BASE WAS FACTOR I FOR THIS STUDY	68
16. FACTOR III (SCIENCE/TECHNOLOGY) FOR THE CSEQ NORM BASE WAS FACTOR III FOR THIS STUDY.	68
17. FACTOR IV (INTELLECTUAL SKILLS) FOR THE CSEQ NORM BASE WAS FACTOR III FOR THIS STUDY.	69
18. FACTOR V (VOCATIONAL PREPARATION) FOR THE CSEQ NORM BASE WAS FACTOR V FOR THIS STUDY.	69
19. HIERARCHICAL REGRESSION VARIANCE EXPLAINED FOR AGE, SEX, AND CLASSIFICATION ALONE COMPARED TO AGE, SEX, CLASSIFICATION, AND QUALITY OF EFFORT COMBINED FOR FACTOR I (PERSONAL/SOCIAL DEVELOPMENT).	73
20. MULTIPLE REGRESSION FOR FACTOR I (PERSONAL/SOCIAL DEVELOPMENT)	75
21. HIERARCHICAL REGRESSION VARIANCE EXPLAINED FOR AGE, SEX, AND CLASSIFICATION ALONE COMPARED TO AGE, SEX, CLASSIFICATION, AND QUALITY OF EFFORT COMBINED FOR FACTOR II (INTELLECTUAL SKILLS).	77
22. MULTIPLE REGRESSION FOR FACTOR II (INTELLECTUAL SKILLS).	78
23. HIERARCHICAL REGRESSION VARIANCE EXPLAINED FOR AGE, SEX, AND CLASSIFICATION ALONE COMPARED TO AGE, SEX, CLASSIFICATION, AND QUALITY OF EFFORT COMBINED FOR FACTOR III (SCIENCE/TECHNOLOGY)	80
24. MULTIPLE REGRESSION FOR FACTOR III (SCIENCE/TECHNOLOGY)	82
25. HIERARCHICAL REGRESSION VARIANCE EXPLAINED FOR AGE, SEX, AND CLASSIFICATION ALONE COMPARED TO AGE, SEX, CLASSIFICATION, AND QUALITY OF EFFORT COMBINED FOR FACTOR IV (GENERAL EDUCATION, LITERATURE, ARTS, AND SOCIAL SCIENCES)	84

	Page
26. MULTIPLE REGRESSION FOR FACTOR IV (GENERAL EDUCATION, LITERATURE, ARTS, AND SOCIAL SCIENCES)	86
27. ADJUSTED MEANS FOR CLASSIFICATION IN COLLEGE FOR FACTOR IV (GENERAL EDUCATION, LITERATURE, ARTS, AND SOCIAL SCIENCE).	87
28. HIERARCHICAL REGRESSION VARIANCE EXPLAINED FOR AGE, SEX, AND CLASSIFICATION ALONE COMPARED TO AGE, SEX, CLASSIFICATION, AND QUALITY OF EFFORT COMBINED FOR FACTOR V (VOCATIONAL PREPARATION)	90
29. MULTIPLE REGRESSION FOR FACTOR V (VOCATIONAL PREPARATION)	91
30. ADJUSTED MEANS FOR CLASSIFICATION IN COLLEGE FOR FACTOR V (VOCATIONAL PREPARATION).	93

CHAPTER 1
INTRODUCTION

The education of college students is more complex than class attendance, note taking, and examinations. While no single definition of college education can be found that is all encompassing, many educational researchers agree that college students need an involved and diverse educational experience that contributes to their growth and development (Astin, 1984; Kuh, Schuh, Whitt, & Associates, 1991; Pace, 1979). The description used by Pace (1974) is helpful to understand what the educational experience for college students includes:

The attainment of a broad range of personal and social benefits, of liberal viewpoints on social issues, and of subsequent involvement in the civic and artistic life of the community seems to be related to the extent to which the college experience itself provided a rich opportunity for personal and social relationships, involvement in campus activities, and in associations with the faculty (p. 129)

Another definition of education used by Pascarella & Terenzini (1991) states:

. . . increased self-understanding; expansion of personal, intellectual, cultural, and social horizons and interests; liberation from dogma, prejudice, and narrow-mindedness; development of personal moral and ethical standards; preparation for useful and productive employment and membership in a democratic society; and the general enhancement of the quality of graduates' postcollege lives (p. 162)

If these two definitions of a college education are used as a reference point, the educational process can be viewed as broad and interconnected. Personnel in higher education have an important role in the education of college students. To ensure that college students participate in the educational opportunities available to them, the college environment needs to be perceived as open, responsive, and committed to students from the classroom to the parking lot and everywhere in between (Noel, Levitz, Saluri, & Associates, 1985). Activities in the environment of a college which are representative of student involvement include factors such as: participation in class related activities, membership in campus organizations,

attendance at campus events, utilization of programs and services, establishment of friendships with other students, and interaction with faculty and staff (Pace, 1979). Feedback from students about the educational experiences available in a college are valuable to college personnel attempting to understand the education of college students (Pascarella & Terenzini, 1991).

The college environment influences the intellectual and personal experiences of students who are enrolled in institutions of higher education. If students do not perceive the campus environment as stimulating, friendly, and inviting, they may be less willing to be active participants or may view the college and many of its components in a less than positive way. If students do not perceive the campus environment in a positive manner, they may choose to leave that college or university (Pascarella & Terenzini, 1991).

If students do not perceive a college environment as one promoting growth and development, showing interest in students, the educational process for students could be hindered, involvement decreased and persistence of college students could be adversely effected (Pascarella & Terenzini, 1991). The possible

link between persistence and students' involvement with the college environment has been established (Bean, 1985; Pascarella, 1980; Spady, 1970; Tinto; 1987).

Personnel in colleges and universities have the responsibility of providing the necessary components for the education of students. Institutions of higher education hopefully provide opportunities for involvement so that students can experience events and situations that are intellectually and socially beneficial (Bowen, 1977; Clark and others, 1972; Kuh et al., 1991). According to Kuh et al. (1991) and Pace (1974) student involvement in the college environment is the shared responsibility of both personnel in institutions of higher education and the students themselves. Opinions from students about their collegiate experiences provide vital information to college and university personnel responsible for making decisions that impact the education and experiences available to students. Accurate information is necessary for appropriate decisions to be made by college and university personnel to meet students' needs as well as demonstrate the necessity for programs and services (Forrest, 1982).

To provide relevant educational opportunities for students, personnel of institutions of higher education

need to be concerned that students are ". . . having an exciting, substantive learning and personal growth experience that they can relate to their future development and success" (Noel et al., 1985, p. 2). The manner in which faculty and staff respond to students can be a critical component of their satisfaction with the college itself and relationships with faculty, staff, and other students (Noel et al., 1985).

Statement of the Problem

In light of reductions in private and public funding for institutions of higher education, and due to the close scrutiny by many groups about the costs and benefits of a college education, it is important to determine what activities influence students' opinions about their growth and development (gains) from their college educational experiences. Assessment of experiences is necessary to ensure continued support for programs and services and to adequately understand the collegiate environment (Chickering & Reisser, 1993; Pascarella & Terenzini, 1991).

Purpose of the Study

The purpose of this study was to determine what activities from the ETSU experience influence students'

opinions about their growth and development. This study also examined the variables sex, age, and classification in college (freshmen, sophomores, juniors, and seniors). The Third Edition (1990) of the College Student Experiences Questionnaire developed by Pace was the instrument used in this study.

Research Questions

1. Is there a significant difference between the sample used in this study and the ETSU student body with regard to sex, age, classification in college, and racial or ethnic identification.

2. Is there a difference between the reliabilities for the Quality of Effort Scales for this study and the CSEQ norm base and what is the reliability for the Estimate of Gains Scale for this study?

3. What are the factors in the Estimate of Gains Scale for this study and are they similar to the CSEQ norm base?

Hypotheses

Based on a review of relevant literature and research currently available on undergraduate students' gains in college, the following null hypotheses were developed and used in this study.

- H₀1. After age, sex, and classification in college are in the regression equation, the additional variance explained by the Quality of Effort Scales for Factor I (Personal/Social Development) is zero.
- H₀2. After age, sex, and classification in college are in the regression equation, the additional variance explained by the Quality of Effort Scales for Factor II (Intellectual Skills) is zero.
- H₀3. After age, sex, and classification in college are in the regression equation, the additional variance explained by the Quality of Effort Scales for Factor III (Science/Technology) is zero.
- H₀4. After age, sex, and classification in college are in the regression equation, the additional variance explained by the Quality of Effort Scales for Factor IV (General Education, Literature, Arts, and Social Sciences) is zero.
- H₀5. After age, sex, and classification in college are in the regression equation, the additional variance explained by the Quality of Effort Scales for Factor V (Vocational Preparation) is zero.

Significance of the Problem

In 1966, Wilson estimated that over 70% of what students learn during college occurs in out-of-class activities. Students involved in out-of-class activities were found to be more positive about their college experience (Kegan, 1978). The Study Group on the Conditions of Excellence in American Higher Education (1984) found that student involvement in the educational experience was possibly the most vital element necessary for improving undergraduate education. According to Boyer (1987), "The effectiveness of the undergraduate experience relates to the quality of campus life and is directly linked to the time students spend on campus and the quality of their involvement in activities" (p. 180). According to Pascarella & Terenzini (1991)

. . . the potency of colleges and universities for influencing student change and growth appears to lie in the exposure they afford their students to diversity, presenting opportunities to explore, peer and adult models to emulate, and experiences that challenge currently held values, attitudes, and beliefs. (p. 59)

These studies highlight the need for research that focuses on students' perceptions of their educational

experiences, growth and development, and involvement in college. Numerous factors contribute to students' opinions about their growth and development (gains) in college.

Results of the study will indicate which activities from the college experience influence students' growth and development (gains). If gain in a specific area is desired, the activities from the college experience that can most impact gain can be identified. The results can be used to influence changes made in the existing environment to provide the types of programs, services, activities, facilities, and events to better meet the needs of students. The results may assist in the further improvements in the environment for students at ETSU now and in the future. To maintain an environment where students grow and develop (gain), suggestions for additional improvements from faculty, staff, and students should be encouraged and implemented as appropriate.

Delimitations and Limitations

This study was limited to a sample of 50 on-campus classes of undergraduate students enrolled at ETSU during the Spring Semester of 1994. The sampling procedure used by the Office of Institutional Research was designed to increase the number of classes with a

higher percentage of Black/African American students enrolled. In addition, freshmen, sophomore, junior, and senior level classes were selected from the eight undergraduate colleges, schools, and divisions (ETSU Undergraduate Catalog 1994-1995) (see Appendix B). Responses to the questionnaire were dependent on the self-report of students who were willing to participate in the research and those who were in class on the day the questionnaire was administered. Participants of the study were from classes where faculty members agreed to allow their course to be used in this study.

Definition of Terms

East Tennessee State University (ETSU) is a state-supported coeducational university located in Northeast Tennessee. The main campus is located in Johnson City with centers in Kingsport, Elizabethton, and Bristol. Two-year, four-year, and graduate programs of study are offered through nine colleges and schools. A total of 11,715 students are enrolled for over 100 degree programs during the Spring of 1994 (ETSU Fact Book, 1994).

The environment of a higher education institution includes policies and practices that effect all aspects of a college. This included but is not limited to student orientation, faculty office hours, the

buildings on a campus, the mission statement, attitudes of administrators and faculty toward students, types of student organizations, and the variety of cultural events. The cumulative impact of these and other areas comprise the environment of a college (The Study Group on the Conditions of Excellence in American Higher Education, 1984).

The Estimate of Gains section of the CSEQ uses learning outcomes to measure students' self-report of commonly recognized goals of a college education (Decoster, 1989). The term gains is used to identify students' responses to questions that relate to intellectual and interpersonal growth and development that are found in the estimate of gains section of the CSEQ.

Nontraditional Age students are defined by the Division of Student Affairs at ETSU as students who are 23 years of age and older.

Out-of-Class Experiences are activities and events that are not part of the academic curriculum. They include interactions with faculty out of the classroom, involvement with other students on group projects, and involvement in student organizations (Kuh et al., 1991).

Student Involvement refers to the amount of time and energy students devote to their overall academic experience. This includes but is not limited to membership in student organizations, time spent in class, interactions with faculty members and other students (Astin, 1985).

Traditional Age students are defined by the Division of Student Affairs at ETSU as students who are 22 years of age and under.

Quality of Effort includes the amount, scope, and quality of time and energy college students expend to increase and improve their learning and development. As students' experiences in the college environment expand, their capacity for growth also improves (Pace, 1979).

Overview of the Study

This research is organized into five chapters. Chapter I contains the introduction, statement of the problem, purpose of the study, research questions, hypotheses, significance of the problem, delimitations and limitations, definitions, and an overview of the study. Chapter II is divided into four sections that review relevant literature and research. The following topics are discussed in the literature review: the importance of a college education, theories of student

development, student involvement, and student activities. Chapter III describes the research methods and procedures used in the study. Instrumentation, population and sampling procedures, data collection procedures, variables, reliability and validity, research design, and data analysis are outlined in the third chapter. Chapter IV provides the analysis of data and presentation of research findings. Chapter V summarizes the study with conclusions and recommendations for subsequent research.

CHAPTER 2
REVIEW OF LITERATURE

Introduction

This chapter is divided into four major sections. In the first section, the importance of a college education and involvement in educational opportunities is introduced. The second section includes a discussion of several theories of student development which support the views of education of college students that Pace used to develop the CSEQ. Third, an overview of research on student involvement is presented as it relates to gains in college. The final section is a discussion of specific student activities that influence the growth and development of college students found in the CSEQ.

Institutions of higher education were created for the purpose of educating students. Receiving a college education often determines access to occupational choices, monetary rewards and gains in interpersonal growth and development (Pascarella & Terenzini, 1991). Research has provided numerous theories which attempt to explain why some students report higher gains than other students from involvement in the educational

were enrolled. Some of the reasons are personal and others are due to factors that an institution of higher education may be able to influence and change.

Students report with varying degrees their gains from the college experience. The extent of gains that students acquire can impact their satisfaction with programs and services a school has to offer. If college students do not report gains from the collegiate experience, they could decide to leave the institution and ultimately miss the educational experience all together (Astin, 1985).

Student involvement and gains in college are interrelated. Most research that focuses on these two areas also makes reference to student satisfaction and persistence in college. College and university personnel are interested in the choices college students make concerning involvement in the educational experience. Numerous studies have focused on students' gains in college. In these studies, specific groups such as traditional-age students, adult students and/or minority students are often examined. For the purposes of this study, related literature and relevant research will include sources covering all classifications, ages, ethnic origins, gender, and types of institutions, etc.

Pace (1979, 1980, 1984) conducted research about the quality of students' efforts and gains from the educational experience. A basic premise of his research was that students' gains in college are dependent on the quality of effort students put forth as well as the types of programs and services an institution of higher education offers. Pace (1980) believed that the quality of student effort was the most important variable influencing students' educational progress. According to Pace (1979):

One does not grow without having something to grow on—some challenge, problem, or condition that stimulates new responses and perhaps new insight. There must, in other words, be some contact, some encounter, some set of events and experiences which, theoretically, reflect increasing levels of involvement, challenge, and effort. In the broadest sense we had, in the back of our minds, the concept of capitalizing on the potential for learning and development inherent in the nature of a particular facility or a particular category of experience (p. 130)

Theories of Student Development

Several theorists have examined the growth and development of students in the college environment.

The research generated by these theorists provide an integrated approach to student development.

The first group of theories to be discussed have been identified as person-environment interaction theories that include work by Banning (1978), Chickering & Reisser (1993), and Holland (1990, 1992, and 1994). These theories are based on the idea that individual students have different experiences in the same college environment. Since students are at various levels of intellectual and social development, their educational experiences will also be diverse (Chickering & Reisser, 1993).

Similar conclusions were made by Banning (1978) when he developed the concept of campus ecology. Campus ecology examines the student, the college environment, and the interaction between the two. Banning (1989) proposed that since students are at different levels of development, a college environment should incorporate various opportunities for intellectual and social development in an atmosphere that is comfortable for students.

Holland's self-directed search model (Holland, 1990, 1992, and 1994) is most often used to assist students with identifying vocational interests and preferences. While this model is primarily used for

career exploration, it is based on the assumption that environment and personality are important factors in satisfaction. This theory supports the idea that students' varying needs are influenced by whether they are satisfied or dissatisfied with their college environment. Holland views selecting a career as an indication of a person's motivation, knowledge, and personality. College personnel can use this information to enhance their understanding of college students' satisfaction with their educational experience.

Another group of models identified as typology models include: Cross' (1971, 1981) work on sociodemographic characteristics, Kolb's (1984) learning styles, and the Myers-Briggs typology (Myers, 1987). These models hypothesize about how personal characteristics impact students' experiences. Personnel in institutions of higher education can use these models to understand how students are different and thus need different experiences. These theories are useful to understand students' experiences and how those experiences influence students' quality of effort and estimate of gains in college.

Another group of theories that include the psychosocial theories of Ellis, Erickson, Freud, Jung,

and Rogers focus on how people feel, behave, and interpret their experiences. These theorists have influenced the work of many researchers who focus on human development. One modern theorist who has been influenced by this group is Chickering who has focused much of his work on student development.

Chickering (1969) developed a theory that centers around seven vectors of development. The first vector, developing competence, includes intellectual competence, physical and manual skills, and interpersonal competence. The second vector, managing emotions, includes self-control and self-expression. Vectors three, four, and five are moving through autonomy toward interdependence, developing mature interpersonal relationships, and establishing identity. The sixth vector is developing purpose. Vector seven is developing integrity. These vectors represent changes, development or gains in college students (Chickering & Reisser, 1993).

Astin's involvement theory is used to explain how students grow and develop from the college experience (1970). According to Astin, student involvement in campus activities is on a continuum. Students at the low end of the continuum primarily attend class, live off campus, give minimum effort to academic pursuits,

and are concerned with people and activities outside the higher education setting. Students on the opposite end of the continuum are actively involved in campus organizations, interact with faculty and other students, spend time on campus, and are dedicated to their academic studies (Astin, 1977). Students who were less involved in the college environment experienced less growth and development than those students who were involved.

The Association of American Colleges (1985) identified seven essential intellectual goals for undergraduate education. These abilities include: 1) inquiry, abstract thinking, and critical analysis, 2) literacy (for purposes of writing, thinking, and critical analysis), 3) quantitative information, 4) historical consciousness, 5) exposure to science, art, and international and multicultural experiences, 6) the study of value information, and 7) integration of intellectual development (Chickering & Reisser, 1993).

While person-environment interaction theories, typology models, and psychosocial theories help to understand students' satisfaction with the educational environment, they often do not assess changes in students' development. A measurement of students'

growth and development is needed to provide a more complete picture of students' educational experiences.

Student Involvement

According to Astin (1985) students learn by being involved in college experiences. This idea emphasizes the dual responsibility for student involvement. The college environment needs to provide a variety of opportunities for students to interact with other people and ideas. In turn, students must take advantage of the opportunities available for them that lead to their growth and development.

Astin (1977) and Upcraft (1985) found that students are more likely to remain in school when they believe they are part of the campus community and are involved in campus activities. Tinto (1975 and 1993), established that students who participate in the social and academic aspects of a college or university are less likely to leave. According to Tinto (1993) the degree to which students are involved in campus activities is described as institutional and personal "fit" (p.52). Students who "fit" are more likely to stay in school. A related study by Smart and Pascarella (1986) discovered that positive changes in self-concept as determined by the level of social and

academic integration were important factors in the retention of students.

Students who do not feel they are part of the institution are less likely to be involved. Institutions of higher education should be concerned that students are involved with an organization or group, or individuals on campus that can assist students in finding their niche. Noel et al. (1985) considered the fact that traditional age students have left the security of the high school setting where they are known and have a good understanding of what is happening and their expected role. First time college students of any age may have unrealistic expectations about the demands of course requirements and what it means to be a college student. The expectations of professors for college students and other related issues would need to be addressed in the classroom or at campus events designed to disseminate information. Institutional leaders need to be aware of these issues and provide programs and services to inform and involve students in the college or university setting (Noel et al., 1985).

Over the past few years, colleges and universities have experienced an increase in the number of nontraditional age students. With this increase, a

variety of changes in the student body has occurred. Changes in the student body include: students who are older, married, employed, attending school with a specific purpose, and have a family. For nontraditional age students to be active in the college environment and obtain the maximum benefits from their educational experience, college and university personnel must be willing and interested in meeting the needs of adult students (Schlossberg, Lynch, & Chickering, 1989).

Institutions of higher education need to focus recruitment efforts on students whose educational needs match the programs and services provided by the institution. "Retention begins with recruitment, with a good match between what the institution has to offer and what the student needs" (Noel et al., 1985, p. 14). If an institution does not provide the programs and services which students require, they may not gain from the college experience and might eventually leave the institution.

Noel et al., (1985) found it difficult to determine the single reason students are not involved in the college environment and choose to leave an institution of higher education. They have identified six major themes: 1) academic boredom and uncertainty

about what to study, 2) transition/adjustment problems, 3) limited and/or unrealistic expectations of college, 4) academic underpreparedness, 5) incompatibility, and 6) irrelevancy.

Academic boredom and uncertainty about what to study (undecided about major) are closely related. Students who are unsure of a college major often do not have specific vocational or educational goals. Without goals, students often do not view learning to be as relevant as students who have goals or have identified an academic major. If learning is not viewed as relevant, students can become bored and even if their grades are satisfactory, often leave an institution (Aldridge & Delucia, 1989; Noel et al. 1985).

If courses are not challenging, students can become disinterested. Students need appropriate advisement and should be placed in courses that are at a suitable level of intellectual challenge. If a course is too challenging, and students are underprepared, they can become frustrated and learning is difficult. If students are not in appropriate courses for their intellectual level, they may decide to leave. Courses should be taught by faculty members who are intellectually stimulating instructors and interested in students. In addition, faculty members

should inform students about the relevancy of courses so that they understand the need for the course now and in the future (Robinson, 1975).

Student Activities

This section includes research on areas which represent a variety of activities, events, and situations that students may encounter in the collegiate experience. Participation in these activities can influence student involvement in and satisfaction with other areas.

Library Experiences

One campus resource that is an important part of the educational experience for college students is the use of the college library. A student oriented staff can positively influence students' use of library services. If students feel comfortable asking questions and using the technology available, library use will increase. If students use the library academic improvements should follow (Kuh et al., 1991).

Experiences with Faculty and Course Learning

Relationships that students have with faculty members are second in importance only to relationships that students have with their peers. An enthusiastic faculty member who listens to students can encourage

students to become active learners (Chickering & Reisser; 1993). These views are consistent with those of Terenzini, Theophilides, and Lorang (1984) and Terenzini and Wright (1987) who found that students who established an informal and significant relationship with at least one faculty member were more likely to have positive gains in academic skills.

Students learn by being active participants in the classroom. Simply sitting in class, taking notes and taking tests is not the most productive method for educating students. According to Chickering & Reisser (1993) for students to learn "they must talk about what they are learning, write about it, relate it to past experiences, apply it to their daily lives" (p. 375). Involving students in their learning is the most productive method to use in educating college students.

Athletic and Artistic Experiences

College students often spend time developing athletic and/or artistic skills. Involvement in these activities can increase students' awareness of emotions and the ability to manage them as part of the developmental process. Learning to manage emotions in these areas can be influential in other areas. Involvement in athletics can improve a students' overall sense of competence. Artistic skills increase

students' intellectual competence and identity development (Chickering & Reisser, 1993).

Student Union

Involvement in the student union can also enhance the growth and development of college students (Levitan & Osteen, 1992). The student union can provide programs, activities, and events that provide students with experiences that benefit their ". . . intellectual, personal, social, leadership, cultural, and civic development" (Milani, 1992).

Clubs and Organizations

Involvement in extracurricular activities has a positive impact on education attainment (Pascarella & Terenzini, 1991). Opportunities to interact with other people are available through involvement in clubs and organizations. Working together to accomplish a common goal such as publishing the campus yearbook, affords students the opportunity to work with a variety of people who have different backgrounds and experiences. Skills such as problem solving and stress management are likely to be developed. Topics that range from moral issues to wellness are often discussed in the less formal settings that clubs and organizations offer (Kuh et al., 1991).

Experiences in Writing

The merits of writing for college students have also been researched. As students write reports and/or essays, they organize, select, and connect information. Each of these tasks require students to add information to prior knowledge and make connections with new information. The instructor has a critical role to play in assisting students to learn the importance of formulating an argument and critically analyzing its strengths and weaknesses (Greene, 1993).

Personal Experiences and Student Acquaintances

The personal relationships established during college can have a long-term impact. Research by Chickering and Reisser (1993) has shown that students often learn more from their peers than they do from instructors. When students identify with a particular group of people, that group influences behaviors and beliefs students hold about a variety of topics. Students interact with their friends to discuss issues, share new interests and skills, and explore new behaviors and ideas. The ability to communicate with peers, faculty, and others on campus influences students ability to establish gratifying relationships and in turn overall satisfaction with the college experience (Hawken, Duran, & Kelly, 1991). The quality

of relationships with peers has been found to influence students' report of their gains in intellectual and personal development (Bean, 1985; Pascarella, 1985).

The opportunity for college students to be exposed to different cultures and people can improve cultural diversity and an appreciation for people from a variety of backgrounds. Exposure to different cultures and people can be accomplished in a variety of ways in the classroom and in less formal settings (Chickering & Reisser, 1993).

Science

Research on curriculums that involve mathematics, physical or natural sciences, or other technical fields has shown a positive relationship with increased academic self-confidence (Astin & Kent, 1983; Pascarella, Smart, Ethington & Nettles, 1987; Smart, 1985). Most of this research however has focused on students majoring in these areas, not on completion of activities related to science.

Campus Residence

Developmental gains appear to be enhanced for students who live on campus (Astin, 1977; Chickering, 1974; Pace, 1984). If student live on campus, the roommate relationship can influence satisfaction with

residence life and ultimately the college in general (Carey, Hamilton, & Shanklin, 1986). Pascarella and Terenzini (1991) discovered that living on campus generally increases students' independence, intellectual gains, interpersonal relationships and provides students with more opportunities for involvement in the campus environment.

Conversations

Students discuss and exchange information in many of the activities they experience. Part of the educational experience for college students involves spending time talking to faculty members and their peers. The importance of this activity is evident in the research on faculty and student interactions by Chickering & Reisser (1993) who determined that faculty members who listen to students can encourage them to be active learners. Student involvement in clubs and organizations provides students numerous opportunities to interact with other students while working on various projects (Pascarella & Terenzini, 1991). Hawken, Duran, and Kelly (1991) found that the ability to communicate with faculty, peers and others in the college environment influences students' ability to develop relationships and overall satisfaction with the college experience.

Conclusion

A significant amount of research has focused on the growth and development of college students. Activities that are part of the educational experience for college students are well documented. Through examination of a variety of educational tasks and experiences, Pace (1984) concluded that a strong relationship existed between the quality of students' educational experience and the effort given by students. According to Pace, "activities which require the greatest effort are potentially more educative" (p. 5). For students' to have a significant experience, they must invest their time and effort. This study utilized the College Student Experiences Questionnaire (CSEQ) to determine students' involvement in activities that are an integral part of their educational experience and the impact of that involvement on their growth and development (gains) at ETSU.

CHAPTER 3
RESEARCH METHODOLOGY

Introduction

The research methodology chapter explains the procedures used in this study. Research design, population and sampling procedures, instrumentation, data collection, and data analysis are included.

Growth and development of college students is influenced by many factors in a college or university. The purpose of this study was to determine what activities influence students' opinions about their growth and development (gains) from their educational experience at East Tennessee State University (ETSU). This study also examined the variables sex, age, and classification in college (freshmen, sophomores, juniors, and seniors). The College Student Experiences Questionnaire (CSEQ) (Pace, 1990) was used to measure students' opinions about their growth and development and the extent of their involvement in college activities. Responses to the CSEQ from undergraduate students enrolled in classes during the day on the main campus of ETSU located in Johnson City, Tennessee during Spring Semester 1994 were used in this study.

Instrumentation

The Third Edition (1990) of the College Student Experiences Questionnaire (CSEQ) developed by Pace was the instrument used in this study (see Appendix A). Permission to reproduce the instrument in this document was granted by Kugh at The Center for Post-Secondary Research and Planning at Indiana University in Bloomington (Kugh, personal communication, October 20, 1995). Indiana University is the current center for distribution and processing of the CSEQ since Pace retired in 1994.

The CSEQ is a standardized self-report questionnaire that provides information about how students spend their time, types of activities, and the quality of their activities and relationships (Brown, 1985). Participants were requested to respond to questions on the CSEQ regarding demographic information, reading and writing activities, opinions about college, the college environment, and an estimate of gains in college (Pace & Swayze, 1992). The CSEQ offers national norms for four different types of institutions of higher education (doctoral universities, highly selective liberal arts colleges, general liberal arts colleges, and comprehensive colleges and universities) (Pace, 1990). Results from

the CSEQ can be beneficial to colleges and universities conducting institutional research, program appraisals, and for researchers interested in how students spend their time, the effort that students give to their educational experience, and the quality of students' relationships (DeCoster, 1989).

The 14 Quality of Effort Scales which are listed under the heading "College Activities" on the CSEQ were developed by Pace with the idea that, "All learning and development require an investment of time and effort by the student" (Pace, 1982, p. 4). Students who are willing to invest time and effort in their educational experience should have enhanced growth and development. The instructions for the CSEQ request participants to indicate the level of involvement in a variety of activities using a four point Likert-type scale which ranged from "never" to "very often" on the 14 Quality of Effort Scales. Each question on the 14 Quality of Effort Scales required students to be more involved in the activity. The more effort required for an activity, the greater the potential for growth and development (Pace, 1988) (see Appendix A).

On the Estimate of Gains Scale, students indicate their level of gain or progress from the educational experience for the current school year using a four

point Likert-type scale. The response choices were: very little, some, quite a bit, and very much. The items included on the Estimate of Gains Scale are areas commonly considered to be important aspects of the college or university educational experience (Chickering & Reisser, 1993; Pascarella & Terenzini, 1991; Astin, 1970) (see Appendix A, p. 135).

According to Pace and Swayze (1992) a factor analysis of the Estimate of Gains Scale for the CSEQ norm base resulted in the emergence of five factors. The five factors were: Factor I (General Education, Literature, Arts, and Social Sciences), Factor II (Personal/Social Development), Factor III (Science/Technology), Factor IV (Intellectual Skills) and Factor V (Vocational Preparation). The individual items and abbreviation used from the Estimate of Gains Scale for the CSEQ norm base that comprise each of the five factors are:

Factor I (General Education, Literature, Arts and Social Science

GENLED (general education)

ARTS (art, music, and drama)

LIT (literature)

PHILS (philosophies, cultures, and ways of life)

HIST (history)

WORLD (other parts of the world and other people)

Factor II (Personal/Social Development)

VALUES (own values and ethical standards)

SELF (understanding yourself)

OTHERS (understanding other people)

TEAM (ability to function as a team member)

HEALTH (good health habits)

Factor III (Science/Technology)

SCI (science and experimentation)

TECH (new scientific and technical developments)

CONSQ S/T (consequences of new applications of
science and technology)

Factor IV (Intellectual Skills)

WRITE (writing clearly and effectively)

CMPTS (computers)

ANALY (to think analytically and logically)

QUANT (quantitative thinking)

SYNTH (to put ideas together)

INQ (learn on your own)

Factor V (Vocational Preparation)

VOC (vocational training)

SPEC (specialization for future education)

CAREER (information relevant to a career)

Population and Sampling Procedures

The target population for this study was comprised of all undergraduate students enrolled in classes taught on the main campus of ETSU located in Johnson City, Tennessee during Spring Semester, 1994. At the request of the Division of Student Affairs Research Committee, the Office of Institutional Research at ETSU selected classes for this study.

The sampling procedure used by the Office of Institutional Research was designed to increase the number of classes with a higher percentage Black/African American students as well as include freshmen, sophomore, juniors, and senior level classes from the eight undergraduate schools, college, and divisions (ETSU Undergraduate Catalog, 1994-1995). Information from the Coordinator for Minority Affairs indicated that more Black/African American students were Criminal Justice and Marketing/Management majors. Based on this information, the Office of Institutional Research selected more classes from Criminal Justice and Marketing/Management major area than from other academic major areas. Four classes from Criminal Justice and Marketing/Management were selected. In addition, one class that focused on a topic that could be of interest to Black/African American students,

History 3720 (History of Africa), was included. Using these criteria, the Office of Institutional Research identified 61 classes for use in this study.

Each faculty member who was teaching one of the 61 classes was contacted by telephone by the researcher or another ETSU employee to obtain permission to administer the CSEQ. From the 61 undergraduate classes identified, the CSEQ was administered in 50 classes. The number of classes declined from 61 to 50 due to decisions made by faculty members who did not want the CSEQ administered in their classes. All undergraduate students in the selected classes were possible participants in the study provided they were in class on the day the CSEQ was administered and they completed the questionnaire. From the 50 classes, a total of 961 students completed the CSEQ (see Appendix B, p. 143).

The sample consisted of 371 males and 588 females. There were two unidentified cases in this category. Of the 961 students surveyed, 600 were traditional age (22 and younger) and 361 were nontraditional age (23 and older) with no missing cases. For classification purposes, there were 244 freshmen, 225 sophomores, 259 juniors, and 233 seniors with no missing cases (see Table 1).

TABLE 1
 DEMOGRAPHIC INFORMATION ON CSEQ SAMPLE
 BY FREQUENCY AND PERCENT

Demographic Information	Frequency	Percent	Missing Cases
Sex			2
Males	371	38.7	
Females	588	61.3	
Age			0
Traditional	600	62.4	
Nontraditional	361	37.6	
Classification			0
Freshmen	244	25.4	
Sophomores	225	23.4	
Juniors	259	27.0	
Seniors	233	24.2	

Data Collection

During the month of April, 1994, the CSEQ was administered to 50 day classes on the main campus at ETSU. The CSEQ was administered by the researcher and an employee from the Division of Student Affairs. The two people (the researcher and another ETSU employee) who administered the CSEQ were trained for instructional procedures by the Assistant Vice-President for Student Affairs at ETSU, Dr. Sally Lee,

who also directed the Division of Student Affairs Research Committee. The training included procedures for administration of the questionnaire and review of the directions printed on the front of the CSEQ which explained how to complete the questionnaire. Prior to administering the questionnaire, graduate students and undergraduate students who had completed the questionnaire in another class were dismissed.

When administration of the CSEQ was completed, the surveys were checked to ensure that they could be electronically scanned. If bubbles were not complete, they were darkened and any stray pencil marks were erased. The surveys were mailed to the Center for the Study of Evaluation, University of California at Los Angeles Graduate School of Education to be scanned, the data were coded into SPSS format and sent back to ETSU on diskette.

Background Information about the CSEQ at ETSU

The CSEQ was purchased by the Division of Student Affairs at ETSU from the Center for the Study of Evaluation at the University of California at Los Angeles. The objective of the Division of Student Affairs was to survey undergraduate students to gain insight about their experiences as a student at ETSU. The Student Affairs Research Committee was created to

accomplish this task. Upon completion of the research project by The Division of Student Affairs Research Committee, data were made available to the researcher. The data were made available to the researcher due to her significant involvement with the sampling and survey procedures for the administration of the CSEQ in Spring, 1994.

Students' opinions of their growth and development (gains) from the college experience were of particular interest to the researcher. The Division of Student Affairs Research Committee did not specifically consider this area but believed secondary data analysis focusing on this topic would be advantageous.

Secondary analysis of data is a commonly used research tool. According to Steward and Kamins (1993) the term secondary data does not ". . . imply anything about the importance of the information, only that it is being used for research beyond the specific informational need that prompted the original gathering of the data" (p. 4). Students' responses to the CSEQ provided the data needed for this study.

Variables

There were 19 independent variables and five dependent variables in this study. The 19 independent variables included students' scores on the 14 Quality

of Effort Scales along with sex, age, and three dummy coded variables that represented classification in college obtained from responses on the CSEQ. The dependent variables for this study were five factors extracted from the Estimate of Gains Scale from the CSEQ.

Independent Variables

The independent variable sex was coded 0 for males and 1 for females. It was necessary to recode the independent variable age. On the CSEQ, there were three categories for age: 22 and younger, 23-27, and 28 or older. For purposes of this study, 22 and younger (traditional age) was coded 0 and the two categories 23-27 and 28 or older were combined (nontraditional age) and coded 1. Three dummy coded variables were created to represent classification in college. A dummy coded variable called Freshmen was coded 1 for freshmen and 0 for other. A dummy coded variable called Sophomore was coded 1 for sophomores and 0 for other. A dummy coded variable called Junior was coded 1 for juniors and 0 for other.

The Quality of Effort Scales listed on the CSEQ under the heading "College Activities" provided information for the remaining 14 of the independent variables. The Quality of Effort Scales measured:

library experiences; experiences with faculty; course learning; art, music, theater; student union; athletic and recreation facilities; clubs and organizations; experience in writing; personal experiences; student acquaintances; science; topics of conversation; campus residence; and information in conversations.

For the 14 Quality of Effort Scales, each of which represents a separate construct, students were requested to indicate how often they participated in a given type of activity during the current school year. The response choices were: "never", "occasionally", "often", and "very often". A numerical value was given to each response choice. A response of "never" was given 1 point, "occasionally" was given 2 points, "often" was given 3 points, and "very often" was given 4 points. By summing the response choice for each item, a total score for each student was obtained for each scale.

All but two of the 14 Quality of Effort Scales listed 10 statements of college activities that are used to determine quality of effort for students. According to Pace (1982), each scale focuses on a "single hierarchical dimension that ranges from low to high quality of effort with respect to the topic" (p. 6). The directions for the Quality of Effort Scales

requests students to indicate "In your experience at this college during the current school year, about how often have you done each of the following? Indicate your response by filling in one of the spaces to the left of each statement" (Pace, 1990, p. 3). The items for the 14 Quality of Effort Scales which range from library experiences to information in conversations are included in Appendix C (p. 147).

Dependent Variables

The Estimate of Gains Scale was used to measure students' gains from the college experience. The response choices for the Estimate of Gains scale were: "very little", "some", "quite a bit", and "very much". A numerical value was given to each response choice. A response of "very little" was given 1 point, "some" was given 2 points, "quite a bit" was given 3 points, and "very much" was given 4 points. A total score for each student was obtained by summing the response choices indicated.

The Estimate of Gains Scale of the CSEQ consists of students' estimates of their progress toward 23 educational goals. Students' self-report of their gains reflect students' beliefs about their achievement of important objectives of higher education (Pace, 1982). The directions for the Estimate of Gains Scale

ask students, "In thinking over your experiences in college up to now, to what extent do you feel you have gained or made progress in each of the following respects? Indicate your response by filling in one of the spaces to the left of each statement " (Pace, 1990). The items for the Estimate of Gains Scale are shown in Appendix D (p. 161).

Reliability and Validity

The CSEQ has been widely used since it was published in 1979. Prior to the initial publication, preliminary versions of the CSEQ were pretested and the scales psychometrically analyzed. Since the CSEQ was originally published, it has been revised twice. The third and most current edition published in 1990 was used in this study (Pace, 1990).

In 1987, the first CSEQ: Test manual and norms was published. This manual included a national data base, national norms, and other psychometric information based on a sample of 25,427 students from 78 colleges and universities who completed the Second Edition of the CSEQ during 1983-1986 (Pace, 1990).

In 1990, the Third Edition of the CSEQ was published. After the Third Edition was used for two years, updated norms from 20,513 undergraduate students from 63 colleges and universities were published (Pace

& Swayze, 1992). At the end of 1991, the CSEQ had been used by more than 400 colleges and universities of various sizes, geographic locations, and educational emphasis.

Cronbach's Coefficient Alpha Reliability for the Third Edition of the CSEQ (1990) as reported in the Psychometric Supplement to the CSEQ Third Edition (1992) ranged from .83 to .96 on the 14 Quality of Effort Scales (Pace & Swayze, 1992). The Cronbach's Coefficient Alpha Reliability for the Quality of Effort Scales for this study ranged from .81 to .91. These correspond closely to those for the Third Edition of the CSEQ (1990) (see Table 3, p. 52).

The Cronbach's Alpha Reliability Coefficient for the Estimate of Gains Scale for this study was .91. The Cronbach's Alpha Reliability Coefficient was not available for the Third Edition (1990) of the CSEQ for the Estimate of Gains Scale.

Research Design

A correlational research design with five hierarchical multiple regression models (one for each of the five factors) was used in this study. Each hierarchical multiple regression model entered age, sex, and dummy coded variables for classification in college into the equation on the first step then the 14

Quality of Effort Scales were entered on the second step. This method was used to determine how much additional variance was explained by the 14 Quality of Effort Scales after sex, age, and dummy coded variables for classification in college were in the equation (Norusis, 1990).

Data Analysis

Items from the CSEQ that were used in data analysis included demographic information related to age, sex, classification in college, the 14 Quality of Effort Scales (the 17 independent variables), and the Estimate of Gains Scale (from which the five dependent variables were extracted). Students' responses to these items were analyzed using the Statistical Program for Social Sciences (SPSS) (Norusis, 1991).

Descriptive and inferential statistics were used to analyze the data. The first step in the data analysis was to perform the Chi Square procedure to address Research Question One; Is there a significant difference between the sample used in this study and the ETSU student body with regard to sex, age, classification in college, and racial or ethnic identification? The second step in data analysis was to compare Cronbach's Alpha Reliability Coefficients to address Research Question Two; Is there a difference

between the reliabilities for the Quality of Effort Scales for this study and the CSEQ norm base and what is the reliability for the Estimate of Gains Scale for this study? The third procedure used in the data analysis was the principal components analysis with varimax rotation to address Research Question Three; What are the factors in the Estimate of Gains Scale for this study and are they similar to the CSEQ norm base? The factors extracted using principal components analysis with varimax rotation from the Estimate of Gains Scale were used as the dependent variables.

The five hypotheses were tested using hierarchical multiple regression. In this study the hierarchical multiple regression was a two step process. The first step entered age, sex, and a set of three dummy coded variables for classification (demographic information) as a block of variables. The second step entered the 14 Quality of Effort Scales. The purpose of hierarchical multiple regression was to determine the R^2 change when the Quality of Effort Scales were entered into the regression equation after age, sex, and classification in college.

The Unique r^2 for each of the independent variables was also reported. The independent variable classification in college was represented by a set of

three dummy coded variables. To determine the R^2 change for this set of variables, a hierarchical multiple regression was used. All independent variables except for the variables representing class were entered on step one, then the set of dummy coded variables for class was entered second. When the R^2 change for the classification variables was statistically significant the MANOVA procedure was used to calculate the adjusted factor score means for each classification. The post hoc Modified LSD test was used to determine which pairs of adjusted class means were different (Hinkle, Wiersma, & Jurs, 1985).

CHAPTER 4
RESULTS OF DATA ANALYSIS

The purpose of this study was to determine what activities from the ETSU experience influence students' opinions about their growth and development. This study also examined the variables sex, age, and classification in college (freshmen, sophomores, juniors, and seniors). The Third Edition (1990) of the College Student Experiences Questionnaire developed by Pace was the instrument used in this study. Results of the data analysis are presented in this chapter. Three research questions and five hypotheses were addressed in this study. All hypotheses were tested using an alpha level of .05.

Research Question One

Is there a significant difference between the sample used in this study and the ETSU student body with regard to sex, age, classification in college, and racial or ethnic identification?

A Chi Square test was used to determine if the sample used in this study was significantly different from the ETSU student body regarding distributions of sex, age, classification in college, and racial/ethnic

identification for the Spring 1994 semester. The Chi Square procedure is appropriate to use when the data are in the form of frequency counts. This procedure is most often used when the categories into which frequencies fall are discrete (Gay, 1992).

No significant differences were found between the ETSU student body and the CSEQ sample when using the Chi Square procedure to compare the two groups on the variable sex. The p value for this procedure was .055. As shown in Table 2, there were 41.9% males in the ETSU student body as compared to 38.7% in the CSEQ sample. For females, there were 58.1% in the ETSU student body as compared to 61.3% in the CSEQ sample.

TABLE 2
TOTAL (AND PERCENTAGES) ETSU STUDENT BODY
AND CSEQ SAMPLE FOR SEX, SPRING 1994

SEX	TOTAL ETSU STUDENT BODY	TOTAL CSEQ SAMPLE
MALES	3648 (41.9)	371 (38.7)
FEMALES	5058 (58.1)	588 (61.3)
TOTAL	8706 (100)	959 (100)

$\chi^2 = 3.68$ with one degree of freedom ($p = .055$)

A significant difference was found between the ETSU student body and the CSEQ sample when using the Chi Square procedure to compare the two groups on the variable age. The p value for this procedure was .005. In the ETSU student body, 46.6% were traditional age (22 and younger) as compared to 62.4% in the CSEQ sample. In the ETSU student body 53.4% were nontraditional age (23 and older) as compared to 37.6% in the CSEQ sample (see Table 3). The CSEQ sample had a higher percentage of traditional age students than the ETSU student body.

TABLE 3
TOTAL (AND PERCENTAGES) ETSU STUDENT BODY
AND CSEQ SAMPLE FOR AGE, SPRING 1994

AGE	TOTAL ETSU STUDENT BODY	TOTAL CSEQ SAMPLE
TRADITIONAL AGE	4056 (46.6)	600 (62.4)
NONTRADITIONAL AGE	4650 (53.4)	361 (37.6)
TOTAL	8706 (100)	961 (100)

$\chi^2 = 87.04$ with one degree of freedom ($p = .005$)

A significant difference was found between the ETSU student body and the CSEQ sample when using the Chi Square to compare the two groups on the variable classification in college. The p value for this procedure was .001. Inspection of the data showed that the greatest difference was between the number of juniors and seniors in the ETSU student body and the CSEQ sample. In the ETSU student body 22.5% were juniors as compared to 27.0% in the CSEQ sample. In the ETSU student body 29.5% were seniors as compared to 24.2% in the CSEQ sample. There appeared to be minimal differences between the two groups in the freshmen and sophomore classifications. Table 4 contains complete data for classification in college.

A significant difference was found between the ETSU student body and the CSEQ sample when using the Chi Square procedure to compare the two groups on the variable racial or ethnic identification. The p value for this procedure was .001. Examination of the data showed the greatest difference to be between the two groups in the category identified as Black/African American. In the ETSU student body, 4.2% were Black/African American as compared to 6.7% in the CSEQ sample. The increased percentage in the CSEQ sample was due to the decision by the Division of Student

Affairs to include more classes with a higher percentage of Black/African American students in the study (see Table 5).

TABLE 4

TOTAL (AND PERCENTAGES) ETSU STUDENT BODY AND CSEQ SAMPLE FOR CLASSIFICATION IN COLLEGE, SPRING 1994

CLASSIFICATION IN COLLEGE	TOTAL ETSU STUDENT BODY	TOTAL CSEQ SAMPLE
FRESHMEN	2117 (24.6)	244 (25.4)
SOPHOMORES	2018 (23.5)	225 (23.4)
JUNIORS	1932 (22.5)	259 (27.0)
SENIORS	2488 (29.5)	233 (24.2)
TOTAL	8600 (100) *	961 (100)

$\chi^2 = 15.91$ with three degrees of freedom ($p = .001$)

* The number used to determine the percentages for classification was 8600. This number is less than the number (8706) used in the other comparisons. This is due to 106 students in the ETSU student body who were classified as undergraduate special students. This type of classification does not indicate if the student is a freshmen, sophomore, junior, or senior.

TABLE 5

TOTAL (AND PERCENTAGES) ETSU STUDENT BODY AND CSEQ
SAMPLE FOR RACIAL OR ETHNIC IDENTIFICATION, SPRING 1994

RACIAL OR ETHNIC IDENTIFICATION	TOTAL ETSU STUDENT BODY	TOTAL CSEQ SAMPLE
BLACK/AFRICAN		
AMERICAN	369 (4.2)	64 (6.7)
WHITE	7955 (91.4)	863 (89.8)
OTHER	169 (1.9)	24 (2.5)
NOT REPORTED	213 (2.4)	10 (1.0)
TOTAL	8706 (100)	961 (100)

$\chi^2 = 20.32$ with three degrees of freedom ($p = .001$)

In the ETSU student body, 91.4% were "white" as compared to 89.8% in the CSEQ sample. In the ETSU student body 1.9% were identified as "other" as compared to 2.5% in the CSEQ sample. The category "other" includes students who selected their racial or ethnic identification to be American Indian, Asian or Pacific Islander, Hispanic/Latino, or Native Alaskan. In the ETSU student body, 2.4% of the students did not report racial or ethnic identification as compared to

only 1% the CSEQ sample. Table 5 contains complete data by racial or ethnic identification.

Research Question Two

Is there a difference between the reliabilities for the Quality of Effort Scales for this study and the CSEQ norm base and what is the reliability for the Estimate of Gains Scale for this study?

Cronbach's Alpha Reliability was used to measure the internal consistency of the 14 Quality of Effort Scales and the Estimate of Gains Scale by determining how all items on a scale related to all other items in the scale and to the entire scale (Gay, 1992). Only those students who responded to all items for the scale were included in the analyses.

Results of the Cronbach's Alpha Reliability for this study were compared to the CSEQ norm base to determine congruity between the two sets of results. Comparison of the Cronbach's Alpha Reliability for the ETSU sample and the CSEQ norm base showed little difference between the two sets of results. For the CSEQ norm base the reliabilities ranged from .83 to .96. Reliabilities for the ETSU sample ranged from .81 to .96. As indicated in Table 6, comparison of the CSEQ norm base with the ETSU sample shows a high degree of similarity between the two groups. The greatest

differences in reliability were for the Course Learning Scale and Personal Experiences Scale. For these two scales, the ETSU sample was not as reliable as the CSEQ norm base (see Table 6).

Cronbach's Alpha Reliability for the Third Edition (1990) of the CSEQ for the Estimate of Gains Scale was not available. The Cronbach's Alpha Reliability for the Estimate of Gains Scale for this study was .91 (N = 901).

There were 496 students who responded to the items on the Campus Residence Scale. The number of responses to this scale were compared to the number of students who responded to a question on the demographic section of the CSEQ that asked, "Where do you now live during the school year?" Only 256 students indicated that during the school year they lived in a dormitory or other college housing or fraternity or sorority house. When responses to the Campus Residence Scale were compared to responses on the demographic question concerning "live during the school year" it was determined that 240 students responded to the Campus Residence Scale who should not have. The 240 students who should not have responded to the Campus Residence Scale but did, along with the other students who

TABLE 6

14 QUALITY OF EFFORT SCALES: ESTIMATES OF
RELIABILITIES CSEQ NORM BASE AND THIS STUDY

Scale	Cronbach's Alpha CSEQ Manual N=20,513	Cronbach's Alpha This Study and (N)
Library	.83	.81 (N=952)
Faculty	.90	.87 (N=950)
Course Learning	.96	.86 (N=945)
Art, Music, and Theater	.85	.84 (N=922)
Student Union	.89	.89 (N=940)
Athletics and Recreation	.90	.90 (N=944)
Clubs	.92	.91 (N=932)
Writing	.85	.86 (N=947)
Personal Experiences	.96	.86 (N=949)
Student Acquaintances	.96	.91 (N=953)
Science	.91	.91 (N=923)
Topics of Conversation	.86	.86 (N=932)
Campus Residence	.91	.96 (N=961)*
Information in Conversations	.83	.85 (N=945)

* The directions for Campus Residence Scale asked, "If you are now living in a dormitory or fraternity/sorority, about how often have you done each of the following in that residence unit during the current school year? Indicate your response by filling in one of the spaces to the left of each statement. If you do not live in a campus residence, omit these items.

appropriately did not respond were given a score of 10 (a score of 10 was the lowest possible score which was equivalent to a response of never for this activity). The assignment of a score of 10 to these cases dramatically increased the valid number of cases for the scale from 256 to 961.

Research Question Three

What are the factors in the Estimate of Gains Scale for this study and are these similar to the CSEQ norm base?

Factor analysis is a statistical technique used to determine if a set of variables can be reduced to a smaller number of factors (Borg & Gall, 1989). Although it was the original intent in this study to sum the responses to the Estimate of Gains Scale, factor analysis was used in this study to determine if there was more than one dimension of interrelated variables in the Estimate of Gains Scale.

To identify the factors in the Estimate of Gains scale, principal components analysis with varimax rotation was used. Factor analysis was used to determine the number and types of factors that could be derived from students' scores on the Estimate of Gains Scale. The analysis included four steps: 1) computation of a correlation matrix using principal

components analysis and inspection of the screeplot and eigenvalues of factors with scores of one or greater, 2) use of varimax to rotate factors for interpretation, 3) labeling of factors, and 4) computation of factor scores.

The factor analysis using varimax rotation extracted five factors. The five factor solution accounted for 60.8% of the variance. The eigenvalue and percentage of variance explained for the principal components analysis for the five factor solution of students' scores on the Estimate of Gains Scale are presented in Table 7.

The five factors contain the following number of items from the Estimate of Gains Scale: Factor I = five items, Factor II = five items, Factor III = three items, Factor IV = five items, and Factor V = four items. Table 8 shows the factor analysis with rotated factor matrix for the five factor solution. The left column of the table lists the item number from the statements on the Estimate of Gains Scale. Items 12, 13, 11, 10, and 14 loaded on Factor I. Items 20, 21, 18, 19, and 7 loaded on Factor II. Factor III contained items 16, 15, and 17. Factor IV included items 6, 5, 23, 9, and 22. Items 2, 1, 4, and 3 loaded on Factor V (see Table 8).

TABLE 7

EIGENVALUE AND PERCENTAGE OF VARIANCE EXPLAINED
FIVE FACTOR SOLUTION ESTIMATE OF GAINS SCALE

FACTOR NUMBER	EIGENVALUE	PERCENTAGE OF VARIANCE EXPLAINED	CUMULATIVE PERCENT OF VARIANCE
I	7.75	33.7	33.7
II	2.16	9.4	43.1
III	1.53	6.7	49.8
IV	1.39	6.0	55.8
V	1.14	5.0	60.8

TABLE 8

FACTOR ANALYSIS WITH ROTATED FACTOR MATRIX

Item number and Abbreviation	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5
12 OTHERS	.76732*	.22119	.02761	.17458	.11925
13 TEAM	.73936*	.14997	.14338	.05045	.18030
11 SELF	.73695*	.32805	-.00498	.18203	.08834
10 VALUES	.68621*	.2760	-.03568	.29276	.02075
14 HEALTH	.63952*	.00353	.26299	.07034	.19539
20 SYNTH	.32529	.70240*	.19387	.15570	.16024

Table 8 (continued)

TABLE 8 (CONTINUED).

Item number and Abbreviation	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5
21 INQ	.32381	.68794*	.11654	.14992	.14541
18 ANALY	.29045	.66213*	.34450	.07620	.20084
19 QUANT	.11371	.63161*	.44532	.03500	.14251
7 WRITE	.11148	.56226*	-.04504	.32913	.19976
8 CMPTS**	.09506	.31486	.04471	.12147	.29553
16 TECH	.05327	.14995	.87311*	.15521	.16987
15 SCI	.09261	.16324	.85711*	.11077	.16701
17 CONSQ	.12514	.16649	.82145*	.17537	.12721
6 LIT	.00017	.15270	.01419	.74339*	.17260
5 ARTS	.18750	-.07303	.18046	.65687*	.10627
23 WORLD	.16416	.14327	.18750	.63552*	.02297
9 PHILS	.35319	.23476	.02789	.61137*	.07921
22 HIST	.09382	.40217	.12578	.52947*	.01622
2 SPEC	.08395	.14737	.23472	.09238	.78582*
1 VOC	.12889	.08469	.09527	.01054	.77789*
4 CAREER	.23855	.19993	.11446	.13606	.69709*
3 GENLED	.07189	.33584	.13529	.34744	.46973*

*items that loaded on each factor

**item 8 CMPTS (computers) did not load on any of the five factors extracted in this study

Characteristics of Factor I - Personal/Social

Development

Factor I -Personal/Social Development contained five items that loaded with a value of at least .50 or greater and accounted for 33.7% of the variance in the

Estimate of Gains Scale. Table 9 presents the items from the Estimate of Gains Scale that loaded on Factor I.

TABLE 9
CHARACTERISTICS OF FACTOR I
(PERSONAL/SOCIAL DEVELOPMENT)

ITEM NUMBER	ITEM DESCRIPTION	FACTOR LOADING
12	understanding other people	.76732
13	team member	.73936
11	understanding yourself	.73695
10	developing your own values	.68621
14	good health habits	.63952

Characteristics of Factor II - Intellectual Skills

Factor II - Intellectual Skills contained five items that loaded with a value of at least .50 or greater and accounted for 9.4% of the variance in the Estimate of Gains Scale. Table 10 presents the items from the Estimate of Gains Scale that loaded on Factor II.

Characteristics of Factor III - Science/Technology

Factor III - Science/Technology contained three items that loaded with a value of at least .50 or greater and accounted for 6.7% of the variance in the

Estimate of Gains Scale. Table 11 presents the items from the Estimate of Gains Scale that loaded on Factor II.

TABLE 10
CHARACTERISTICS OF FACTOR II (INTELLECTUAL SKILLS)

ITEM NUMBER	ITEM DESCRIPTION	FACTOR LOADING
20	ability to put ideas together	.70240
21	ability to learn on your own	.68794
18	ability to think analytically	.66213
19	quantitative thinking	.63161
7	writing clearly and effectively	.56226

TABLE 11
CHARACTERISTICS OF FACTOR III (SCIENCE/TECHNOLOGY)

ITEM NUMBER	ITEM DESCRIPTION	FACTOR LOADING
16	new scientific developments	.87311
15	science and experimentation	.85711
17	consequences of science	.82145

Characteristics of Factor IV – General Education,
Literature, Arts, and Social Sciences

Factor IV – General Education, Literature, Arts, and Social Sciences contained five items that loaded with a value of at least .50 or greater and accounted for 6.0% of the variance in the Estimate of Gains Scale. Table 12 presents the items from the Estimate of Gains Scale that loaded on Factor IV.

TABLE 12

CHARACTERISTICS OF FACTOR IV (GENERAL EDUCATION,
LITERATURE, ARTS, AND SOCIAL SCIENCES)

ITEM NUMBER	ITEM DESCRIPTION	FACTOR LOADING
6	enjoyment of literature	.74339
5	enjoyment of art, music, and drama	.65687
23	knowledge of other parts of the world	.63552
9	different philosophies	.61137
22	importance of history	.52947

Characteristics of Factor V – Vocational Preparation

Factor V – Vocational Preparation contained four items that loaded with a value of at least .50 or greater and accounted for 5.0% of the variance in the

Estimate of Gains Scale. Table 13 presents the items from the Estimate of Gains Scale that loaded on Factor V.

A comparison of the factors for the CSEQ norm base and this study showed that the same five factors emerged from the factor analysis. Some minor variations were found between the items that loaded for each factor for the CSEQ norm base and this study and the order in which the factors loaded. Only one item from the Estimate of Gains Scale did not load on any factors using the .50 factor loading value as a ceiling. The one item that did not load for this study was item number eight (8) that assessed students' familiarity with the use of computers (see Tables 14 - 18).

TABLE 13
CHARACTERISTICS OF FACTOR V (VOCATIONAL PREPARATION)

ITEM NUMBER	ITEM DESCRIPTION	FACTOR LOADING
2	background for further education	.78582
1	vocational training	.77789
4	information relevant to career	.69709
3	general education about different fields	.46973

For each of the five factors extracted, factor scores were calculated using all 23 items on the Estimate of Gains Scale. SPSS was used to calculate the factor scores. Each of the five factors was then used as the dependent variable in five separate hierarchical regression models.

TABLE 14
 FACTOR I (GENERAL EDUCATION, LITERATURE, ARTS,
 AND SOCIAL SCIENCES) FOR THE CSEQ NORM BASE WAS
 FACTOR IV FOR THIS STUDY

FACTOR I CSEQ NORM BASE GENERAL EDUCATION, LITERATURE, ARTS, AND SOCIAL SCIENCES			FACTOR IV THIS STUDY GENERAL EDUCATION, LITERATURE, ARTS, AND SOCIAL SCIENCES		
ITEM NUMBER TOTAL = 6	ABBREVIATION	FACTOR LOAD	ITEM NUMBER TOTAL = 5	ABBREVIATION	FACTOR LOAD
6	LIT	.71	6	LIT	.74
9	PHILS	.68	5	ARTS	.65
5	ARTS	.67	23	WORLD	.63
23	WORLD	.67	9	PHILS	.61
22	HIST	.64	22	HIST	.52
3	GENLED	.52			

TABLE 15
 FACTOR II (PERSONAL/SOCIAL DEVELOPMENT) FOR THE
 CSEQ NORM BASE WAS FACTOR I THIS STUDY

FACTOR II CSEQ NORM BASE PERSONAL/SOCIAL DEVELOPMENT			FACTOR I THIS STUDY PERSONAL/SOCIAL DEVELOPMENT		
ITEM NUMBER	ABBREVIATION	FACTOR LOAD	ITEM NUMBER	ABBREVIATION	FACTOR LOAD
TOTAL = 5			TOTAL = 5		
12	OTHERS	.75	12	OTHERS	.76
13	TEAM	.73	13	TEAM	.73
11	SELF	.72	11	SELF	.73
10	VALUES	.63	10	VALUES	.68
14	HEALTH	.62	14	HEALTH	.63

TABLE 16
 FACTOR III (SCIENCE/TECHNOLOGY) FOR THE CSEQ NORM BASE
 WAS FACTOR III FOR THIS STUDY

FACTOR III CSEQ NORM BASE SCIENCE/TECHNOLOGY			FACTOR III THIS STUDY SCIENCE/TECHNOLOGY		
ITEM NUMBER	ABBREVIATION	FACTOR LOAD	ITEM NUMBER	ABBREVIATION	FACTOR LOAD
TOTAL = 3			TOTAL = 3		
16	TECH	.89	16	TECH	.87
15	SCI	.86	15	SCI	.85
17	CONSQ S/T	.81	17	CONSQ S/T	.82

TABLE 17
 FACTOR IV (INTELLECTUAL SKILLS) FOR THE CSEQ NORM BASE
 WAS FACTOR II FOR THIS STUDY

FACTOR IV CSEQ NORM BASE INTELLECTUAL SKILLS			FACTOR II THIS STUDY INTELLECTUAL SKILLS		
ITEM NUMBER	ABBREVIATION	FACTOR LOAD	ITEM NUMBER	ABBREVIATION	FACTOR LOAD
TOTAL = 6			TOTAL = 5		
20	SYNTH	.72	20	SYNTH	.70
18	ANALY	.70	21	INQ	.68
19	QUANT	.66	18	ANALY	.66
21	INQ	.61	19	QUANT	.63
7	WRITE	.49	7	WRITE	.56
8	CMPTS	.40			

TABLE 18
 FACTOR V (VOCATIONAL PREPARATION) FOR THE CSEQ
 NORM BASE WAS FACTOR V THIS STUDY

FACTOR V CSEQ NORM BASE VOCATIONAL PREPARATION			FACTOR V THIS STUDY VOCATIONAL PREPARATION		
ITEM NUMBER	ABBREVIATION	FACTOR LOAD	ITEM NUMBER	ABBREVIATION	FACTOR LOAD
TOTAL = 3			TOTAL = 4		
1	VOC	.79	2	SPEC	.78
4	CAREER	.76	1	VOC	.77
2	SPEC	.70	4	CAREER	.69
			3	GENLED	.46

Hierarchical multiple regression

The five null hypotheses in this study were tested using hierarchical multiple regression using each factor as a dependent variable in separate regression models. Hierarchical multiple regression was used to analyze the effects of the independent variables on the dependent variable. In this study, the hierarchical multiple regression was a two-step process. The first step entered the set of dummy coded variables for age, sex, and classification in college as a block of variables into the regression equation then the 14 Quality of Effort Scales were entered on the second step. This procedure was performed to determine the effect of age, sex, and classification in college on each of the five factors (the dependent variables). An R^2 value was calculated for this step. The second step in the process was to enter students' responses to the 14 Quality of Effort Scales (the remaining independent variables) along with age, sex, and classification in college. A second R^2 value for the combined effects of all the independent variables was calculated.

The purpose of the hierarchical multiple regression was to determine the R^2 change when the Quality of Effort Scales were entered in the model after age, sex, and classification in college. The

difference between the R^2 for the first step and the R^2 for the second step (R^2 change) represents the additional explained variance by the Quality of Effort Scales.

Each of the five models were examined for violations of the assumptions for multiple regression. A histogram of standard residuals, normal probability plot of standardized residuals and scatterplots of standardized residuals with predicted values were inspected. No violations of the assumptions for multiple regression were found. Visual inspection of the histogram showed a normal curve, the normal probability plots were linear and the scatterplots were random.

The Unique r^2 for each of the independent variables was also reported. The independent variable classification in college was represented by a set of three dummy coded variables. To determine the R^2 change for this set of variables, a hierarchical multiple regression was used. All independent variables except for the variables representing class were entered on step one, then the set of dummy coded variables for class was entered second. When the R^2 change for the classification variables was statistically significant the MANOVA procedure was used

to calculate the adjusted factor score means for each classification. The post hoc Modified LSD test was used to determine which pairs of adjusted class means were different (Hinkle, Wiersma, & Jurs, 1985).

Null Hypothesis One

H₀1: After age, sex, and classification in college are in the regression equation, the additional variance explained by the Quality of Effort Scales for Factor I (Personal/Social Development) is zero.

The R² value for age, sex, and classification in college was .069. The R² value for age, sex, classification in college combined with the Quality of Effort Scales was .254, resulting in a difference of .185. Table 19 shows the comparison of the R² for age, sex, classification in college alone, and the combined effects of age, sex, classification in college and the Quality of Effort Scales. For Factor I (Personal/Social Development) the addition of the Quality of Effort Scales to age, sex, and classification in college accounts for 18.5% more variance explained than does age, sex, and classification in college alone.

The p value of .00005 is less than the alpha level of .05. Therefore, null hypothesis one was rejected.

The additional variance explained by the Quality of Effort Scales for Factor I (Personal/Social Development) was 18.5%.

TABLE 19

HIERARCHICAL REGRESSION VARIANCE EXPLAINED FOR AGE, SEX, AND CLASSIFICATION ALONE COMPARED TO AGE, SEX, CLASSIFICATION, AND QUALITY OF EFFORT COMBINED FOR FACTOR I (PERSONAL/SOCIAL DEVELOPMENT)

R ² Age, Sex, and Classification Alone	R ² Age, Sex, Classification, and Quality of Effort Combined	Additional Variance Explained by Quality of Effort	F value for R ²	p
.069	.254	.185	13.04786	.00005

The Unique r^2 for each of the independent variables is presented in Table 20. For Factor I (Personal/Social Development) five variables were significant using an alpha level of .05. The variable AGE has a Unique r^2 of .01. Therefore, 1% of the variance in Factor I (Personal/Social Development) can be explained by the age of students. The negative sign of the partial regression coefficient for age indicated traditional age students had higher factor scores on Factor I than nontraditional age students. The

Therefore, 2% of the variance in Factor I (Personal/Social Development) can be explained by the sex of students. The positive sign of the partial regression coefficient for sex indicated that females had higher factor scores on Factor I than males. The independent variable ATHL (athletic and recreational facilities) has a Unique r^2 of .026. Therefore, 2.6% of the variance in Factor I (Personal/Social Development) can be explained by students' athletic and recreational facilities experiences. The independent variable PERS (personal experiences) has a Unique r^2 of .012. Therefore, 1.2% of the variance in Factor I (Personal/Social Development) can be explained by students' personal experiences. The independent variable STACQ (student acquaintances) has a Unique r^2 of .007. Therefore, .7% of the variance in Factor I (Personal/Social Development) can be explained by student acquaintances.

TABLE 20
 MULTIPLE REGRESSION FOR FACTOR I
 (PERSONAL/ SOCIAL DEVELOPMENT)

INDEP VAR	Regression Slope	Standard Error	Standardized Beta Weights	UNIQUE r ²	t VALUE	SIG t
AGE	-.242998	.076088	-.117734	.010	-3.194	.0015*
SEX	.335198	.075429	.164912	.020	4.444	.0000*
JUNO	-.140594	.091749	-.062818	.002	-1.532	.1259**
SOPH	-.219865	.098209	-.093110	.005	-2.239	.0255**
FRESH	-.200570	.101746	-.087026	.004	-1.971	.0491**
CONIN	.011939	.013569	.039889	.001	.880	.3792
UNION	.008692	.007307	.053311	.001	1.190	.2346
AMT	-.007213	.008435	-.032402	.001	-.855	.3927
SCI	-.010148	.005670	-.066266	.003	-1.790	.0739
LIB	-.014226	.007782	-.069176	.003	-1.828	.0679
RES	-.002216	.005600	-.016231	.000	-.396	.6924
FAC	.006953	.008099	.034467	.001	.858	.3909
WRITE	.001923	.007226	.011393	.000	.266	.7903
ATHL	.029977	.005902	.210416	.026	5.079	.0000*
PERS	.025614	.007371	.158491	.012	3.475	.0005*
CLUBS	.004001	.006848	.025721	.000	.584	.5592
COURS	.003004	.007898	.016916	.000	.380	.7038
CONTP	.006713	.008545	.036557	.001	.786	.4323
STACQ	.017517	.006759	.121852	.007	2.592	.0097*

*statistically significant at the .05 level

**The variable identified as class includes all levels of classification in college. The R² change (Unique R²) for the set of dummy coded variable for class was .005 with p = .1240.

Null Hypothesis Two

H₀2: After age, sex, and classification in college are in the regression equation, the additional variance explained by the Quality of Effort Scales for Factor II (Intellectual Skills) is zero.

The R² value for age, sex, and classification in college was .038. The R² value for age, sex, classification in college combined with the Quality of Effort Scales was .163 resulting in a difference of .125. Table 21 shows the comparison of the R² for age, sex, classification in college alone, and the combined effects of age, sex, classification in college, and the Quality of Effort Scales. For Factor II (Intellectual Skills) the addition of the Quality of Effort Scales to age, sex, and classification in college accounts for 12.5% more variance explained than does age, sex, and classification in college alone.

The p value of .00005 is less than the alpha level of .05. Therefore, null hypothesis two was rejected. The additional variance explained by the Quality of Effort Scales for Factor II (Intellectual Skills) was 12.5%.

TABLE 21
 HIERARCHICAL REGRESSION VARIANCE EXPLAINED FOR AGE,
 SEX, AND CLASSIFICATION ALONE COMPARED TO AGE, SEX,
 CLASSIFICATION, AND QUALITY OF EFFORT COMBINED FOR
 FACTOR II (INTELLECTUAL SKILLS)

R ² Age, Sex, and Classification Alone	R ² Age, Sex, Classification, and Quality of Effort Combined	Additional Variance Explained by Quality of Effort	F value for R ²	p
.038	.163	.125	7.89568	.00005

The Unique r^2 for each of the independent variables is presented in Table 22. For Factor II (Intellectual Skills) four variables were significant using an alpha level of .05. The variable SEX has a Unique r^2 of .01. Therefore, 1% of the variance in Factor II (Intellectual Skills) can be explained by the sex of students. The negative sign of the partial regression coefficient for sex indicated that males had higher factor scores on Factor II than females. The independent variable AMT (art, music, and theater) has a Unique r^2 of .008. Therefore, .8% of the variance in Factor II (Intellectual Skills) can be explained by students' art, music, and theater experiences. The independent variable LIB (library) has a Unique r^2 of

(Intellectual Skills) can be explained by students' library experiences. The independent variable COURSE (course learning) has a Unique r^2 of .021. Therefore, 2.1% of the variance in Factor II (Intellectual Skills) can be explained by course learning.

TABLE 22

MULTIPLE REGRESSION FOR FACTOR II (INTELLECTUAL SKILLS)

INDEP VAR	Regression Slope	Standard Error	Standardized Beta Weights	UNIQUE r^2	t VALUE	SIG t
AGE	.075922	.079952	.037077	.001	.950	.3426
SEX	-.238418	.079260	-.118230	.010	-3.008	.0027*
JUNO	-.126778	.096409	-.057095	.002	-1.315	.1889**
SOPH	-.153045	.103196	-.065327	.003	-1.483	.1385**
FRESH	-.050045	.106913	-.021887	.000	-.468	.6399**
CONIN	.025740	.014258	.086679	.004	1.805	.0714
UNION	.005471	.007678	.033823	.001	.713	.4763
AMT	-.022897	.008863	-.103670	.008	-2.583	.0100*
SCI	.002893	.005958	.019043	.000	.486	.6274
LIB	.017964	.008177	.088047	.005	2.197	.0283*
RES	-.010094	.005884	-.074515	.003	-1.715	.0867
FAC	.007893	.008510	.039439	.001	.927	.3540
WRITE	.012059	.007593	.072022	.003	1.588	.1127
ATHL	-.007295	.006202	-.051613	.002	-1.176	.2399

Table 22 (continued).

TABLE 22 (continued).

INDEP VAR	Regression Slope	Standard Error	Standardized Beta Weights	UNIQUE r ²	t VALUE	SIG t
PERS	-.000784	.007745	-.004418	.000	-.091	.9271
CLUBS	.003703	.007196	.023992	.000	.515	.6070
COURS	.036069	.008299	.204694	.021	4.346	.0000*
CONTP	.007423	.008979	.040744	.001	.827	.4087
STACQ	-.004735	.007102	-.033197	.001	-.667	.5052

*statistically significant at the .05 level

**The variable identified as class includes all levels of classification in college. The R² change (Unique R²) for the set of dummy coded variables for class was .003 with $p = .3854$.

Null Hypothesis Three

H₀₃: After age, sex, and classification in college are in the regression equation, the additional variance explained by the Quality of Effort Scales for Factor III (Science/Technology) is zero.

The R² value for age, sex, and classification in college was .039. The R² value for age, sex, classification in college combined with the Quality of Effort Scales was .365. resulting in a difference of .325. Table 23 shows the comparison of the R² for age, sex, classification in college alone, and the combined effects of age, sex, classification in college, and the Quality of Effort Scales. For Factor III (Science/Technology) the addition of the Quality of

Effort Scales to age, sex, and classification in college accounts for 32.5% more variance explained than does age, sex, and classification in college alone.

The p value of .00005 is less than the alpha level of .05. Therefore, null hypothesis three was rejected. The additional variance explained by the Quality of Effort Scales for Factor III (Science/Technology) was 32.5%.

TABLE 23
HIERARCHICAL REGRESSION VARIANCE EXPLAINED FOR AGE,
SEX, AND CLASSIFICATION ALONE COMPARED TO AGE, SEX,
CLASSIFICATION, AND QUALITY OF EFFORT COMBINED FOR
FACTOR III (SCIENCE/TECHNOLOGY)

R ² Age, Sex, and Classification Alone	R ² Age, Sex, Classification, and Quality of Effort Combined	Additional Variance Explained by Quality of Effort	F value for R ²	p
.039	.365	.325	26.96774	.00005

The Unique r^2 for each of the independent variables is presented in Table 24. For Factor III (Science/Technology) six variables were significant using an alpha level of .05. The variable CONIN (information in conversations) has a Unique r^2 of .004.

(Science/Technology) can be explained by information in conversations. The independent variable SCI (science) has a Unique r^2 of .256. Therefore, 25.6% of the variance in Factor III (Science/Technology) can be explained by students' science experiences. The independent variable ATHL (athletic and recreational facilities) has a Unique r^2 of .013. Therefore, 1.3% of the variance in Factor III (Science/Technology) can be explained by students' athletic and recreational facilities experiences. The independent variable PERS (personal experiences) has a Unique r^2 of .006. Therefore, .6% of the variance in Factor III (Science/Technology) can be explained by students' personal experiences. The independent variable CLUBS (clubs and organizations) has a Unique r^2 of .004. Therefore, .4% of the variance in Factor III (Science/Technology) can be explained by students' experiences with clubs and organizations. The independent variable CONTP (topics of conversation) has a Unique r^2 of .006. Therefore, .6% of the variance in Factor III (Science/Technology) can be explained by topics of conversations.

TABLE 24

MULTIPLE REGRESSION FOR FACTOR III (SCIENCE/TECHNOLOGY)

INDEP VAR	Regression Slope	Standard Error	Standardized Beta Weights	UNIQUE r ²	t VALUE	SIG t
AGE	.030221	.069808	.014724	.000	.433	.6652
SEX	-.056098	.069204	-.027753	.001	-.811	.4179
JUNIO	-.039374	.084177	-.017690	.000	-.468	.6401**
SOPH	-.064899	.090104	-.027636	.000	-.720	.4716**
FRESH	-.114160	.093349	-.049809	.001	-1.223	.2217**
CONIN	-.026028	.012449	-.087444	.004	-2.091	.0369*
UNION	-.000289	.006704	-.001780	.000	-.043	.9657
AMT	.004754	.007739	.021475	.000	.614	.5392
SCI	.089616	.005202	.588444	.256	17.226	.0000*
LIB	-.004196	.007139	-.020519	.000	-.588	.5569
RES	-.001248	.005138	-.009192	.000	-.243	.8081
FAC	-.002612	.007430	-.013020	.000	-.352	.7253
WRITE	-.001700	.006630	-.010130	.000	-.256	.7977
ATHL	.020986	.005415	.148124	.013	3.876	.0001*
PERS	-.018421	.006762	-.114620	.006	-2.724	.0066*
CLUBS	-.013219	.006283	-.085447	.004	-2.104	.0357*
COURSE	-.013419	.007247	-.075975	.003	-1.852	.0645
CONTP	.019973	.007840	.109368	.006	2.548	.0110*
STACQ	-.000043	.006201	-.000303	.000	-.007	.9944

*statistically significant at the .05 level

**The variable identified as class includes all levels of classification in college. The R² change (Unique R²) for the set of dummy coded variables for class was .001 with p = .6653.

Null Hypothesis Four

H₀4: After age, sex, and classification in college are in the regression equation, the additional variance explained by the Quality of Effort Scales for Factor IV (General Education, Literature, Arts and Social Sciences) is zero.

The R² value for age, sex, and classification in college was .025. The R² value for age, sex, classification in college combined with the Quality of Effort Scales was .259, resulting in a difference of .234. Table 25 shows the comparison of the R² for age, sex, classification in college alone, and the combined effects of age, sex, classification in college and the Quality of Effort Scales. For Factor IV (General Education, Literature, Arts, and Social Sciences) the addition of the Quality of Effort Scales to age, sex, and classification in college accounts for 23.4% more variance explained than does age, sex, and classification in college alone.

The p value of .00005 is less than the alpha level of .05. Therefore, null hypothesis four was rejected. The additional variance explained by the Quality of Effort Scales for Factor IV (General Education, Literature, Arts, and Social Sciences) was 23.4%.

TABLE 25
 HIERARCHICAL REGRESSION VARIANCE EXPLAINED FOR AGE,
 SEX, AND CLASSIFICATION ALONE COMPARED TO AGE, SEX,
 CLASSIFICATION, AND QUALITY OF EFFORT COMBINED FOR
 FACTOR IV (GENERAL EDUCATION, LITERATURE,
 ARTS, AND SOCIAL SCIENCES)

R ² Age, Sex, and Classification Alone	R ² Age, Sex, Classification, and Quality of Effort Combined	Additional Variance Explained by Quality of Effort	F value for R ²	p
.025	.259	.234	16.62772	.00005

The Unique r^2 for each of the independent variables is presented in Table 26. For Factor IV (General Education, Literature, Arts, and Social Sciences) seven variables were significant using an alpha level of .05. The variable AGE has a Unique r^2 of .005. Therefore, .5% of the variance in Factor IV (General Education, Literature, Arts, and Social Sciences) can be explained by age of the students. The positive sign of the partial regression coefficient for age indicated that nontraditional age students had higher factor scores on Factor IV than traditional age students. The independent variable AMT (art, music, and theater) has a Unique r^2 of .080. Therefore, 8% of

Literature, Arts, and Social Sciences) can be explained by students' art, music, and theater experiences. The independent variable SCI (science) has a Unique r^2 of .006. Therefore, .6% of the variance in Factor IV (General Education, Literature, Arts, and Social Sciences) can be explained by students' science experiences. The independent variable LIB (library) has a Unique r^2 of .010. Therefore, 1.0% of the variance in Factor IV (General Education, Literature, Arts, and Social Sciences) can be explained by students' library experiences. The independent variable CLUBS (clubs and organizations) has a Unique r^2 of .008. Therefore, .8% of the variance in Factor IV (General Education, Literature, Arts, and Social Sciences) can be explained by students' experiences with clubs and organizations. The independent variable CONTP (topics of conversation) has a Unique r^2 of .028. Therefore, 2.8% of the variance in Factor IV (General Education, Literature, Arts, and Social Sciences) can be explained by topics of conversations. The set of dummy coded variables that represented class (classification in college) has a Unique R^2 (R^2 change) of .010. Therefore, 1% of the variance in Factor IV (General Education, Literature, Arts, and Social

Sciences) can be explained by classification in college.

TABLE 26
 MULTIPLE REGRESSION FOR FACTOR IV
 (GENERAL EDUCATION, LITERATURE, ARTS,
 AND SOCIAL SCIENCES)

INDEP VAR	Regression Slope	Standard Error	Standardized Beta Weights	UNIQUE r ²	t Value	SIG t
AGE	.168030	.074998	.082302	.005	2.240	.0254*
SEX	-.009922	.074349	-.004935	.000	-.133	.8939
JUNIO	-.098357	.090435	-.044428	.001	-1.088	.2771**
SOPH	.112116	.096802	.047999	.001	1.158	.2472**
FRESH	.172453	.100288	.075645	.003	1.720	.0859**
CONIN	-.003226	.013374	-.010897	.000	-.241	.8094
UNION	-.003437	.007202	-.021311	.000	-.477	.6333
AMT	.074177	.008314	.336851	.080	8.922	.0000*
SCI	-.013148	.005589	-.086797	.006	-2.352	.0189*
LIB	.024232	.007670	.119118	.010	3.159	.0016*
RES	.003907	.005520	.028929	.001	.708	.4793
FAC	-.008775	.007983	-.043980	.001	-1.099	.2720
WRITE	.006838	.007122	.040964	.001	.960	.3373
ATHL	-.010686	.005818	-.075826	.003	-1.837	.0666
PERS	.004535	.007265	.028370	.000	.624	.5327

Table 26 (continued).

TABLE 26 (continued).

INDEP VAR	Regression Slope	Standard Error	Standardized Beta Weights	UNIQUE r^2	t Value	SIG t
CLUBS	-.019030	.006750	-.123666	.008	-2.819	.0049*
CDURS	.000191	.007785	.001088	.000	.025	.9804
CONTP	.044320	.008423	.243992	.028	5.262	.0000*
STACQ	.002750	.006662	.019336	.000	.413	.6800

*statistically significant at the .05 level

**The variable identified as class includes all levels of classification in college. The R^2 change (Unique R^2) for the set of dummy coded variables for class was .010
 $p = .0176$.

TABLE 27

ADJUSTED MEANS FOR CLASSIFICATION IN COLLEGE FOR FACTOR
 IV (GENERAL EDUCATION, LITERATURE, ARTS,
 AND SOCIAL SCIENCES)

CLASSIFICATION IN COLLEGE	ADJUSTED MEANS
FRESHMEN	.10955
SOPHOMORES	.04922
JUNIORS	-.16126
SENIORS	-.06290

The Unique R^2 (R^2 change) for the set of dummy coded variables which represented class was

statistically significant; therefore, it was necessary to calculate the adjusted means for classification in college for Factor IV (General Education, Literature, Arts, and Social Sciences). The variable class (classification in college) has a Unique r^2 of .010. Therefore, 1% of the variance in Factor IV (General Education, Literature, Arts, and Social Sciences) can be explained by students' classification in college. The SPSS/PC MANOVA procedure was used to calculate the adjusted mean for each classification. Using the adjusted means for each class, the Modified LSD post hoc test showed a statistically significant difference between the adjusted means for freshmen and juniors (Norusis, 1991) (see Table 27). This difference is most likely explained by the exposure of freshmen to more recent college experiences related to general education, literature, arts and social sciences than juniors.

Null Hypothesis Five

H₀5: After age, sex, and classification in college are in the regression equation, the additional variance explained by the Quality of Effort Scales for Factor V (Vocational Preparation) is zero.

The R^2 value for age, sex, and classification in college was .080. The R^2 for age, sex, classification in college combined with the Quality of Effort Scales was .150, resulting in a difference of .070. Table 28 shows the comparison of the R^2 for age, sex, classification in college alone, and the combined effects of age, sex, classification in college and the Quality of Effort Scales. For Factor V (Vocational Preparation) the addition of the Quality of Effort Scales to age, sex, and classification in college accounts for 7% more variance explained than does age, sex, and classification in college alone.

The p value of .00005 is less than the alpha level of .05. Therefore, null hypothesis five was rejected. The additional variance explained by the Quality of Effort Scales for Factor V (Vocational Preparation) was 6.9%

The Unique r^2 for each of the independent variables is presented in Table 29. For Factor V (Vocational Preparation) four variables were significant using an alpha level of .05. The variable AMT (art, music, and theater) has a Unique r^2 of .007. Therefore, .7% of the variance in Factor V (Vocational Preparation) can be explained by students' art, music and theater experiences. The independent variable FAC

(faculty) has a Unique r^2 of .013. Therefore, 1.3% of the variance in Factor V (Vocational Preparation) can be explained by students' experiences with faculty. The independent variable COURS (course learning) has a Unique r^2 of .010. Therefore, 1% of the variance in Factor V (Vocational Preparation) can be explained by course learning. The set of dummy coded variables that represented class (classification in college) has a Unique R^2 (R^2 change) of .032. Therefore, 3.2% of the variance in Factor V (Vocational Preparation) can be explained by classification in college.

TABLE 28

HIERARCHICAL REGRESSION VARIANCE EXPLAINED FOR AGE, SEX, AND CLASSIFICATION ALONE COMPARED TO AGE, SEX, CLASSIFICATION, AND QUALITY OF EFFORT COMBINED FOR FACTOR V (VOCATIONAL PREPARATION)

R^2 Age, Sex, and Classification Alone	R^2 Age, Sex, Classification, and Quality of Effort Combined	Additional Variance Explained by Quality of Effort	F value for R^2	p
.080	.150	.070	4.29365	.00005

TABLE 29
 MULTIPLE REGRESSION FOR FACTOR V (VOCATIONAL PREPARATION)

INDEP VAR	Regression Slope	Standard Error	Standardized Beta Weights	UNIQUE r^2	t Value	SIG t
AGE	.039490	.079825	.019473	.000	.495	.6210
SEX	-.016111	.079134	-.008067	.000	-.204	.8387
JUNIO	-.029400	.096256	-.013369	.000	-.305	.7601**
SOPH	-.216933	.103032	-.093499	.005	-2.105	.0356**
FRESH	-.485186	.106743	-.214255	.024	-4.545	.0000**
CONIN	.025633	.014235	.087160	.004	1.801	.0722
UNION	.000663	.007666	.004137	.000	.086	.9311
AMT	-.022024	.008849	-.100689	.007	-2.489	.0130*
SCI	-.002787	.005949	-.018521	.000	-.468	.6396
LIB	.001032	.008164	.005106	.000	.126	.8995
RES	-.005989	.005875	-.044644	.001	-1.019	.3083
FAC	.028908	.008497	.145856	.013	3.402	.0007*
WRITE	.005698	.007581	.034366	.001	.752	.4525
ATHL	.003744	.006192	.026747	.000	.605	.5456
PERS	-.011035	.007733	-.069491	.002	-1.427	.1540
CLUBS	.006401	.007184	.041877	.001	.891	.3732
COURS	.024347	.008286	.139516	.010	2.938	.0034*
CONTP	-.002935	.008965	-.016269	.000	-.327	.7434
STACQ	-.001202	.007091	-.008512	.000	-.170	.8654

*statistically significant at the .05 level

**The variable identified as class includes all levels of classification in college. The R^2 change (Unique R^2) for the set of dummy coded variables for class was .032 with $p = .0000$.

The Unique R^2 (R^2 change) for the set of dummy coded variables which represented class was statistically significant; therefore, it was necessary

to calculate the adjusted means for classification in college for Factor V (Vocational Preparation). The variable class (classification in college) had a Unique r^2 of .032. Therefore, 3.2% of the variance in Factor V (Vocational Preparation) can be explained by students' classification in college. The SPSS/PC MANOVA procedure was used to calculate the adjusted mean for each classification. Using the adjusted means for each class, the Modified LSD post hoc test showed a statistically significant difference between the adjusted means for freshmen and sophomores, freshmen and juniors, and freshmen and seniors (Norusis, 1991) (see Table 30). This difference is most likely explained by the exposure of sophomores, juniors, and seniors to more college experiences related to vocational preparation than freshmen.

TABLE 30
ADJUSTED MEANS FOR CLASSIFICATION IN COLLEGE FOR FACTOR
V (VOCATIONAL PREPARATION)

CLASSIFICATION IN COLLEGE	ADJUSTED MEANS
FRESHMEN	-.31623
SOPHOMORES	-.04798
JUNIORS	.13955
SENIORS	.16895

Summary

Using demographic information about age, sex, and classification in college alone can only explain part of the variance in the Estimate of Gains Scale for each of the five factors. The addition of the Quality of Effort Scales accounted for more variance explained in the Estimate of Gains Scale for each of the five factors. In other words, when you control for age, sex, and classification in college, the addition of the Quality of Effort Scales accounted for more explained variance in the Estimate of Gains Scale for each of the five factors. For each of the five factors, the combined effects of age, sex, classification in college, and the Quality of Effort Scales explained

more of the variance in the Estimate of Gains Scale than did age, sex, and classification in college alone.

Using the Unique r^2 for each of the independent variables does not provide adequate information to make recommendations about specific activities for student involvement. Using the items from the Estimate of Gains Scale that load on each of the five factors does provide useful information about the activities and events that would contribute to students' gains from their college experience at East Tennessee State University. The activities and events that students would need to be most involved with are those that explain the largest part of the variance in the Estimate of Gains Scale. For this study, those activities and events would be outlined in Factor I (Personal/Social Development). The activities and events that explain the second largest part of the variance would be the next area of emphasis. For this study, those activities and events would be outlined in Factor II (Intellectual Skills). The activities and events that explained the third largest part of the variance would be the next area of emphasis. For this study, those activities and events would be outlined in Factor III (Science/Technology). The activities and events that explain the fourth largest part of the

variance would be the next area of emphasis. For this study, those activities and events would be outlined in Factor IV (General Education, Literature, Arts, and Social Sciences). This process would continue through the activities and events that explained the fifth largest part of the variance. For this study, those activities and events would be outlined in Factor V (Vocational Preparation).

Factor I (Personal/Social Development) explained 33.7% of the variance in the Estimate of Gains Scale. The items from the Estimate of Gains Scale that comprised Factor I were: number 12, 13, 11, 10, and 14. Activities in and outside the classroom could be designed and emphasized to assist students in the development of their own values and ethical standards, understanding of other people and the ability to get along with different kinds of people, capability to function as a team member, understanding of their abilities, interests, and personality, and development of good health habits and physical fitness.

Factor II (Intellectual Skills) explained 9.4% additional variance in the Estimate of Gains Scale. The items from the Estimate of Gains Scale that comprised Factor II were: 20, 21, 18, 19, and 7. In addition to current practices, activities both in and

outside the classroom could be designed to further encourage students to put ideas together to see relationships, similarities and differences between ideas, learn on their own, pursue ideas and find information, think analytically, logically and quantitatively, and to write clearly and effectively.

Factor III (Science/Technology) explained 6.7% additional variance in the Estimate of Gains Scale. This was the third highest percentage of additional variance explained in the Estimate of Gains Scale. The items from the Estimate of Gains Scale that comprised Factor III were: 16, 15, and 17. Activities in and outside the classroom could be designed and emphasized to assist students in understanding new scientific and technical developments, the nature of science and experimentation, and the consequences (both benefits and dangers) of new applications in science and technology.

Factor IV (General Education, Literature, Arts, and Social Sciences) explained 6.0% additional variance in the Estimate of Gains Scale. The items from the Estimate of Gains Scale that comprised Factor IV were: 6, 5, 23, 9, and 22. To provide opportunities for gains in this area, activities in and outside the classroom could be designed to encourage students to

broaden their acquaintance and enjoyment of literature, develop an understanding and enjoyment of art, music, and drama, acquire knowledge about other parts of the world and other people, become aware of different philosophies, cultures and ways of life, and recognize the importance of history for understanding the present and the past.

Factor V (Vocational Preparation) explained 5.0% additional variance in the Estimate of Gains Scale. This factor explained the smallest percentage of the variance in the Estimate of Gains Scale but does have some important contributions for students to gain from their college experience. The items from the Estimate of Gains Scale that comprised Factor V were: 2, 1, 4, and 3. To provide opportunities for students in this area, activities in and outside the classroom would encourage students to acquire the background and specialization needed for further education, to learn the skills applicable to a specific job or type of work, gain a range of information that may be relevant to a career, and gain a broad general education about different fields of knowledge.

CHAPTER 5
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The college environment influences the intellectual and personal experiences of students who are enrolled in institutions of higher education. Institutions of higher education have the responsibility of providing opportunities for involvement so that students can experience events and situations that are intellectually and socially beneficial (Kuh et al., 1991; Bowen, 1977; Clark and others, 1972). According to Pace (1974) and Kuh et al. (1991), student involvement in the college environment is the shared responsibility of both personnel in institutions of higher education and the students themselves.

Opinions from students about their collegiate experiences provide vital information for college and university personnel responsible for making decisions impacting the education and experiences available to students. Information from students about their collegiate experience can show how those experiences influence students' opinions about their growth and

development (gains) from their college educational experiences. Assessment of experiences is necessary to ensure continued support for programs and services and to adequately understand the collegiate environment (Chickering & Reisser, 1993; Pascarella & Terenzini, 1991).

According to Astin (1985), students learn by being involved in college experiences. This idea emphasizes the dual responsibility for student involvement. The college environment needs to provide a variety of opportunities for students to interact with other people and ideas. In turn, students must take advantage of the opportunities available for them which lead to their growth and development. A significant amount of research has focused on the growth and development of college students. Activities that are part of the educational experience for college students are well documented. Through examination of a variety of educational tasks and experiences, Pace (1984) concluded that a strong relationship existed between the quality of students' educational experience and the effort given by students. According to Pace, "activities which require the greatest effort are potentially more educative" (p. 5). For students' to have a significant experience, they must invest their

time and effort. The Third Edition of the College Student Experiences Questionnaire (CSEQ) developed by Pace was the instrument used in this study.

The purpose of this study was to determine what activities from the ETSU experience influence students' opinions about their growth and development. This study also examined the variables sex, age, and classification in college (freshmen, sophomore, junior, and senior). This study utilized the College Student Experiences Questionnaire (CSEQ) to determine students' involvement in activities that are an integral part of their educational experience and the impact of that involvement on their growth and development (gains) at ETSU. Responses to the CSEQ from undergraduate students enrolled in classes taught during the day on the main campus of ETSU located in Johnson City, Tennessee during Spring Semester 1994 were used in this study. The sampling procedure used by the Office of Institutional Research at ETSU was designed to increase the number of classes with a higher percentage of Black/African American students enrolled. In addition, freshmen, sophomore, junior, and senior level classes were selected from the eight undergraduate schools, colleges, and divisions (ETSU Undergraduate Catalog, 1994-1995). Fifty classes were administered the CSEQ.

The sample consisted of 371 males and 588 females with two unidentified cases in this category. Of the 961 students surveyed, 600 were traditional age (22 and younger) and 361 were nontraditional age (23 and older). For classification purposes there were 244 freshmen, 225 sophomores, 259 juniors, and 233 seniors. The racial and ethnic identification of the sample included of 64 Black/African American students, 863 students who selected the category "white", 24 students who selected the category "other", and 10 students who did not report racial or ethnic identification.

Conclusions

Three research questions and five null hypotheses were addressed in this study. All hypotheses were tested using an alpha level of .05. It should be noted that results of this study are based on a sample that was significantly different from the ETSU student body with regard to students' age, classification in college, and racial or ethnic identification. No significant difference was found between the sample used in this study and the ETSU student body when sex was considered.

Research Question One

Is there a significant difference between the sample used in this study and the ETSU student body with regard to sex, age, classification in college, and racial or ethnic identification?

The Chi Square procedure was used to answer Research Question One. No significant differences were found between the ETSU student body and the CSEQ sample using the Chi Square procedure to compare the two groups on the variable sex. The ETSU undergraduate student body is 41.9% male and 58.1% female. The CSEQ sample is 38.7% male and 61.3% female.

A significant difference was found between the ETSU student body and the CSEQ sample when using the Chi Square to compare the two groups on the variable age. The ETSU student body is 46.6% traditional age (22 and younger) and 53.4% nontraditional age (23 and older). The CSEQ sample is 62.4% traditional age and 37.6% nontraditional age. The CSEQ sample had a higher percentage of traditional age students than the ETSU student body.

A significant difference was found between the ETSU student body and the CSEQ sample when using the Chi Square procedure to compare the two groups on the variable classification in college. The ETSU student

body is 24.6% freshmen, 23.5% sophomores, 22.5% juniors, and 29.5% seniors. The CSEQ sample is 25.4% freshmen, 23.4% sophomores, 27.0% juniors, and 24.2% seniors. The CSEQ sample had a higher percentage of juniors and a lower percentage of seniors than the ETSU student body.

A significant difference was found between the ETSU student body and the CSEQ sample when using the Chi Square procedure to compare the two groups on the variable racial or ethnic identification. The ETSU student body is 4.2% Black/African American, 91.4% white, 1.9% other, and 2.4% not reported. The CSEQ sample is 6.7% Black/African American, 89.8% white, 2.5% other, and 1% not reported. By design, the CSEQ sample had a higher percentage of Black/African American students and those students who selected their racial or ethnic identification to be "other" than the ETSU student body.

Research Question Two

Is there a difference between the reliabilities for the Quality of Effort Scales for this study and the CSEQ norm base and what is the reliability for the Estimate of Gains Scale for this study? A comparison of the Cronbach's Coefficient Alpha Reliability for the ETSU sample and the CSEQ norm base showed little

difference between the two sets of results. For the CSEQ norm base the reliabilities ranged from .83 to .96. The reliabilities for the ETSU sample ranged from .81 to .96. A comparison of the CSEQ norm base and the ETSU study showed the greatest differences in reliability were for the Course Learning Scale (CSEQ norm base was .96 versus .86 for this study) and the Personal Experiences Scale (CSEQ norm base was .96 versus .86 for this study). For these two scales, the ETSU sample was not as reliable as the CSEQ norm base. The Cronbach's Alpha Reliability for the Third Edition (1990) of the CSEQ Estimate of Gains Scale was not available. The Cronbach's Alpha Reliability for the Estimate of Gains Scale for this study was .91.

Research Question Three

What are the factors in the Estimate of Gains Scale for this study and are these similar to the CSEQ norm base?

A factor analysis was performed on the data to determine if there was more than one dimension in the Estimate of Gains scale. To identify the factors in the Estimate of Gains Scale, principal components analysis with varimax rotation was used. The factor analysis extracted five factors that accounted for 60.8% of the variance. The five factors were: Factor

I - Personal/Social Development, Factor II - Intellectual Skills, Factor III - Science/Technology, Factor IV - General Education, Literature, Arts, and Social Sciences, and Factor V - Vocational Preparation.

A comparison of the factors for the CSEQ norm base and this study showed that the same five factors emerged from the factor analysis. Some minor variations were found between the items that loaded for each factor for the CSEQ norm base and this study. Overall, the factor and factor loadings were remarkably similar for the CSEQ norm base and this study. Only one item from the Estimate of Gains Scale for this study did not load on any factors using the .50 value as a ceiling. The item that did not load was item number eight (8) on the Estimate of Gains Scale that assessed students' familiarity with computers.

For each of the five factors extracted, factor scores were calculated using all 23 items on the Estimate of Gains scale. Each of these factors was then used as the dependent variable in five separate hierarchical regression models.

Hypotheses

The five null hypotheses in this study were tested using hierarchical multiple regression using each factor as a dependent variable in separate regression

models. Hierarchical multiple regression was used to analyze the effects of the independent variables on the dependent variable. In this study, the hierarchical multiple regression was a two-step process. The first step entered age, sex, and the set of dummy coded variables for classification in college as a block into the regression equation, then the 14 Quality of Effort Scales were entered on the second step. This procedure was performed to determine the effect of age, sex, and classification in college on each of the five factors (the dependent variables). An R^2 value was calculated for this step. The second step in the process entered the 14 Quality of Effort Scales (the remaining independent variables) along with age, sex, and classification in college. A second R^2 value for the combined effects of all the independent variables was calculated. The difference between the R^2 for the first step and the R^2 for the second step (R^2 change) represents the additional explained variance by the Quality of Effort Scales.

The Unique r^2 for each of the independent variables was also reported. The independent variable classification in college was represented by a set of three dummy coded variables. To determine the R^2 change for this set of variables, a hierarchical

multiple regression was used. All independent variables except for the variables representing class were entered on step one, then the set of dummy coded variables for class was entered second. When the R^2 change for the classification variables was statistically significant the MANOVA procedure was used to calculate the adjusted factor score means for each classification. The post hoc Modified LSD test was used to determine which pairs of adjusted class means were different (Hinkle, Wiersma, & Jurs, 1985).

Null Hypothesis One

H_01 : After age, sex, and classification in college are in the regression equation, the additional variance explained by the Quality of Effort Scales for Factor I (Personal/Social Development) is zero.

The R^2 value for age, sex, and classification in college was 069. The R^2 value for age, sex, classification in college combined with the Quality of Effort Scales was .254, resulting in a difference of .185. For Factor I (Personal/Social Development) the addition of the Quality of Effort Scales to age, sex, and classification in college accounts for 18.5% more variance explained than does age, sex, and classification in college alone. The p value of .00005

was less than the alpha level of .05; therefore, Hypothesis one was rejected.

A Unique r^2 for each of the independent variables was calculated to determine how much of the variance in Factor I (Personal/ Social Development) could be uniquely contributed to each independent variable. Five variables were statistically significant at the .05 level. The variable AGE (age of students) had a Unique r^2 of .01 which explained 1% of the variance in Factor I. The negative sign of the partial regression coefficient for age indicated that traditional age students had higher factor scores on Factor I than nontraditional age students. The variable SEX (sex of students) has a Unique r^2 of .02 that explained 2% of the variance in Factor I. The positive sign of the partial regression coefficient for sex indicated that females had higher factor scores on Factor I than males. The variable ATHL (athletic and recreational facilities experiences) has a Unique r^2 of .026 that explained 2.6% of the variance in Factor I. The variable PERS (personal experiences) has a Unique r^2 of .012 that explained 1.2% of the variance in Factor I. The variable STACQ (student acquaintances) has a Unique r^2 of .007 that explained .7% of the variance in Factor I.

Null Hypothesis Two

H₀2: After age, sex, and classification in college are in the regression equation, the additional variance explained by the Quality of Effort Scales for Factor II (Intellectual Skills) is zero.

The R² value for age, sex, and classification in college was 038. The R² value for age, sex, classification in college combined with the Quality of Effort Scales was .163, resulting in a difference of .125. For Factor II (Intellectual Skills) the addition of the Quality of Effort Scales to age, sex, and classification in college accounts for 12.5% more variance explained than does age, sex, and classification in college alone. The p value of .00005 was less than the alpha level of .05; therefore, Hypothesis two was rejected.

A Unique r² for each of the independent variables was calculated to determine how much of the variance in Factor II (Intellectual Skills) could be uniquely contributed to each independent variable. Four variables were statistically significant at the .05 level. The variable SEX (sex of students) has a Unique r² of .01 that explained 1% of the variance in Factor II. The negative sign of the partial regression coefficient for sex indicated that males had higher

factor scores on Factor II than females. The variable AMT (art, music, and theater) has a Unique r^2 of .008 that explained .8% of the variance in Factor II. The variable LIB (library) has a Unique r^2 of .005 that explained .5% of the variance in Factor II. The variable COURSE (course learning) has a Unique r^2 of .021 that explained 2.1% of the variance in Factor II.

Null Hypothesis Three

H₀3: After age, sex, and classification in college are in the regression equation, the additional variance explained by the Quality of Effort Scales for Factor III (Science/Technology) is zero.

The R^2 value for age, sex, and classification in college was .039. The R^2 value for age, sex, classification in college combined with the Quality of Effort Scales was .365, resulting in a difference of .325. For Factor III (Science/Technology) the addition of the Quality of Effort Scales to age, sex, and classification in college accounts for 32.5% more variance explained than does age, sex, and classification in college alone. The p value of .00005 was less than the alpha level of .05; therefore, Hypothesis three was rejected.

A Unique r^2 for each of the independent variables was calculated to determine how much of the variance in Factor III (Science/Technology) could be uniquely contributed to each independent variable. Six variables were statistically significant at the .05 level. The variable CONIN (information in conversations) has a Unique r^2 of .004 that explained .4% of the variance in Factor III. The variable SCI (science) has a Unique r^2 of .256 that explained 25.6% of the variance in Factor III. The variable ATHL (athletic and recreational experiences) has a Unique r^2 of .013 that explained 1.3% of the variance in Factor III. The variable PERS (personal experiences) has a Unique r^2 of .006 that explained .6% of the variance in Factor III. The variable CLUBS (clubs and organizations) has a Unique r^2 of .004 that explained .4% of the variance in Factor III. The variable CONTP (topics of conversation) has a Unique r^2 of .006 that explained .6% of the variance in Factor III.

Null Hypothesis Four

H₀4: After age, sex, and classification in college are in the regression equation, the additional variance explained by the Quality of Effort Scales for

Factor IV (General Education, Literature, Arts, and Social Sciences) is zero.

The R^2 value for age, sex, and classification in college was .025. The R^2 value for age, sex, classification in college combined with the Quality of Effort Scales was .259, resulting in a difference of .234. For Factor IV (General Education, Literature, Arts, and Social Sciences) the addition of the Quality of Effort Scales to age, sex, and classification in college accounts for 23.4% more variance explained than does age, sex, and classification in college alone. The p value of .00005 was less than the alpha level of .05; therefore, Hypothesis four was rejected.

A Unique r^2 for each of the independent variables was calculated to determine how much of the variance in Factor IV (General Education, Literature, Arts, and Social Sciences) could be uniquely contributed to each independent variable. Seven variables were statistically significant at the .05 level. The variable AGE (age of students) has a Unique r^2 of .005 that explained .5% of the variance in Factor IV. The positive sign of the partial regression coefficient for age indicated that nontraditional age students had higher factors scores on Factor IV than traditional age students. The variable AMT (art, music, and theater)

has a Unique r^2 of .080 that explained 8% of the variance in Factor IV. The variable SCI (science) has a Unique r^2 of .006 that explained .6% of the variance in Factor IV. The variable LIB (library) has a Unique r^2 of .010 that explained 1% of the variance in Factor IV. The variable CLUBS (clubs and organizations) has a Unique r^2 of .008 that explained .8% of the variance in Factor IV. The variable CONTP (topics of conversation) has a Unique r^2 of .028 that explained 2.8% of the variance in Factor IV. The set of dummy coded variables that represent class (classification in college) has a Unique R^2 (R_2 change) of .010 that explained 1% of the variance in Factor IV.

The Unique R^2 (R^2 change) for the set of dummy coded variables representing class was statistically significant; therefore, it was necessary to calculate the adjusted means for classification in college. The SPSS/PC MANOVA procedure was used to calculate the adjusted mean for each classification. Using the adjusted means for each class, the Modified LSD post hoc test showed a statistically significant difference between the adjusted means for freshmen and juniors for Factor IV (General Education, Literature, Arts, and Social Sciences).

Null Hypothesis Five

H₀5: After age, sex, and classification in college are in the regression equation, the additional variance explained by the Quality of Effort Scales for Factor V (Vocational Preparation) is zero.

The R² value for age, sex, and classification in college was .080. The R² value for age, sex, classification in college combined with the Quality of Effort Scales was .150, resulting in a difference of .070. For Factor V (Vocational Preparation) the addition of the Quality of Effort Scales to age, sex, and classification in college accounts for 7% more variance explained than does age, sex, and classification in college alone. The p value of .00005 was less than the alpha level of .05; therefore, Hypothesis five was rejected.

A Unique r² for each of the independent variables was calculated to determine how much of the variance in Factor V (Vocational Preparation) could be uniquely contributed to each independent variable. Four variables were statistically significant at the .05 level. The variable AMT (art, music, and theater) has a Unique r² of .007 that explained .7% of the variance in Factor V. The variable FAC (faculty) has a Unique r² of .013 that explained 1.3% of the variance in

Factor V. The variable COURSE (course learning) has a Unique r^2 of .010 that explained 1% of the variance in Factor V. The set of dummy coded variables that represent class (classification in college) has a Unique R^2 (R^2 change) of .032 that explained 3.2% of the variance in Factor V.

The Unique R^2 (R^2 change) for the set of dummy coded variables representing class was statistically significant; therefore, it was necessary to calculate the adjusted means for classification in college. The SPSS/PC MANOVA procedure was used to calculate the adjusted mean for each classification. Using the adjusted means, the Modified LSD post hoc test showed a statistically significant difference between the adjusted means for freshmen and sophomores, freshmen and juniors, and freshmen and seniors for Factor V (Vocational Preparation).

Summary of Conclusions

Conclusions that can be drawn from this study based on the results are:

1. The same five factors emerged from the factor analysis for this study as the CSEQ norm base. The factors identified were: Factor I - Personal/Social Development, Factor II - Intellectual Skills, Factor

III - Science/Technology, Factor IV - General Education, Literature, Arts, and Social Sciences, and Factor V - Vocational Preparation.

2. The five factors extracted by factor analysis for this study account for 60.8% of the variance in the Estimate of Gains Scale. Factor I (Personal/Social Development) accounted for 33.7% of the variance in the Estimate of Gains Scale. Factor II (Intellectual Skills) accounted for 9.4% additional variance in the Estimate of Gains Scale. Factor III (Science/Technology) accounted for 6.7% additional variance in the Estimate of Gains Scale. Factor IV (General Education, Literature, Arts, and Social Sciences) accounted for 6.0% additional variance in the Estimate of Gains Scale. Factor V (Vocational Preparation) accounted for 5.0% additional variance in the Estimate of Gains Scale.

3. Using demographic information about age, sex, and classification in college alone can only explain part of the variance in the Estimate of Gains Scale for each of the five factors. The addition of the Quality of Effort Scales accounted for more variance explained in the Estimate of Gains Scale for each of the five factors. In other words, when you control for age, sex, and classification in college, the addition of the

Quality of Effort Scales accounted for more explained variance in the Estimate of Gains Scale for each of the five factors. For each of the five factors, the combined effects of age, sex, classification in college, and the Quality of Effort Scales explained more of the variance in the Estimate of Gains Scale than did age, sex, and classification in college alone.

4. For Factor IV (General Education, Literature, Arts, and Social Sciences) the set of dummy coded variables that represented class (classification in college) was statistically significant at the .05 level. Using the adjusted means for each class, the Modified LSD post hoc test showed a statistically significant difference between the adjusted means for freshmen and juniors. This difference is most likely explained by the exposure of freshmen to more recent college experiences related to general education, literature, arts, and social sciences than juniors.

5. For Factor V (Vocational Preparation) the set of dummy coded variables that represented class (classification in college) was statistically significant at the .05 level. Using the adjusted means for class, the Modified LSD post hoc test showed a statistically significant difference between the

adjusted means for freshmen and sophomores, freshmen and juniors, and freshmen and seniors. This difference is most like explained by the exposure of sophomores, juniors, and seniors to more college experiences related to vocational preparation than freshmen.

6. If students are to grow and develop from their educational experience at ETSU, conceivably the activities and events that students would need to be most involved with are those that explain the largest part of the variance in the Estimate of Gains Scale. For this study, those activities and events would be outlined in Factor I (Personal/Social Development). The activities and events that explain the second largest part of the variance would be the next area of emphasis. For this study, those activities and events would be outlined in Factor II (Intellectual Skills). The activities and events that explained the third largest part of the variance would be the next area of emphasis. For this study, those activities and events would be outlined in Factor III (Science/Technology). The activities and events that explain the fourth largest part of the variance would be the next area of emphasis. For this study, those activities and events would be outlined in Factor IV (General Education, Literature, Arts, and Social Sciences). This process

would continue through the activities and events that explained the fifth largest part of the variance. For this study, those activities and events would be outlined in Factor V (Vocational Preparation).

Factor I (Personal/Social Development) explained 33.7% of the variance in the Estimate of Gains Scale. The items from the Estimate of Gains Scale that comprised Factor I were: number 12, 13, 11, 10, and 14. Activities in and outside the classroom could be designed and emphasized to assist students in the development of their own values and ethical standards; understanding of other people and the ability to get along with different kinds of people; capability to function as a team member; understanding of their abilities, interests, and personality; and development of good health habits and physical fitness.

Factor II (Intellectual Skills) explained 9.4% additional variance in the Estimate of Gains Scale. The items from the Estimate of Gains Scale that comprised Factor II were: 20, 21, 18, 19, and 7. In addition to current practices, activities both in and outside the classroom could be designed to further encourage students to put ideas together to see relationships; recognize similarities and differences between ideas; learn on their own; pursue ideas and

find information; think analytically, logically, and quantitatively; and to write clearly and effectively.

Factor III (Science/Technology) explained 6.7% additional variance in the Estimate of Gains Scale. This was the third highest percentage of additional variance explained in the Estimate of Gains Scale. The items from the Estimate of Gains Scale that comprised Factor III were: 16, 15, and 17. Activities in and outside the classroom could be designed and emphasized to assist students in understanding new scientific and technical developments; the nature of science and experimentation; and the consequences (both benefits and dangers) of new applications in science and technology.

Factor IV (General Education, Literature, Arts, and Social Sciences) explained 6.0% additional variance in the Estimate of Gains Scale. The items from the Estimate of Gains Scale that comprised Factor IV were: 6, 5, 23, 9, and 22. To provide opportunities for gains in this area, activities in and outside the classroom could be designed to encourage students to broaden their acquaintance and enjoyment of literature; develop an understanding and enjoyment of art, music, and drama; acquire knowledge about other parts of the world and other people; become aware of different

philosophies, cultures and ways of life; and recognize the importance of history for understanding the present and the past.

Factor V (Vocational Preparation) explained 5.0% additional variance in the Estimate of Gains Scale. This factor explained the smallest percentage of the variance in the Estimate of Gains Scale but does have some important contributions for students to gain from their college experience. The items from the Estimate of Gains Scale that comprised Factor V were: 2, 1, 4, and 3. To provide opportunities for students in this area, activities in and outside the classroom would encourage students to acquire the background and specialization needed for further education; to learn the skills applicable to a specific job or type of work; gain a range of information that may be relevant to a career; and gain a broad general education about different fields of knowledge.

Factor I and Factor II combined account for 43.1% of the variance in the Estimate of Gains Scale. Factor I, Factor II, and Factor III combined account for 49.8% of the variance in the Estimate of Gains Scale. Combining Factor I, Factor II, Factor III, and Factor IV accounted for 55.8% of the variance in the Estimate of Gains Scale. The combination of all five

factors accounted for 60.8% of the variance in the Estimate of Gains Scale. To ensure that activities, events, assignments, and group projects emphasize growth and development for students at ETSU, a concerted effort by faculty, staff, and students is essential.

Recommendations for Further Study

Based on the results of this study, the following recommendations for further research include:

1. When selecting the sample to be used in future study, an effort should be made to more accurately reflect the demographics of the ETSU student body.

2. The College Student Experiences Questionnaire should continue to be used at ETSU. It provides valuable information about the activities from the college experience that influence students' opinions about their growth and development from their educational experience at ETSU.

3. Qualitative research using focus groups to obtain information from students about their growth and development (gains) from the college experience could contribute information to assist in explaining the 39.2% of the variance in the Estimate of Gains Scale that was not explained in this study.

4. Additional research needs to be conducted that considers the influence of students' college major and employment status along with parents' college background, on students' opinions about their growth and development (gains) from their educational experience at ETSU. It would also provide useful information to request students to provide their exact age for use in data analysis. Another area to consider would be place of residence for students. This information could be used to determine if there are differences between students who live in an apartment near campus and those students who live at home with parents or relatives.

REFERENCES

Aldridge, M., & DeLucia, R. (1989). Boredom: The academic plague of first year students. Journal of the Freshmen Year Experience, 1(2), 43-56.

Association of American Colleges (1985). Integrity in the college curriculum: A report to the academic community. Washington, DC: Association for American Colleges.

Astin, A. W. (1970). The methodology of research on college impact (II). Sociology of Education, 43(4), 437-450.

Astin, A. W. (1977). Four critical years. San Francisco: Jossey-Bass.

Astin, A. W. (1984). Student involvement: A developmental theory for higher education. Journal of College Student Personnel, 25(4), 297-308.

Astin, A. W. (1985). Achieving educational excellence. San Francisco: Jossey-Bass.

Astin, H., & Kent, L. (1983). Gender roles in transition: Research and policy implications for higher education. Journal of Higher Education, 54(3), 309-324.

Bean, J. (1985). Interaction effects based on class level in an explanatory model of college student dropout syndrome. American Educational Research Journal, 22(1), 35-64.

Banning, J. H. (1989). Creating a climate for successful student development: The campus ecology manager role. In U. Delworth, G. R. Hanson and Associates (Ed.), Student services: A handbook for the profession. (2nd ed.)(pp. 209-227). San Francisco: Jossey-Bass.

Banning, J. H. (Ed.). (1978). Campus ecology: A perspective for student affairs. Portland, OR: National Association of Student Personnel Administrators.

Borg, W. R., & Gall, M. D. (1989). Educational research: An introduction (5th ed.). White Plains, NY: Longman.

Bowen, H. R. (1977). Investment in learning: The individual and social value of American higher education. San Francisco: Jossey-Bass.

Boyer, E. L. (1987). College: The undergraduate experience in America. Princeton, NJ: Carnegie Foundation for the Advancement of Teaching.

Carey, J. D., Hamilton, D. L., & Shanklin, G. (1986). Development of an instrument to measure rapport between college roommates. Journal of College Student Personnel, 27(3), 269-273.

Chickering, A. W. (1969). Education and identity. San Francisco: Jossey-Bass.

Chickering, A. W. (1974). Commuting versus resident students: Overcoming educational inequities of living off campus. San Francisco: Jossey-Bass.

Chickering, A. W., & Reisser, L. (1993). Education and identity (2nd ed.). San Francisco: Jossey-Bass.

Clark, B. R., and others (1972). Students and colleges: Interaction and change. Berkeley, CA: Center for Research and Development in Higher Education, University of California.

Cross, K. P. (1971). Beyond the open door: New students to higher education. San Francisco: Jossey-Bass.

Cross, K. P. (1981). Adults as learners: Increasing participation and facilitating learning. San Francisco: Jossey-Bass.

Decoster, D. A. (1989). Review of college student experiences. In J. C. Conoley & J. J. Kramer (Eds.), The tenth mental measurements yearbook (pp. 197-199). Lincoln, NE: Buros Institute of Mental Measurements.

East Tennessee State University Fact Book (1994).

East Tennessee State University Undergraduate Catalog (1994-1995).

Forrest, A. (1982). Increasing student competence and persistence: The best case for general education.

Iowa City, IA: American College Testing Program
National Center for Advancement of Educational
Practices.

Gay, L. R. (1992). Educational research (4th ed.). New York: Macmillian.

Green, S. (1993). The role of task in the development of academic thinking through reading and writing in a college history course. Research in the teaching of English, 27(1), 46-75.

Hawken, L., Duran, R. L., & Kelly, L. (1991). The relationship of interpersonal communication variables to academic success and persistence in college. Communication Quarterly, 39(4), 297-308.

Hinkle, D. E., Wiersma, W., & Jurs, S. G. (1988). Applied statistics for the behavioral sciences (2nd ed.). Boston: Houghton Mifflin.

Holland, J. L. (1994). Professional user's guide (rev. ed.). Odessa, FL: Psychological Assessment Resources.

Holland, J. L. (1992). Making vocational choices (2nd ed.). Odessa, FL: Psychological Assessment Resources.

Holland, J. L. (1990). Self-Directed Search. Assessment Booklet and College Majors Finder, Form R. Odessa, FL: Psychological Assessment Resources.

Kegan, D. L. (1978). The quality of student life and financial costs: The cost of social isolation. Journal of College Student Personnel, 19(1), 55-58.

Kolb, D. (1984). Experiential learning: Experience as the source of learning development. Englewood Cliffs, NJ: Prentice-Hall.

Kuh, G. D., Schuh, J. H., Whitt, E. J., & Associates (1991). Involving colleges. San Francisco: Jossey-Bass.

Levitan, T., & Osteen, J. M. (1992). College union activities and programs. In T. E. Milani & J. W. Johnston (Eds.), The college union in the year 2000 (pp. 11-25). San Francisco: Jossey Bass.

Milani, T. E. (1992). Reaffirming the role of the arts in the college union. New Directions for Student Services, 58(Summer), 27-34.

Myers, I. (1987). Introduction to type (4th ed.). Palo Alto, CA: Jossey-Bass.

Noel, L., Levitz, R., Saluri, D., & Associates (1985). Increasing student retention. San Francisco: Jossey-Bass.

Norusis, M. J. (1990). SPSS/PC+ statistics 4.0 for the IBM PC/ XT/ AT and PS/2. Chicago: SPSS.

Norusis, M. J. (1991). SPSS/PC+ studentware plus. Chicago: SPSS.

Pace, C. R. (1974). Demise of diversity: A comparative profile of eight types of institutions. New York: McGraw-Hill.

Pace, C. R. (1979). Measuring outcomes of college. San Francisco: Jossey-Bass.

Pace, C. R. (1980). Measuring the quality of student effort. Current Issues in Higher Education, 2, 10-16.

Pace, C. R. (1982). Achievement and the quality of student effort. Paper prepared for the National Commission on Excellence in Education, Higher Education Research Institute, Los Angeles. pp. 2-40.

Pace, C. R. (1984). Measuring the quality of college student experiences. Los Angeles: University of California, Higher Education Research Institute.

Pace, C. R. (1988). Measuring the quality of college student experiences. Center for the Study of Evaluation, Graduate School of Education, University of California, Los Angeles.

Pace, C. R. (1990). College student experiences: A questionnaire (3rd ed.). Los Angeles: University of California, Higher Education Research Institute.

Pace, C. R. (1990). College student experiences questionnaire: Norms for the third edition, 1990. Los

Angeles: University of California Higher Education Research Institute.

Pace, C. R., & Swayze, S. (1992). Psychometric supplement to the cseq third edition, 1990. Los Angeles: University of California Center for the Study of Evaluation.

Pascarella, E. (1980). Student-faculty informal contact and college outcomes. Review of Educational Research, 50(4), 545-595.

Pascarella, E. (1985). Student's affective development within the college environment. Journal of Higher Education, 56(6), 640-663.

Pascarella, E., Smart, J., Ethington, C., & Nettles, M. (1987). The influence of college on self-concept: A consideration of race and gender differences. American Educational Research Journal, 24, 49-77.

Pascarella, E., & Terenzini, P. (1991). How college affects students. San Francisco: Jossey-Bass.

Robinson, W.P. (1975). Boredom at school. British Journal of Educational Psychology, 45(2), 141-152.

Schlossberg, N.K, Lynch, A. Q., & Chickering, A. W. (1989). Improving higher education environments for adults. San Francisco: Jossey Bass.

Smart, J. (1985). Holland environments as reinforcement systems. Research in Higher Education, 23, 279-292.

Smart, J. C., & Pascarella, E. (1986). Self-concept development and educational degree attainment. Higher Education, 15(1-2), 3-15.

Spady, W. (1970). Dropouts from higher education: An interdisciplinary review and synthesis. Interchange, 1, 64-85.

Stewart, D. W., & Kamins, M. A. (1993). Secondary research: Information sources and methods (2nd ed.). Newbury Park, CA: SAGE Publishers.

Study Group on the Conditions of Excellence in American Higher Education (1984). Involvement in learning: Realizing the potential of American higher education. Washington, DC: National Institute of Education.

Terenzini, P., Theophilides, C., & Lorang, W. (1984). Influences on students' perceptions of their academic skill development during college. Journal of Higher Education, 55(5), 621-636.

Terenzini, P., & Wright, T. (1987). Influences on students' academic growth during four years of college. Research in Higher Education, 26(2), 161-179.

Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. Review of Educational Research, 45(1), 89-125.

Tinto, V. (1987). Leaving college: Rethinking the causes and cures of student attrition. Chicago: University of Chicago Press.

Tinto, V. (1993). Leaving College: Rethinking the causes and cures of student attrition. (2nd ed.). Chicago: University of Chicago Press.

Upcraft, M.L. (1985). Residence halls and student activities. In L. Noel, R. S. Levitz, D. Saluri, & Associates (Ed.), Increasing student retention (pp. 319-344). San Francisco: Jossey-Bass.

Wilson, E. K. (1966). The entering student: Attributes and agents of change. In Newcomb, T. M., & Wilson, E. K. (Ed.), College peer groups (pp. 71-106). Chicago: Aldine.

APPENDICES

APPENDIX A
COLLEGE STUDENT EXPERIENCES QUESTIONNAIRE (CSEQ)

BACKGROUND INFORMATION

DIRECTIONS: Indicate your response by filling in the appropriate space under each question.

Age

- 22 or younger
 23-27
 28 or older

Sex

- male
 female

Are you single or married?

- single
 married

What is your classification in college?

- freshman
 sophomore
 junior
 senior
 graduate student

Did you enter college here or did you transfer here from another college?

- entered here
 transferred from another college

Have you at any time while attending this college lived in a college dormitory, fraternity or sorority house, or other college housing?

- yes
 no

Where do you now live during the school year?

- dormitory or other college housing
 fraternity or sorority house
 private apartment or room within walking distance of the college
 house, apartment, etc. away from the campus
 with my parents or relatives

At this college, up to now, what have most of your grades been?

- A
 A- B-
 B
 B- C-
 C, C- or lower

Which of the following comes closest to describing your major field of study (or your expected major)?

- Agriculture
 Arts (art, music, theater, etc)
 Biological Sciences (biology, biochemistry, botany, zoology, etc.)
 Business
 Computer Science
 Education
 Engineering
 Health related fields (nursing, physical therapy, health technology, etc.)
 Humanities (literature, history, philosophy, religion, etc.)
 Physical Sciences (physics, chemistry, mathematics, astronomy, earth science, etc.)
 Social Sciences (economics, political science, psychology, sociology, etc.)
 Foreign Languages (French, Spanish, etc.)
 Area Studies (Latin American Studies, Russian Studies, Asian Studies, African Studies, etc.)
 Interdepartmental majors (international relations, ecology, women's studies, etc.)
 Other: What? →

- Undecided

Did either of your parents graduate from college?

- no
 yes, both parents
 yes, father only
 yes, mother only

When, or if, you graduate from college, do you expect to enroll for a more advanced degree?

- yes
 no

Are you going to school full-time or part-time?

- full-time
 part-time

During the time school is in session, about how many hours a week do you usually spend on activities that are related to your school work? This includes time spent in class and time spent studying.

- about 50 hours a week or more
- about 40 hours a week
- about 30 hours a week
- about 20 hours a week
- less than 20 hours a week


During the time school is in session, about how many hours a week do you usually spend working on a job?

- none. I am not employed during the school year.
- about 10 hours or less
- about 15 hours
- about 20 hours
- about 30 hours
- more than 30 hours

About how much of your college expenses this year are provided by your parents or family?

- all or nearly all
- more than half
- less than half
- none or very little

What is your racial or ethnic identification?

- American Indian
- Asian or Pacific Islander
- Black, African American
- Hispanic, Latino
- White
- Other: What? 

COLLEGE ACTIVITIES

DIRECTIONS: In your experience at this college during the current school year, about how often have you done each of the following? Indicate your response by filling in one of the spaces to the left of each statement.

Very often
 Often
 Occasionally
 Never

Library Experiences

- Used the library as a quiet place to read or study materials you brought with you.
- Used the card catalogue or computer to find what materials there were on some topic.
- Asked the librarian for help in finding material on some topic.
- Read something in the reserve book room or reference section.
- Used indexes (such as the Reader's Guide to Periodical Literature) to journal articles.
- Developed a bibliography or set of references for use in a term paper or other report.
- Found some interesting material to read just by browsing in the stacks.
- Ran down leads, looked for further references that were cited in things you read.
- Gone back to read a basic reference or document that other authors had often referred to.
- Checked out books to read (not textbooks).

Very often
 Often
 Occasionally
 Never

Experiences with Faculty

- Talked with a faculty member.
- Asked your instructor for information related to a course you were taking (grades, make-up work, assignments, etc.).
- Visited informally and briefly with an instructor after class.
- Made an appointment to meet with a faculty member in his/her office.
- Discussed ideas for a term paper or other class project with a faculty member.
- Discussed your career plans and ambitions with a faculty member.
- Asked your instructor for comments and criticisms about your work.
- Had coffee, cokes, or snacks with a faculty member.
- Worked with a faculty member on a research project.
- Discussed personal problems or concerns with a faculty member.

DIRECTIONS: In your experience at this college during the current school year, about how often have you done each of the following? Indicate your response by filling in one of the spaces to the left of each statement.

- Course Learning
- Very often
Often
Occasionally
Never
- Took detailed notes in class.
 - Participated in class discussions.
 - Underlined major points in the readings.
 - Tried to see how different facts and ideas fit together.
 - Thought about practical applications of the material.
 - Worked on a paper or project where you had to integrate ideas from various sources.
 - Summarized major points and information in your readings or notes.
 - Tried to explain the material to another student or friend.
 - Made outlines from class notes or readings.
 - Did additional readings on topics that were introduced and discussed in class.

- Art, Music, Theater
- Very often
Often
Occasionally
Never
- Talked about art (painting, sculpture, architecture, artists, etc.) with other students at the college.
 - Gone to an art gallery or art exhibit on the campus.
 - Read or discussed the opinions of art critics.
 - Participated in some art activity (painting, pottery, weaving, drawing, etc.).
 - Talked about music (classical, popular, musicians, etc.) with other students at the college.
 - Attended a concert or other music event at the college.
 - Read or discussed the opinions of music critics.
 - Participated in some music activity (orchestra, chorus, etc.).
 - Talked about the theater (plays, musicals, dance, etc.) with other students at the college.
 - Seen a play, ballet, or other theater performance at the college.
 - Read or discussed the opinions of drama critics.
 - Participated in or worked on some theatrical production (acted, danced, worked on scenery, etc.).

- Student Union
- Very often
Often
Occasionally
Never
- Had meals, snacks, etc. at the student union or student center.
 - Looked at the bulletin board for notices about campus events.
 - Met your friends at the student union or student center.
 - Sat around in the union or center talking with other students about your classes and other college activities.
 - Used the lounge(s) to relax or study by yourself.
 - Seen a film or other event at the student union or center.
 - Attended a social event in the student union or center.
 - Heard a speaker at the student union or center.
 - Played games that were available in the student union or center (ping-pong, cards, pool, pinball, etc.).
 - Used the lounge(s) or meeting rooms to meet with a group of students for a discussion.

- Athletic and Recreation Facilities
- Very often
Often
Occasionally
Never
- Set goals for your performance in some skill.
 - Followed a regular schedule of exercise, or practice in some sport, on campus.
 - Used outdoor recreational spaces for casual and informal individual athletic activities.
 - Used outdoor recreational spaces for casual and informal group sports.
 - Used facilities in the gym for individual activities (exercise, swimming, etc.).
 - Used facilities in the gym for playing sports that require more than one person.
 - Sought instruction to improve your performance in some athletic activity.
 - Played on an intramural team.
 - Kept a chart or record of your progress in some skill or athletic activity.
 - Was a spectator at college athletic events.

DIRECTIONS: In your experience at this college during the current school year, about how often have you done each of the following? Indicate your response by filling in one of the spaces to the left of each statement.

- Clubs and Organizations**
- Very often
Often
Occasionally
Never
- Looked in the student newspaper for notices about campus events and student organizations.
- Attended a program or event put on by a student group.
- Read or asked about a club, organization, or student government activity.
- Attended a meeting of a club, organization, or student government group.
- Voted in a student election.
- Discussed policies and issues related to campus activities and student government.
- Worked in some student organization or special project (publications, student government, social event, etc.).
- Discussed reasons for the success or lack of success of student club meetings, activities, or events.
- Worked on a committee.
- Met with a faculty adviser or administrator to discuss the activities of a student organization.

- Experience in Writing**
- Very often
Often
Occasionally
Never
- Used a dictionary or thesaurus to look up the proper meaning of words.
- Consciously and systematically thought about grammar, sentence structure, paragraphs, word choice, and sequence of ideas or points as you were writing.
- Wrote a rough draft of a paper or essay and then revised it yourself before handing it in.
- Spent at least five hours or more writing a paper (not counting time spent in reading or at the library).
- Asked other people to read something you wrote to see if it was clear to them.
- Referred to a book or manual about style of writing, grammar, etc.
- Revised a paper or composition two or more times before you were satisfied with it.
- Asked an instructor for advice and help to improve your writing.
- Made an appointment to talk with an instructor who had criticized a paper you had written.
- Submitted for publication an article, story, or other composition you had written.

- Personal Experiences**
- Very often
Often
Occasionally
Never
- Told a friend why you reacted to another person the way you did.
- Discussed with other students why some groups get along smoothly, and other groups don't.
- Sought out a friend to help you with a personal problem.
- Elected a course that dealt with understanding personal and social behavior.
- Identified with a character in a book or movie and wondered what you might have done under similar circumstances.
- Read articles or books about personal adjustment and personality development.
- Taken a test to measure your abilities, interests, or attitudes.
- Asked a friend to tell you what he/she really thought about you.
- Been in a group where each person, including yourself, talked about his/her personal problems.
- Talked with a counselor or other specialist about problems of a personal nature.

- Student Acquaintances**
- Very often
Often
Occasionally
Never
- Made friends with students whose academic major field was very different from yours.
- Made friends with students whose interests were very different from yours.
- Made friends with students whose family background (economic and social) was very different from yours.
- Made friends with students whose age was very different from yours.
- Made friends with students whose race was different from yours.
- Made friends with students from another country.
- Had serious discussions with students whose philosophy of life or personal values were very different from yours.
- Had serious discussions with students whose religious beliefs were very different from yours.
- Had serious discussions with students whose political opinions were very different from yours.
- Had serious discussions with students from a country different from yours.

DIRECTIONS: In your experience at this college during the current school year, about how often have you done each of the following?

- | | |
|--|----------------|
| Very often
Often
Occasionally
Never | Science |
|--|----------------|
- Memorized formulas, definitions, technical terms.
 - Tried to express a set of relationships in mathematical terms.
 - Tested your understanding of some scientific principle by seeing if you could explain it to another student.
 - Read articles (not assigned) about scientific theories or concepts.
 - Practiced to improve your skill in using some laboratory equipment.
 - Showed a classmate how to use a piece of scientific equipment.
 - Attempted to explain an experimental procedure to a classmate.
 - Went to an exhibit or demonstration of some new scientific device.
 - Completed an experiment or project using scientific methods.
 - Tried to explain to another person the scientific basis for concerns about pollution, recycling, alternative sources of energy, acid rain, or similar aspects of the world around you.

DIRECTIONS: If you are now living in a dormitory or fraternity/sorority, about how often have you done each of the following in that residence unit during the current school year? Indicate your response by filling in one of the spaces to the left of each statement. If you do not live in a campus residence, omit these items.

- | | |
|--|-------------------------|
| Very often
Often
Occasionally
Never | Campus Residence |
|--|-------------------------|
- Had lively conversations about various topics during dinner in the dining room or cafeteria.
 - Gone out with other students for late night snacks.
 - Offered to help another student (with course work, errands, favors, advice, etc.) who needed some assistance.
 - Participated in discussions that lasted late into the night.
 - Asked others for assistance in something you were doing.
 - Borrowed things (clothes, records, posters, books, etc.) from others in the residence unit.
 - Attended social events put on by the residence unit.
 - Studied with other students in the residence unit.
 - Helped plan or organize an event in the residence unit.
 - Worked on some community service or fund raising project with other students in the residence unit.

CONVERSATIONS

DIRECTIONS: In conversations with other students at this college during the current school year, about how often have you talked about each of the following?

- | | |
|--|-------------------------------|
| Very often
Often
Occasionally
Never | Topics of Conversation |
|--|-------------------------------|
- Current events in the news.
 - Major social problems such as peace, human rights, equality, justice.
 - Different life styles and customs.
 - The ideas and views of other people such as writers, philosophers, historians.
 - The arts — painting, theatrical productions, ballet, symphony, movies, etc.
 - Science — theories, experiments, methods.
 - Computers and other technologies.
 - Social and ethical issues related to science and technology such as energy, pollution, chemicals, genetics, military use.
 - The economy — employment, wealth, poverty, debt, trade, etc.
 - International relations.

In these conversations with other students, about how often have you done each of the following?

- | | |
|--|-------------------------------------|
| Very often
Often
Occasionally
Never | Information in Conversations |
|--|-------------------------------------|
- Referred to knowledge you had acquired in your reading.
 - Explored different ways of thinking about the topic.
 - Referred to something a professor said about the topic.
 - Subsequently read something that was related to the topic.
 - Changed your opinion as a result of the knowledge or arguments presented by others.
 - Persuaded others to change their minds as a result of the knowledge or arguments you cited.

READING/WRITING

During the current school year, about how many books have you read? Fill in one space in each column.

- Textbooks or assigned books
 Non-assigned books
- none
 - fewer than 5
 - between 5 and 10
 - between 10 and 20
 - more than 20

During the current school year, about how many written reports have you made? Fill in one space in each column.

- Essay exams in your courses
 Term papers or other written reports
- none
 - fewer than 5
 - between 5 and 10
 - between 10 and 20
 - more than 20

OPINIONS ABOUT COLLEGE

How well do you like college?

- I am enthusiastic about it.
- I like it.
- I am more or less neutral about it.
- I don't like it.

If you could start over again, would you go to the same college you are now attending?

- Yes, definitely
- Probably yes
- Probably no
- No, definitely

THE COLLEGE ENVIRONMENT

Colleges differ from one another in the extent to which they emphasize or stress various aspects of students' development. Thinking of your own experience at this college, to what extent do you feel that each of the following is emphasized? The responses are numbered from 7 to 1, with the highest and lowest points described. Fill in the space of whichever number best indicates your impression on this seven-point rating scale.

Emphasis on the development of academic, scholarly, and intellectual qualities							
Strong emphasis	7	6	5	4	3	2	1 Weak emphasis
Emphasis on the development of esthetic, expressive, and creative qualities							
Strong emphasis	7	6	5	4	3	2	1 Weak emphasis
Emphasis on being critical, evaluative, and analytical							
Strong emphasis	7	6	5	4	3	2	1 Weak emphasis
Emphasis on the development of vocational and occupational competence							
Strong emphasis	7	6	5	4	3	2	1 Weak emphasis
Emphasis on the personal relevance and practical values of your courses							
Strong emphasis	7	6	5	4	3	2	1 Weak emphasis

The next three ratings refer to relationships among people at the college. Again, thinking of your own experience, how would you rate these relationships on the seven-point scales?

Friendly, Supportive, Sense of belonging	Relationship with other students, student groups, and activities	Competitive, Uninvolved, Sense of alienation
7 6 5 4 3 2 1		
<hr/>		
Approachable, Helpful, Understanding, Encouraging	Relationships with faculty members	Remote, Discouraging, Unsympathetic
7 6 5 4 3 2 1		
<hr/>		
Helpful, Considerate, Flexible	Relationships with administrative personnel and offices	Rigid, Impersonal, Bound by regulations
7 6 5 4 3 2 1		

ESTIMATE OF GAINS

DIRECTIONS: In thinking over your experiences in college up to now, to what extent do you feel you have gained or made progress in each of the following respects? Indicate your response by filling in one of the spaces to the left of each statement.

<table border="0" style="width: 100%;"> <tr> <td style="text-align: right; padding-right: 5px;"> Very much Quite a bit Some Very little </td> <td style="padding-left: 5px;"> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> </td> </tr> </table> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Vocational training — acquiring knowledge and skills applicable to a specific job or type of work.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Acquiring background and specialization for further education in some professional, scientific, or scholarly field.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Gaining a broad general education about different fields of knowledge.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Gaining a range of information that may be relevant to a career.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Developing an understanding and enjoyment of art, music, and drama.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Broadening your acquaintance and enjoyment of literature.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Writing clearly and effectively.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Acquiring familiarity with the use of computers.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Becoming aware of different philosophies, cultures, and ways of life.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Developing your own values and ethical standards.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Understanding yourself — your abilities, interests, and personality.</p>	Very much Quite a bit Some Very little	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<table border="0" style="width: 100%;"> <tr> <td style="text-align: right; padding-right: 5px;"> Very much Quite a bit Some Very little </td> <td style="padding-left: 5px;"> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> </td> </tr> </table> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Understanding other people and the ability to get along with different kinds of people.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Ability to function as a team member.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Developing good health habits and physical fitness.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Understanding the nature of science and experimentation.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Understanding new scientific and technical developments.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Becoming aware of the consequences (benefits/hazards/dangers/values) of new applications in science and technology.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Ability to think analytically and logically.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Quantitative thinking — understanding probabilities, proportions, etc.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Ability to put ideas together, to see relationships, similarities, and differences between ideas.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Ability to learn on your own, pursue ideas, and find information you need.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Seeing the importance of history for understanding the present as well as the past.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Gaining knowledge about other parts of the world and other people—Asia, Africa, South America, etc.</p>	Very much Quite a bit Some Very little	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
Very much Quite a bit Some Very little	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>				
Very much Quite a bit Some Very little	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>				

APPENDIX B
UNDERGRADUATE CLASSES USED IN THIS STUDY

The following is a list of the undergraduate classes identified by the Office of Institutional Research that were used in this study.

College, School or Division	Level	Course Title	Course Number
Arts and Sciences	2000	Art History I	ARTA 2040
	4000	Elem Sch Art	ARTA 4320
	4000	Marine Biology	BISC 4867
	1000	Intro CJ System	CJCR 1100
	1000	Intro CJ System	CJCR 1100
	2000	Criminal Law	CJCR 2540
	3000	CR Jus Ethics	CJCR 3300
	2000	Public Speaking	SPCH 2300
	1000	Engl 2nd Lang	ENGL 1020
	1000	Comp I	ENGL 1110
	1000	Comp I	ENGL 1110
	1000	Comp I	ENGL 1110
	1000	Comp II	ENGL 1120
	1000	Comp II	ENGL 1120
	2000	U.S. to 1877	HIST 2010
	3000	History of Africa	HIST 3720
	1000	College Algebra	MATH 1010

	1000	Prob & Statistics	MATH 1080
	1000	Intro Sociology	SOAA 1020
	1000	Intro Sociology	SOAA 1020
	4000	Power with Poverty	SOAA 4257
	1000	Intro Social Work	SOWK 1010
	3000	Hum Beh/So Env I	SOWK 3000
<u>Applied Science and Technology</u>	1000	Career Mgmt Appl Hum Sc	AHSC 1510
	4000	Advanced Nutrition	AHSC 4447
	2000	Computer Organiz	CSCI 2150
	4000	Prog Lang Compil	CSCI 4817
	1000	Engineer Analysis	ENTC 1010
	3000	Man Society Tech	ENTC 3020
<u>Business</u>	2000	Princip of Acct I	ACCT 2010
	2000	Business Stats II	ECON 2080
	3000	Organ Mgmt	MGMT 3000
	3000	Mgmt Info Systems	MGMT 3220
	3000	Princip of Marketing	MKTG 3200
	4000	Organ Behavior	MGMT 4010

<u>Developmental Studies</u>	0800	Intro to Algebra	DVMA 0810
	0800	Fund Reading	DVRD 0800
<u>Education</u>	3000	The School II	CUAI 3301
	3000	Elem Mth Soc Stdy	CUAI 3420
	1000	Career Pl Life Sks	HDAL 1010
	2000	Adol Psyc	HDAL 2330
	4000	Preschl Prog	HDAL 4117
	1000	Fitness for Life	PEXS 1130
	4000	Kinesiolo	PEXS 4270
<u>Nursing</u>	1000	Maternity Nursing	FCNU 1010
<u>Public and Allied Health</u>	1000	Intro Commun Dis	CDIS 1010
	1000	Human Ecology	ENVH 1800
	3000	Human Anatomy	HSCI 3000
	3000	Human Physiology	HSCI 3020
	4000	Public and Health Ser	ENVH 4000

APPENDIX C
QUALITY OF EFFORT SCALES

Library Experiences Scale

The response choices for this scale are:

1 = never, 2 = occasionally, 3 = often, and 4 = very often. By summing the response choices for the 10 items on this scale, the lowest possible score was 10 and the highest possible score is 40. The items for this scale are:

Used the library as a quiet place to ready or study materials you brought with you.

Used the card catalogue or computer to find what materials there were on some topic.

Asked the librarian for help in finding material on some topic.

Read something in the reserve book room or reference section.

Used indexes (such as the Reader's Guide to Periodical Literature) to journal articles.

Developed a bibliography or set of references for use in a term paper or other report.

Found some interesting material to read just by browsing in the stacks.

Ran down leads, looked for further references that were cited in things you read.

Gone back to read a basic reference or document that other authors had often referred to.

Checked out books to read (not textbooks).

Experiences with Faculty Scale

The response choices for this scale are:

1 = never, 2 = occasionally, 3 = often and 4 = very often. By summing the response choices for the 10 items on this scale, the lowest possible score was 10 and the highest possible score was 40. The items on this scale are:

Talked with a faculty member.

Asked your instructor for information related to a course you were taking (grades, make-up work, assignments, etc.).

Visited informally and briefly with an instructor after class.

Made an appointment to meet with a faculty member in his/her office.

Discussed ideas for a term paper or other class project with a faculty member.

Discussed your career plans and ambitions with a faculty member.

Asked your instructor for comments and criticisms about your work.

Had coffee, cokes, or snacks with a faculty member.

Worked with a faculty member on a research project.

Discussed personal problems or concerns with a faculty member.

Course Learning Scale

The response choices for this scale are:

1 = never, 2 = occasionally, 3 = often, and 4 = very often. By summing the response choices for the 10 items on this scale, the lowest possible score was 10

and the highest possible score is 40. The items for this scale are:

Took detailed notes in class.

Participated in class discussions.

Underlined major points in the readings.

Tried to see how different facts and ideas fit together.

Thought about practical applications of the material.

Worked on a paper or project where you had to integrate ideas from various sources.

Summarized major points and information in your readings or notes.

Tried to explain the material to another student or friend.

Made outlines from class notes or readings.

Did additional readings on topics that were introduced and discussed in class.

Art, Music, and Theater Scale

The response choices for this scale are:

1 = never, 2 = occasionally, 3 = often, and 4 = very often. By summing the response choices for the 12 items on this scale, the lowest possible score was 12 and the highest possible score is 48. The items for this scale are:

Talked about art (painting, sculpture, architecture, artists, etc.) with other students at the college.

Gone to an art gallery or art exhibit on the campus.

Read or discussed the opinions of art critics.

Participated in some art activity (painting, pottery, weaving, drawing, etc.).

Talked about music (classical, popular, musicians, etc.) with some other students at the college.

Attended a concert or other music event at the college.

Read or discussed the opinions of music critics.

Participated in some music activity (orchestra, chorus, etc.).

Talked about the theater (plays, musicals, dance, etc.) with other students at the college.

Seen a play, ballet, or other theater performance at the college.

Read or discussed the opinions of drama critics.

Participated in or worked on some theatrical production (acted, danced, worked on scenery, etc.).

Student Union Scale

The response choices for this scale are:

1 = never, 2 = occasionally, 3 = often, and 4 = very often. By summing the response choices for the 10 items on this scale, the lowest possible score was 10 and the highest possible score is 40. The items for this scale are:

Had meals, snacks, etc. at the student union or student center.

Looked at the bulletin board for notices about campus events.

Met your friends at the student union or student center.

Sat around in the union or center talking with other students about your classes and other college activities.

Used the lounge(s) to relax or study by yourself.

Seen a film or other event at the student union or center.

Attended a social event in the student union or center.

Heard a speaker at the student union or center.

Played games that were available in the student union or center (ping-pong, cards, pool, pinball, etc.).

Used the lounge(s) or meeting rooms to meet with a group of students for a discussion.

Athletic and Recreation Facilities Scale

The response choices for this scale are:

1 = never, 2 = occasionally, 3 = often, and 4 = very often. By summing the response choices for the 10 items on this scale, the lowest possible score was 10 and the highest possible score is 40. The items for this scale are:

Set goals for your performance in some skill.

Followed a regular schedule of exercise, or practice in some sport, on campus.

Used outdoor recreational spaces for casual and informal individual athletic activities.

Used outdoor recreational spaces for casual and informal group sports.

Used facilities in the gym for individual activities (exercise, swimming, etc.).

Used facilities in the gym for playing sports that require more than one person.

Sought instruction to improve your performance in some athletic activity.

Played on an intramural team.

Kept a chart or record of your progress in some skill or athletic ability.

Was a spectator at college athletic events.

Clubs and Organizations Scale

The response choices for this scale are:

1 = never, 2 = occasionally, 3 = often, and 4 = very often. By summing the response choices for the 10 items on this scale, the lowest possible score was 10 and the highest possible score is 40. The items for this scale are:

Looked in the student newspaper for notices about campus events and student organizations.

Attended a program or event put on by a student group.

Read or asked about a club, organization, or student government activity.

Attended a meeting of a club, organization, or student government group.

Voted in a student election.

Discussed policies and issues related to campus activities and student government.

Worked in some student organization or special project (publications, student government, social event, etc.).

Discussed reasons for the success or lack of success of student club meetings, activities, or events.

Worked on a committee.

Met with a faculty advisor or administrator to discuss the activities of a student organization.

Experiences in Writing Scale

The response choices for this scale are:

1 = never, 2 = occasionally, 3 = often, and 4 = very often. By summing the response choices for the 10 items on this scale, the lowest possible score was 10 and the highest possible score is 40. The items for this scale are:

Used a dictionary or thesaurus to look up the proper meaning of words.

Consciously and systematically thought about grammar, sentence structure, paragraphs, word choice, and sequence of ideas or points as you were writing.

Wrote a rough draft of a paper or essay and then revised it yourself before handing it in.

Spent at least five hours or more writing a paper (not counting time spent in reading or at the library).

Asked other people to read something you wrote to see if it was clear to them.

Referred to a book or manual about style of writing, grammar, etc.

Revised a paper or composition two or more times before you were satisfied with it.

Asked an instructor for advice and help to improve your writing.

Made an appointment to talk with an instructor who had criticized a paper you had written.

Submitted for publication an article, story, or other composition you had written.

Personal Experiences Scale

The response choices for this scale are:

1 = never, 2 = occasionally, 3 = often, and 4 = very often. By summing the response choices for the 10 items on this scale, the lowest possible score was 10 and the highest possible score is 40. The items for this scale are:

Told a friend why you reacted to another person the way you did.

Discussed with other students why some groups get along smoothly, and other groups don't.

Sought out a friend to help you with a personal problem.

Elected a course that dealt with understanding personal and social behavior.

Identified with a character in a book or movie and wondered what you might have done under similar circumstances.

Read articles or books about personal adjustment and personality development.

Taken a test to measure your abilities, interests, or attitudes.

Asked a friend to tell you what he/she really thought about you.

Been in a group where each person, including yourself talked about his/her personal problems.

Talked with a counselor or other specialist about problems of a personal nature.

Student Acquaintances Scale

The response choices for this scale are:

1 = never, 2 = occasionally, 3 = often, and 4 = very often. By summing the response choices for the 10 items on this scale, the lowest possible score was 10 and the highest possible score is 40. The items for this scale are:

Made friends with students whose academic major field was very different from yours.

Made friends with students whose interests were very different from yours.

Made friends with students whose family background (economic and social) was very different from yours.

Made friends with students whose age was very different from yours.

Made friends with students whose race was very different from yours.

Made friends with students from another country.

Had serious discussions with students whose philosophy of life or personal values were very different from yours.

Had serious discussions with students whose religious beliefs were very different from yours.

Had serious discussions with students whose political opinions were very different from yours.

Had serious discussions with students from a country different from yours.

Science Scale

The response choices for this scale are:

1 = never, 2 = occasionally, 3 = often, and 4 = very often. By summing the response choices for the 10 items on this scale, the lowest possible score was 10 and the highest possible score is 40. The items for this scale are:

Memorized formulas, definitions, technical terms.

Tried to express a set of relationships in mathematical terms.

Tested your understanding of some scientific principle by seeing if you could explain it to another student.

Read articles (not assigned) about scientific theories or concepts.

Practiced to improve your skill in using some laboratory equipment.

Showed a classmate how to use a piece of scientific equipment.

Attempted to explain an experimental procedure to a classmate.

Went to an exhibit or demonstration of some new scientific device.

Completed an experiment or project using scientific methods.

Tried to explain to another person the scientific basis for concerns about pollution, recycling, alternative sources of energy, acid rain, or similar aspects of the world around you.

Topics of Conversation Scale

The response choices for this scale are:

1 = never, 2 = occasionally, 3 = often, and 4 = very often. By summing the response choices for the 10 items on this scale, the lowest possible score was 10 and the highest possible score is 40. The items for this scale are:

Current events in the news.

Major social problems such as peace, human rights, equality, justice.

Different life styles and customs.

The ideas and views of other people such as writers, philosophers, historians.

The arts - painting, theatrical productions, ballet, symphony, movies, etc.

Science - theories, experiments, methods.

Computers and other technologies.

Social and ethical issues related to science and technology such as energy, pollution, chemicals, genetics, military use.

The economy - employment, wealth, poverty, debt, trade, etc.

International relations.

Campus Residence Scale

The response choices for this scale are:

1 = never, 2 = occasionally, 3 = often, and 4 = very often. By summing the response choices for the 10 items on this scale, the lowest possible score was 10 and the highest possible score is 40. The items for this scale are:

Had lively conversations about various topics during dinner in the dining room or cafeteria.

Gone out with other students for late night snacks.

Offered to help another student (with course work, errands, favors, advice, etc.) who needed some assistance.

Participated in discussions that lasted late into the night.

Asked others for assistance in something you were doing.

Borrowed things (clothes, records, posters, books, etc.) from others in the residence unit.

Attended social events put on by the residence unit.

Studied with other students in the residence unit.

Helped plan or organize an event in the residence unit.

Worked on some community service or fund raising project with some other students in the residence unit.

Information in Conversations Scale

The response choices for this scale are:

1 = never, 2 = occasionally, 3 = often, and 4 = very often. By summing the response choices for the 6 items on this scale, the lowest possible score for this scale was 6 and the highest possible score is 24.

Referred to knowledge you had acquired in your reading.

Explored different ways of thinking about the topic.

Referred to something the professor said about the topic.

Subsequently read something that was related to the topic.

Changed your opinion as a result of the knowledge or arguments presented by others.

Persuaded others to change their minds as a result of the knowledge or arguments you cited.

APPENDIX D
ESTIMATE OF GAINS SCALE

The Estimate of Gains Scale of the CSEQ consists of students' estimates of their progress toward 23 educational goals. Students' self-report of their gains reflect students' beliefs about their achievement of important objectives of higher education (Pace, 1982). The directions for the Estimate of Gains scale ask students, "In thinking over your experiences in college up to now, to what extent do you feel you have gained or made progress in each of the following respects? Indicate your response by filling in one of the spaces to the left of each statement " (Pace, 1990).

Estimate of Gains Scale

The response choices for this scale are:
1 = very little, 2 = some, 3 = quite a bit, and 4 = very much. By summing the response choices for each of the 23 items on this scale, the lowest possible score was 23 and the highest possible score is 92. For clarification purposes for the variables included in a factor, each statement was given a number.

1. Vocational training - acquiring knowledge and skills applicable to a specific job or type of work.
2. Acquiring background and specialization for further education in some professional, scientific, or scholarly field.

3. Gaining a broad general education about different fields of knowledge.
4. Gaining a range of information that may be relevant to a career.
5. Developing an understanding and enjoyment of art, music, and drama.
6. Broadening your acquaintance and enjoyment of literature.
7. Writing clearly and effectively.
8. Acquiring familiarity with the use of computers.
9. Becoming aware of different philosophies, cultures, and ways of life.
10. Developing your own values and ethical standards.
11. Understanding yourself - your abilities, interests, and personality.
12. Understanding other people and the ability to get along with different kinds of people.
13. Ability to function as a team member.
14. Developing good health habits and physical fitness.
15. Understanding the nature of science and experimentation.
16. Understanding new scientific and technical developments.
17. Becoming aware of the consequences (benefits/hazards/dangers/values) of new applications in science and technology.
18. Ability to think analytically and logically.
19. Quantitative thinking - understanding probabilities, proportions, etc.
20. Ability to put ideas together, to see relationships, similarities, and differences between ideas.

21. Ability to learn on your own, pursue ideas, and find information you need.
22. Seeing the importance of history for understanding the present as well as the past.
23. Gaining knowledge about other parts of the world and other people - Asia, Africa, South America, etc.

VITA

Ramona Adele Milhorn Williams
2225 Boones Creek Road
Gray, Tennessee 37615

- EDUCATION: Public Schools, Sullivan County, Tennessee
 Sullivan East High School, June 1979
- East Tennessee State University, B.S.,
 May 1983 (Major: Political Science)
- East Tennessee State University, M.A.,
 May 1985 (Major: Counseling and
 Guidance)
- East Tennessee State University, Ed.D.,
 May 1996 (Emphasis: Educational
 Administration - Post Secondary and
 Private).
- EXPERIENCE: Graduate Assistant, Office of Student Affairs
 East Tennessee State University
 (August 1983 - May 1985)
- Residence Life Coordinator,
 Department of Housing
 East Tennessee State University
 (August 1985 - August 1989)
- Academic Counselor, Division of
 Developmental Studies
 East Tennessee State University
 (August 1989 - present)
- HONORS: Who's Who Among Students in American
 Universities and Colleges
- Omicron Delta Kappa
- Phi Delta Kappa
- Phi Kappa Phi