LIBERTY BAPTIST THEOLOGICAL SEMINARY

AN ANALYSIS OF THE IMPACT OF AGE ON THE ACADEMIC PERFORMANCE OF STUDENTS IN THE LIBERTY UNIVERSITY EXTERNAL DEGREE PROGRAM

A Thesis Project Submitted to
Liberty Baptist Theological Seminary
In partial fulfillment of the requirements
For the degree

DOCTOR OF MINISTRY

By

Frank Lyle King

Lynchburg, Virginia

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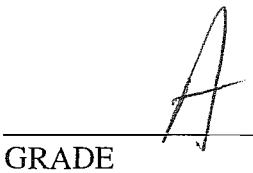
THESIS PROJECT APPROVAL SHEET



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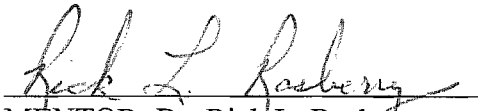

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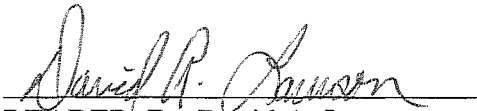

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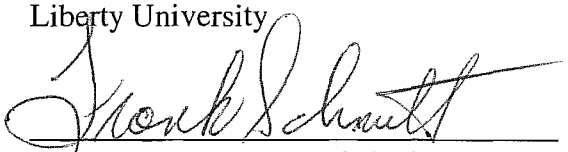

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ABSTRACT

AN ANALYSIS OF THE IMPACT OF AGE ON THE ACADEMIC PERFORMANCE OF STUDENTS IN THE LIBERTY UNIVERSITY EXTERNAL DEGREE PROGRAM

Frank Lyle King

Liberty Baptist Theological Seminary, 2000

Mentor: Dr. Rick L. Rasberry

The purpose of this project is to explore whether the age of a Liberty University External Degree Program (EDP) student impacts the degree of student success, as measured by the earned grade point average (GPA). EDP student GPAs were compared with Liberty University resident students GPAs. The EDP students consistently performed better than the resident students in all age groups examined. Demographic variables such as race, gender, socioeconomic status, marital status, military status, and amount of credits transferred to Liberty University were found not to be statistically significant factors in the performance of EDP students compared to resident students.

Abstract length: 99 Words.

CONTENTS

CHAPTER ONE

INTRODUCTION

The purpose of this research project is to explore whether the age of Liberty University External Degree Program (EDP) students impacts the degree of their success, as measured by their earned grade point averages (GPA).

According to current policy, students must be twenty-five years of age or older to enroll in Liberty University's EDP. Exceptions are made for military students because of the presupposition that they are more disciplined, have had more life experiences, and would therefore perform better. This exception to the policy was initiated because some literature in the field of distance education suggests that students that are internally motivated, have had more life experiences, and are more mature perform better academically.

Students under the age of twenty-five who agreed to participate in an age waiver study comparing their academic performance as measured by earned grade point average (GPA) with Liberty University resident students under the age of 25 were granted an age waiver enabling them to register in EDP courses (see Appendix A).

The study was conducted over the period of August 1999 - March 2000. One hundred and forty-four age waivers were granted to students ranging in age from 12 to 24. Twenty-four students officially withdrew from the study and fifty students had not officially enrolled in any classes or had not completed their courses prior to March 30 (see Appendix B). The remaining seventy participants in the study had completed 139 courses by March 30, 2000 (see Appendix C).

The questions to be answered were as follows:

1. Do Liberty University External Degree Program student's twenty-four years old and under perform academically as well as older students in the EDP?
2. Do Liberty University External Degree Program students twenty-four years old and under perform as well academically as Liberty University resident (on-campus) students of the same age?
3. Will there be a significant decline in the number of residential (on-campus) students if the EDP age restriction is lifted?

The Basis for the Choice of Topic

Liberty University's admission policy for the External Degree Program excludes students under the age of twenty-five, unless exempted because of military status.

Many younger students have shown an interest in Liberty's EDP. If the age restriction were lifted, the University would be able to enroll more students and expand both its academic and ministerial influence.

This study may demonstrate that revision of the current admission policy is warranted.

Statement of the Problem

Research indicates that many distance learning programs similar in size and scope to that of Liberty University do not have an age restriction. A random phone survey of admissions counselors, registrars, and assistant registrars of post-secondary educational institutions listed in *Peterson's Guide to Distance Learning Programs* (2000) was conducted. Only four of the forty-five institutions surveyed included an age restriction component in their admission policy (see Appendix D).

Changes in the academic market now necessitate reconsideration of the University's policy. According to projections by the *National Center for Educational Statistics*, post-secondary enrollment of students under the age of twenty-five will rise by twenty percent between 1995 and 2007; enrollment of persons twenty-five and over is anticipated to increase by only four percent during that

same period.[1] As this population is growing, there is a need to service these students and take advantage of this change in the market by not only recruiting these students to the resident program but also to the EDP.

There are a number of reasons that this current age restriction was incorporated into the EDP admission policy. The EDP was originally designed in 1985 as a degree completion program for students who were older, presumed to be more mature, and who found it difficult to attend classes in a traditional classroom setting due to family or job responsibilities.

> The mission of the External Degree Program (EDP) is to provide non-residential adults, who are at least twenty-five years of age, with Liberty University courses and programs deemed appropriate by the full-time faculty and departments. While EDP and residential offerings make necessary distinctions in student profiles, in methodologies of instruction (especially the use of distance electronic transmissions of data images) and the roles of time, physical place, and social context, the residential and EDP courses and programs are comparable in range, goals, and purpose.[2]

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[1] The National Center for Educational Statistics, Washington, DC 1999.

[2] Liberty University, *Liberty University External Degree 1999-2000 Catalog,* (Lynchburg, VA: Liberty University, 1999), 5.

The Limitations of the Project

It is not this author's intent to justify the existence of the External Degree Program or its mission. As stated earlier the purpose of this study is to explore whether the age of a Liberty University EDP student impacts the degree of student success, as measured by the earned GPAs.

Methodology Employed in the Research

The methodologies used in this research project are varied. Forty-five accredited liberal arts universities with distance learning programs were surveyed by telephone, in order to determine what policies, if any, they had regarding age. Only four universities surveyed had an age component in their admissions policy: Phoenix University, age 23; Thomas Edison State University, age 21; Regis University, age 21; and Atlantic Union College, age 21.

The academic performance of those students participating in the study was measured. Grade point averages (GPAs) for completed courses were calculated and compared with GPAs of first semester resident students in the same age group. The GPAs of older first-time EDP students were tracked and compared with the GPAs of resident students.

In addition, the GPAs of EDP age waiver students under the age of 18 were compared with those of resident students of the same age.

Hypotheses were developed by the author and tested with statistical *t*-Tests, as well as two-way and three-way analyses of variance (ANOVA) tests on demographic variables such as race, gender, socioeconomic status, marital status, military status, and number of credits transferred into Liberty University.

This study focused primarily on age as the determining factor of success. The other demographic variables were simply analyzed for statistical significance and possible further research.

Hypotheses Postulated by this Author

Five hypotheses have been proposed by the author to support this study:

Hypothesis 1. EDP students aged 24 and younger will perform as well as EDP students aged 25 and older as measured by their earned grade point averages (GPAs).

Hypothesis 2. EDP students aged 24 and younger will perform as well as Liberty University on-campus resident students, as measured by their GPAs.

Hypothesis 3. EDP students aged 17 and younger will perform as well as EDP students aged 18 to 24, as measured by their earned GPAs.

Hypothesis 4. EDP students aged 17 and younger will perform as well as Liberty University on-campus resident students, as measured by their earned GPAs.

Hypothesis 5. EDP students aged 17 and younger will perform as well as EDP students aged 25 and older, as measured by their earned GPAs.

Earned GPAs of the students under the age of 25 have been compared with the earned GPAs of EDP students over the age of 25. Earned GPAs of age waiver students and EDP students 25 and older were then compared to the earned GPAs of Liberty University on-campus resident students.

Review of Selected Literature

Bartlett, Thomas. "The Hottest Campus on the Internet." *Business Week* (October 20, 1997): 77-80.

In this study Bartlett found that distance learners using the Internet earned higher grades than traditional students earned.

Bernt, Frank M., and Allen C. Bugbee. "Study Practices and Attitudes Related to Academic Success in a Distance Learning Program." *Distance Education* 4, no. 1 (1993): 97-112.

The study found that age was not a significant factor in the success of distance education students.

Davis, Robert H., and Craig F. Johnson. "Evaluation of Regular Classroom Lectures Distributed by CCTV to Campus and Dormitory Classrooms: Final Report." (ERIC Document Reproduction Service no. 021 468), 1966.

Davis and Johnson found that distance learning students earned higher grades than traditional students.

Dille, Brian, and Michael Mezach. "Identifying Predictors of High Risk among Community College Telecourse Students." *The American Journal of Distance Education* 5, no. 1 (1991): 24-35.

Individual variables such as learning style, ethnicity, age, and gender were found to have limited effect on the success of distance students.

Gibson, Chere Campbell, and Alisha O. Graff. "Impact of Adults' Preferred Learning Styles and Perception of Barriers on Completion of External Baccalaureate Degree Programs." *Journal of Distance Education* VII, no. 1 (1992): 39-51.

A study that measured course completions, grades earned and degrees earned resulted in contradictory conclusions.

Gubernick, Lisa, and Ashlea Ebling. "I Got My Degree through E-Mail." *Forbes* 159, no 12. (June 16, 1997): 84-92.

Conducted by the University of Phoenix, the study concluded that students who took courses via the Internet scored from 5% to 10% higher on standardized achievement tests than did students in campus classrooms.

Hines, Richard A, and Deborah B. Hulse. "Two-Way Interactive Television: An Emerging Technology for University Level Business School Instruction." *Journal of Education for Business* 71, no. 2 (February 1966): 74-76.

External degree students in a Master of Business Administration program had their final grades compared

with resident Master of Business Administration students and it was found that the distant learners performed better than the resident students.

Leedy, Paul D. *Practical Research Planning and Design,* 6th ed. Upper Saddle River, NJ: Merrill/Prentice Hall, 1997.

This book on statistical analysis explains why using the analysis of variance (ANOVA) is the most powerful test for Hypotheses testing for two or more groups.

Moore, Michael G., and Greg Kearsley. *Distance Education: A Systems View.* Belmont, CA: Wadsworth Publishing, 1966.

This study found that there is insufficient evidence to support the idea that classroom instruction is the optimum delivery method. It supported the fact that instruction at a distance can be as effective as classroom instruction. The absence of face-to-face contact is not in itself detrimental to the learning process; design and delivery of a course are more important than face-to-face or distance learning format.

Pool, Patricia, "Teaching via Interactive Television: An Examination of Teaching Effectiveness and Student Satisfaction." *Journal of Education for Business* 72, no. 2 (November 1966): 78-81.

Motivation was suggested as the determining factor in distance learning students earning higher grades than traditional resident students earned.

Powell, Richard, Colleen Conway, and Lynda Ross. "Effects of Student Predisposing Characteristics on Student Success." *Journal of Distance Education* V, no. 1, (1990): 5-19.

Previous research attempting to measure the relationship of a particular demographic characteristic such as age to student success as measured by grades earned has resulted in contradictory conclusions.

CHAPTER TWO

BIBLICAL BASIS FOR THE PROJECT

Where are the beginnings of biblical education? One needs only to look in the book of Genesis to find the answer.

The home has been the most important educational agency on earth since the Garden of Eden, and the home has remained the center of the Hebrew educational experience. To this day a young Hebrew child is taught from infancy the famous *Shema* passage of Deuteronomy, "Hear, O Israel: The LORD our God is one LORD: And thou shalt love the LORD thy God with all thine heart, and with all thy soul, and with all thy might" (Deut. 6:4-5 AV).

Education has always been extremely important to the Hebrew people. The centricity of their education is theistic and their curriculum is firmly rooted in the Scriptures.

Even before the law was given to Moses at Sinai it was essential for Hebrew families to teach their children to understand the nature of their God. It was the primary role of the father to teach his family about their God.

The Abrahamic Covenant

Hebrew education began with Abraham and the covenant. In Genesis, God made a covenant with Abraham that He would be Abraham's shield and his great reward (Gen. 15:1-21). In exchange for Abraham's obedience, God would bless Abraham with children and would make a great nation of his seed. Abraham was to worship and obey God and to teach his descendents about who God was. This is the beginning of the Hebrew educational tradition of the father's responsibility of teaching his family about God and his attributes.

For the Hebrew people, the covenant was both a national and personal contract with God, resulting in each individual having an obligation to his God, his family, and his nation.

The teaching role for the Hebrew family, especially the father, takes on great significance in Deuteronomy, "And these words, which I command thee this day, shall be in thine heart: And thou shalt teach them diligently unto thy children, and shalt talk of them when thou sittest in thine house, and when thou walkest by the way, and when thou liest down, and when thou risest up. And thou shalt bind them for a sign upon thine hand, and they shall be as frontlets between thine eyes" (Deut. 6:7-9 AV). This passage gives the father the responsibility to oversee the education of his family. It also contains a hint as to the methodology

that he is to use. The Hebrew word *shanon* means "to whet or sharpen." It is used in the present tense and instructs parents to continually whet the intellectual appetites of their children, keeping their minds sharp by encouraging teachable opportunities through the use of questions and answers so that the children gain instruction in the faith of Israel.[3]

There is no mention of a classroom setting. Teaching the family about God was a family responsibility. Education for the Hebrews child was a lifelong process. The God of Abraham gave Hebrew parents the task of training the next generation, teaching them at every opportunity in the home, out of the home, at night, and in the daytime.

The Mosaic Law

The young Hebrew child heard and repeated the Torah until it was deeply ingrained into the very essence of his psyche and, as a result, defined who he was: a Hebrew. Lewis Sherill, in his book *The Rise of Christian Education,* describes the instructional character of the Mosaic Law:

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[3] Kenneth O. Gangel and Warren S. Benson, *Christian Education: Its History and Philosophy* (Chicago: Moody Press, 1983), 21-23.

> "Torah" is one of the great words of the Old Testament and of Judaism. It is from a root meaning to throw, or to cast as with lots; seeking to discover the divine will. Torah itself means teaching, that is instruction, the thing taught. It might be such instruction as that of a mother or father, or sage, or a poet. It may mean instruction as given through God's approved servants. At times it appears to mean the body of prophetic teachings. Torah often means special laws, as for example regarding a feast or the Sabbath; or it may mean codes of law. In these later uses the term Torah embodies the belief that the Law is God's answer, through an approved spokesman, to man's questions about rights and duties. This is well shown in the Exodus account of Moses' work as a judge and lawgiver. A similar conception of Law is set forth in other places. Torah, then, is content of teaching.[4]

The Priests

The priesthood in Israel began at the time of the Exodus. After the founding of the Aaronic order recorded in Exodus, there was an added educational responsibility given to the priests. Education of the Hebrews was brought to a new level as a result of this new priestly responsibility. Hebrew fathers were given even more responsibility in the training and education of his family and the father was expected to continue his own education from the priests. The Hebrew education was, and is still a lifelong process.

In addition to the offering of sacrifices and his task as the mediator between God and the congregation, the priest is also a teacher and interpreter of the law. "And

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[4] Ibid. p.22.

they shall teach my people the difference between the holy and common, and cause them to discern between the unclean and the clean" (Ezekiel 44:23 AV).

The priests were responsible for teaching parents (at least until the synagogue schools of the post-exilic time appeared), and the father was responsible for the education of his family. The home was never displaced as the central place of instruction; it was only supplemented by the work of the priests. The father was to teach the family about the nature of God, and the family home was the main schoolyard for this lifelong process of education.

In the Tabernacle era, the education program consisted of much more than a spiritual or moral education. There was instruction in ethics, civil law, and the relationship of family to family, tribe to tribe, and the nation of Israel to other nations of the world.[5] This philosophy of education has carried over to this day and is a primary principle of Christian education.

Paul A. Kienel, in his book *The Philosophy of Christian School Education,* states a fundamental principle of Christian education: "The Christian philosophy of education is based on the conviction that knowledge of the Bible and of Jesus Christ is essential to the development

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[5] Ibid. p.23.

and growth of the individual in matters physical, mental, social and spiritual."[6]

The Judges

Because there was no consistent central source of authority during the period of the judges, survival became the main objective of the Hebrew family. Emphasis on education hit an all time low because of this lack of central authority. All forms of cultural and educational development suffered during this time period, yet the good Hebrew father still upheld his responsibility and continued to teach his family about God.

The Monarchy

It was clear in Jewish law that a father must explain the great Jewish festivals to his son. When a son asked the meaning of the testimonies, the statutes, or the judgments, the father had to explain their significance. Not only were these great festivals of historical significance, but they had an agricultural significance as well, marking the cycle of an agricultural year.

To prepare for the temple that his son Solomon would build, King David completed a system of Levitical services

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[6] Paul A. Kienel, *The Philosophy of Christian School Education* (Whittier, CA: Association of Christian Schools International Press, 1978), 18.

for the Israelites, assigning thirty-eight thousand Levites into various jobs and responsibilities and training singers and minstrels, temple servants, and doorkeepers.

David's life example may have been his greatest contribution to godly education. He contrasts sin and grace by his own human frailties in his continual conflict as a fallen, sin-burdened man, who experiences the love and grace of a forgiven man with the joy of a personal relationship with God to a greater degree than any other individual of the Old Testament.

Purpose of Biblical Education

The purpose of Christian or biblical education is to teach students who they are and what they are intended to become in the plan of God. It is to teach students truth and that nothing is true outside of God's truth. Frank E. Gaebelein writes in his book, *The Pattern of God's Truth,* "Christian truth embraces all truth and nothing is true outside the scope of Christianity."[7]

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[7] Frank E. Gaebelein, *The Pattern of God's Truth* (New York: Oxford University Press, 1951), 56.

Mission of Liberty University

The mission of Liberty University is "to produce Christ-centered men and women with the values, knowledge, and skills required to impact tomorrow's world.

"The mission is carried out for resident students, through a rigorous academic program and structured environment. It is carried out for external students in a comparable academic program but without the structure of the resident community."[8]

As a staff member of Liberty University's External Degree Program (EDP), the author interacts with students on a daily basis and is often told that the reason students want to enroll for courses through Liberty's EDP is the Christian influence that pervades Liberty's courses.

One of the goals of the University is to teach Christian values to its students, thereby influencing them to be better Christian witnesses and leaders in the vocations that they choose. This can be accomplished through education, the process of teaching and learning values, knowledge, and skills that allows the freedom to grow and change freely. When both the instructor and student are properly related to God and each other through Christ, there is more effective spiritual, intellectual,

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[8] Liberty University, *Liberty University 1999-2000 Catalog,* (Lynchburg, VA: Liberty University, 1999), 5.

moral, social, and physical growth. Students learn to value themselves and others through truth in the Scriptures, in nature, in history, and in Jesus Christ.

Liberty University's Chancellor, Dr. Jerry Falwell, states that the goal of Liberty University is "to train up young champions for Christ." He often quotes Proverbs 22:6: "Train up a child in the way he should go; and when he is old, he will not depart from it" (Prov.22:6 AV).

It is Liberty University's mission and philosophy to train up young champions for Christ, whatever their chosen vocation. The External Degree Program is a vehicle to accomplish this mission.

Cunningham states that God gives children a threefold desire: "to be", "to know," and "to do." Liberty University builds upon this desire to help them develop into mature adults who are (to be) conformed to the image of Christ (Romans 8:32), who know the truth that makes them free (John 8:32), and who do that good and acceptable and perfect will of God (Romans 12:1-2).[9]

In John 18:38, Pontius Pilate asked Jesus, "What is truth?" (AV) Jesus did not answer Pilate. However, before, as Jesus prayed in the garden, He stated, "Thy word

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[9] James D. Cunningham and Anthony C. Fortosis, *Education in Christian Schools: A Perspective and Training Model.* (Whittier, CA: Association of Christian Schools International Press, 1987), 131-133.

is truth" (John 17:17 AV). Liberty University holds to the philosophy that the Bible is what it says it is--the truth. Truth is the standard for all academic subjects taught at Liberty University, and the philosophy that is adhered to at Liberty University is that there is no higher truth than biblical truth.

It is the mission of Liberty University to impact the world for Christ through Christian higher education. The External Degree Program offers an opportunity to greatly increase the breadth of that influence by "training champions" who are not physically on the campus. Its non-traditional approach has solid, biblical roots; however, it is incumbent upon the institution to maintain the integrity and quality of the education it offers at a distance. It is just this responisibility that necessitates the present study.

CHAPTER THREE

HISTORY AND FUTURE OF DISTANCE EDUCATION

Definition of Distance Education

In order to understand the nature of this study, it is important to have a working knowledge of what distance education is and to have a concept of its historical roots and development.

Randy Garrison proposed three criteria that define distance education: (1) the majority of educational communication between (among) teacher and student(s) occurs noncontinuously; (2) two-way communication is established between (among) teacher and student(s) for the purpose of facilitating and supporting the educational process; and (3) technology is used to mediate the necessary two-way communication.[10]

Desmond Keegan expands this definition by including six additional elements: (1) separation of teacher and learner; (2) influence from an educational

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[10] Randy D. Garrison, "Distance Education," in *Handbook of Adult and Continuing Education,* eds. Sharon Merrium and Phyliss Cunningham (San Francisco: Josey-Bass Publishers, 1989), 222.

organization, which distinguishes it from private study; (3) using modern technical data media to unite teacher and learner and carry the educational content; (4) providing two-way communication, so that the student may benefit from and even initiate dialogue; (5) the possibility of occasional meetings for both didactic and socialization purposes; and (6) participation in an industrialized form of education from other forms.[11] In addition, Keegan favors the term "distance education" over "distant learning," placing the focus on the education rather than on the student.

In the proposed regulations in the Higher Education Reauthorization Act (1999), the Federal government defines distance education as "an educational process that is characterized by separation, in time or place, and between the instructor and student. The term may include courses offered principally through the use of: (1) television, audio, or computer transmission, such as open broadcast, closed circuit, cable, microwave, or satellite transmission;

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[11] Desmond Keegan, "Problems in Defining the Field of Distance Education," *The American Journal of Distance Education* 2 (1988): 4-11.

(2) audio or computer conferencing, (3) video cassettes or discs; or (4) correspondence."[12]

Greville Rumble, in his definition of distance education, concludes that a teacher must be involved with students, materials, and a contract that defines the roles between teacher and students and the institution. Distance education can involve face-to-face (video in real time) or independent instruction. The student is given guidance and ready access to instruction. Materials may take several forms and need not be designed exclusively for distance education.[13]

To summarize, "The transaction which we call distance education is the interplay between people who are teachers and learners."[14] Two basic criteria are assumed: (1) students and teachers are separated by distance (geographical, temporal, and contextual) and (2) technology is used to lessen the distance barrier.[15]

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[12] Joyce S. Crouse, "Distance Education and Accreditation," *Journal of Family and Consumer Sciences* 91 (March 1991): 134.

[13] Greville Rumble, "On Defining Distant Education," *The American Journal of Distance Education* 3 (February 1989): 8-21.

[14] Michael G. Moore and Greg Kearsley, *Distance Education: A Systems View.* (Belmont, CA: Wadsworh Publishing, 1996): 200.

[15] Russell A. Dusewicz and Edward M. Patrick. *An Evaluation of Teleteaching in Pennsylvania 1987-1988*

Historical Perspective of Distance Learning

Since the 1920s, advances in communication technology have had a dramatic affect on instructional delivery methods and modes of communication. The 1920s saw radio communication as a very popular mode of communication. The 1930s and 1940s saw the advent of experimental television, and in the 1950s an explosion of television courses occurred.

Satellite technology in the 1970s and 1980s brought distance education courses into the homes of millions of people throughout the world, especially in Europe. Rapid advances in the field of computer technology are continually changing the face of distance education. Tens of millions of people throughout the world are now able to access distance learning courses via the Internet.[16]

Self-improvement is a tradition that can be traced back to the eighteenth century in the United States. In 1727, Benjamin Franklin formed the Junto, a discussion club that explored intellectual concerns and topics such as philosophy, politics, and morals. The founding of the American Philosophical Society, the Franklin Institute, the

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Philadelphia: Research for Better Schools, Inc., 1988 [database online]; available from ERIC, ED 388 314.

[16] Janell P. Klesius and Susan Homan, "The Internet and Education," *International Journal of Instructional Media* 24 (March 1997): 2.

first American public library, and the University of Pennsylvania all began as a result of discussions at this club. By his example and writings, Benjamin Franklin has influenced the American attitude toward continuing education as has no other person.[17] "Franklin, beyond all other early American heroes, has claim to being a patron saint of adult education."[18]

The American nineteenth century saw the growth of literary societies, mechanics' institutes, and religious camp meetings. "The signing into law of the Morrill Land Grant Act of 1862 guaranteed land for the establishment of universities in each state. By 1863, thirty-one states had provided guaranteed land for state universities."[19] The twentieth century saw the growth of land grant colleges and the community college concept

The term "distance education" is relatively new; however, the concept of "learning at a distance" is not. Learning at a distance first appeared in England, Germany, Sweden, and the United States in the middle nineteenth

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[17] Malcolm S. Knowles, *A History of the Adult Education Movement in the United States* New York: Robert F. Krieger Publishing, 1977), 10-12.

[18] Hartley C. Gratten, *American Ideas about Adult Education* (New York: Bureau of Publications, 1959), 138-139.

[19] Ray Wahl Rohfeld, ed., *Expanding Access to Knowledge: Continuing Higher Education, NUCEA 1915-1990* (Washingon, DC: National University Continuing Education Association, 1990), 30-32.

century. Vocational training courses were provided to serve the demands of growing industrial economies and nations. Learning on one's own grew very popular. By the early twentieth century, colleges, universities, and proprietary institutes offered courses in many varied subjects. These early print-based correspondence delivery methods evolved into today's many faceted multi-presentational models through the advance of modern technology.

The earliest record of distance education in the United States was in the year 1728, when Caleb Philips sent weekly shorthand lessons to students in the Boston, Massachusetts area.[20]

Cambridge University is often credited with being the first university to develop a formal extension program through the establishment of an extramural teaching program in 1873.[21]

Illinois Wesleyan University began offering bachelor's, master's, and doctoral degrees through distance education as early as 1873, and by 1910, nearly 500 distant learners were seeking degrees from the University. The university's board of trustees eventually closed the

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[20] Borje Holmberg, *Distance Education: International Perspectives* (New York: St. Martins Press, 1983), 79.

[21] Rae Wahl Rohfeld, *Expanding Access to Knowledge: Continuing Higher Education*, NUCEA 1915-1990. (Washington, DC: National University Continuing Education Association, 1990), 21.

correspondence division because they were afraid that it overshadowed the college's main mission, the education of its on-campus students.[22]

The Chautauqua Movement

The Chautauqua movement began in 1874 with the establishment of a Methodist institute for Sunday School teachers. Its founders were the Reverend John H. Vincent, who became the superintendent, and a wealthy businessman named Lewis Miller, who became its first president. They believed that anyone who wanted to learn could learn and should be allowed to continue to learn regardless of age, gender, or position in life.

Prior to the advent of compulsory education in America, Sunday schools were the key educational centers. Chautauqua offered general and advanced educational summer courses for religious teachers that were equal to contemporary "normal courses" for public school teachers. Both religious and secular adult education was revolutionized.

In 1878, Chautauqua University's College of Liberal Arts was formed, and Chautauqua became the first institution in America to award academic credit for extension courses.

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[22] Harvey Fred Harrington, *The Future of Adult Education* (Washington, DC: Jossey-Bass, Inc., 1977), 15.

In 1878, Vincent created the first national adult education program and correspondence school in America, the Chautauqua Literary and Scientific Circle (CLSC).[23]

Chautauqua was the first university in America to offer extension and correspondence courses for college credit. The concept and implementation of summer sessions and the university press were also Chautauquan ideas.[24]

Vincent's work contains the basic elements of modern adult education theory; most noteworthy is his concept of lifelong learning. He believed that mature men and women are able to learn if given the opportunity and opportunities should be extended beyond formal schooling to anyone who wanted to learn.

Believing that life is education, John Vincent promoted the philosophy that adult learning should also examine social issues of the day. He was a free thinker who was ahead of his time. Vincent's main goal at Chautauqua was the democratization of education for adults, regardless of social class, age, or gender.[25] Because of his

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[23] Mark Rossman and Maxine Rossman, eds., *Facilitating Distance Education* (San Francisco: Jossey-Bass Publishers, 1995), 61.

[24] Robert K. Bonnell, "The Chautauqua University: Pioneer University without Walls, 1883-1898" (Ph.D. diss., Kent State University, 1998), 42.

[25] John H. Vincent, *The Chautauqua Movement,* (Boston: Chautauqua Press, 1886), 88.

philosophy and innovative contributions to adult education, John H. Vincent is often called the father of distance education in America.

In 1875 Chautauqua offered secular coursework beyond the "normal classes" for Sunday School teachers that were being offered through its institution. Additional classes in singing, kindergarten teaching, and Hebrew were taught to both public school teachers and the general public as well.

Many social movements were conceived at Chautauqua. The Women's Temperance Union (WTU) and the National Congress of Mothers, later known as the Parents and Teachers Association (PTA), were founded at Chautauqua.[26] By 1883, it became the first learned institution to offer a broad range of college courses and college degrees by mail.[27]

Popular and well-known professors and lecturers were routinely invited to teach and lecture at Chautauqua. The biggest names in politics lectured there, including six presidents of the United States: Ulysses Grant, William McKinley, Chester Garfield, William Harding, Franklin D. Roosevelt, and Theodore Roosevelt. Thomas Edison, Booker T. Washington, Henry Ford, and physician Karl Menninger also

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[26] John C. Scott, "The Chautauqua Movement: Revolution in Popular Higher Education," *The Journal of Higher Education* (July/August 1999): 389-412.

[27] Bonnell, p. 118.

spoke there. John D. Rockefeller, Sr., at that time the richest man in the world, was a quest lecturer, as were famous explorers such as Admiral Byrd and aviator Amelia Earhart. World-renowned entertainers regularly performed and lectured there, including Johann Sebastian Bach, who taught a course in music theory at Chautauqua.

In 1904, Keith Vawter developed a nine-day program that began the Chautauqua circuits. Traveling companies carried packaged programs by trains, trucks, and automobiles to rural communities in the summers of 1904 through 1932. In 1921, nearly one hundred circuits reached nearly 10,000 communities in the United States and Canada, with over forty five million season tickets sold that year.[28] At their zenith in 1924, one out of every eleven Americans saw the traveling Chautauqua companies; over thirty-five million tickets were sold in the summer of 1924, and about the same number of tickets were sold that winter season as well.

Modern Day Concept of Distance Education

The modern day concept of distance education is attributed to William Rainey Harper, president of the University of Chicago from 1891 to 1906. In 1892, Harper organized and developed the Division of Correspondence

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[28] Theodore Morrison, *Chautauqua: A Center for Education, Religion, and the Arts in America* (Chicago: University of Chicago Press, 1989), 181.

Studies for the university, which included five departments: lecture studies, class studies, correspondence teaching, library training, and the university press.[29]

Chautauqua served as the model for the University of Chicago's extension program, summer schools, and university press.

The University of Chicago

William Rainey Harper was a professor of Semitic languages at Yale University while he directed the nationally publicized Chautauqua University. John D. Rockefeller, Sr., the richest man in the world at that time, recruited Harper to become the president of the University of Chicago, a private Baptist institution.

Rockefeller gave the university a gift of two and one half million dollars and allowed Harper a free hand in regard to the development of the university. With this gift and the corresponding "hands-off policy" by Rockefeller, Harper was able to mold and build a new University of Chicago that was both innovative and far-sighted. "No episode was more important in shaping the outlook and

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[29] Borje Holmberg, *Theory and Practice of Distance Education.* (New York: Routledge Press, 1981), 12.

expectations of American higher education during these years than the founding of the University of Chicago."[30]

Harper used Chautauqua as a model when he developed and organized the University of Chicago's summer schools and extension programs in 1892. He divided the year up into four academic quarters, to include a summer quarter. He also borrowed from Chautauqua the concept of a major and minor area of study.

The University extension served adults in the Chicago area as well as students from around the world, regardless of their gender, social class, or age. The University of Chicago offered the first evening class for college credit in America through its extension program.[31]

As a result, the "Chicago Model" became world-renowned. Many other universities, junior colleges, and high schools in the United States and around the world adopted correspondence study as a legitimate extension of their institutions.

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[30] Frederick Rudolf, *The American College and University: A History* (New York: Robert Krieger Publishing, 1962), 349.

[31] Samuel Cook, "Origins of Evening Undergraduate Education in Chicago," *Journal of Midwest History of Education Society* (1995), 180-181.

The University of Wisconsin

The University of Wisconsin began offering extension courses in 1891. The University of Wisconsin was built upon its popular and highly successful public service institutions, the farmer's institutes.

The university offered courses for college credit in medical service fields such as nursing. It also set up vocational schools, organized state conferences for adults, and booked lectures and concerts in the Chautauqua mold.

The University's faculty included such famous persons as economist Richard T. Ely, who had previously taught at Johns Hopkins University. Ely was a Chautauquan who was recruited to help organize statewide extension courses. He was appointed the founding director of the School of Economics, Political Science, and History, in order to help students prepare for civil service positions in the state. Ely became instrumental in providing faculty advisory services for the state government. The university advised state officials on social legislation and social responsibility. This public service philosophy became known as "The Wisconsin Idea," and drew national and international attention. Many other state universities incorporated the "Wisconsin Idea" and elevated public service as a core mission equal to teaching and research at the university.[32]

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[32] Harrington, p. 18.

The University of Minnesota

Another prominent institution that was influenced by the Chautauqua ideal of public service is the University of Minnesota. George E. Vincent, the son of Chautauqua co-founder John H. Vincent, was recruited from the University of Chicago, where he served as an administrator for William Rainey Harper, to become president of the University of Minnesota. There he established a statewide extension program funded by the state legislature. He also oversaw the building of a first class medical school. As a result, the University of Minnesota is now one of the top medical schools in the world, with an affiliation with the Rochester Mayo Clinic. The university has an excellent reputation as a research institute, as well as being a public service institution. The University of Minnesota has been able to successfully combine aspects of education, teaching, research, and public service, all Chautauquan concepts.

Distance Education Today

Approximately two-thirds of the 3,200 accredited four-year colleges and graduate schools in the United States now supplement their campus offerings with classes via the Internet, live satellite feeds, cable television,

videoconferencing, and videotape courses.[33] Approximately seven million people are enrolled in distance learning courses. More than 90 percent of companies in America offer tuition reimbursement for distance learning courses.[34]

Students over the age of twenty-five currently make up the vast majority of students in distance learning programs. A 1992 study of students in the University of Wisconsin's External Degree Program found that 80.3% of the students were between the ages of twenty-five and forty-five.[35] Borje Holmberg's 1995 study of three decades of data on demographic and situational characteristics found that the age group of twenty-five to thirty-five was the largest and most prevalent in most external degree programs.[36] This data is consistent with the typical Liberty University EDP student.

The majority of distance learners are adults who are older than the traditional resident undergraduate student.

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[33] Robyn D. Clarke, "Going the Distance," *Black Enterprise*, April 1999, 114.

[34] Ibid.

[35] Chere Campbell Gibson., and Alisha O. Graff, "Impact of Adults' Preferred Learning Styles and Perception of Barriers on Completion of External Baccalaureate Degree Programs," *Journal of Distance Education* VII (July 1992), 39-51.

[36] Borje Holmberg, *Theory and Practice of Distance Education*. New York: Routledge Press, 1981. 15.

They generally return to education for identifiable reasons such as preparing for new jobs, to qualify for job promotions, to meet employer expectations, or to finally complete a college degree. In many cases, returning learners are goal-oriented (i.e., intend to earn a degree or certificate), rather than simply learning for the sake of learning. For those adults who lead busy lives, education often competes with the responsibilities of job and family.[37]

One ten-year study found that over 70 percent of distance learners saw distance education as a way of combining school with family and job responsibilities. They also indicated that they wanted to continue their education but lacked the time for class attendance. Over half of the respondents indicated that they enrolled in distance education courses so they would be able to minimize travel.[38] Another study determined that students take courses through distance education because of convenience,

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[37] Chere Campbell Gibson, *Supporting Learners at a Distance from Inquiry through Completion "Distance Learners in Higher Education."* (Madison WI: Atwood Publishing, 1998), 89.

[38] Leonard W. Miller, "Work Force Development through Distance Learning," *New Directions for Community Colleges* 19 (March 1991), 64.

personal constraints, flexibility of time, distance to campus, and monetary savings.[39]

Although students like the flexibility offered by distance learning, both students and the general public continue to be concerned about the quality of the education.

Ready access to the Internet has transformed distance learning from a correspondence school approach to a high quality educational option offered by many reputable, fully accredited institutions offering two-year, four-year, and graduate college degrees, including doctoral and professional degrees.

Many students are concerned about accreditation and credit transfer issues. Though distance education may be ideal for a degree completion format, the question remains as to whether it is appropriate for students under the age of twenty-five who want to complete their entire degree through distance education.[40]

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[39] Sue Y. Hyatt, *Developing and Managing a Multi Modal Distance Learning Program in the Two Year Colleg*e. Paper presented at the 14th Annual International Conference of the National Institute for Staff and Organizational Development on Teaching Excellence and Conference of Administrators, Austin, TX, May 1992. ERIC, ED 349 068.

[40] Sammuel Levine, "Desktop Degrees," *Telephony* 232 (May 1997), 50.

Validity of Distance Education

There has been much literature published proving the validity of distance learning. The research shows that distance learners perform as well, or better than, students enrolled in traditional classroom courses.

> In many situations extension education can provide learning experiences that are superior to the equivalent experiences on a campus. Distance learning can provide learning opportunities that are closer and more intimately linked to the practical applications and the realistic contexts which make learning more meaningful. Those who plan and manage distance learning should generally start with the assumption that what is intended is a superior and more intense learning opportunity-certainly not some make-shift substitute.[41]

Robert Davis and Craig Johnson conducted a study in 1966. They compared the average class grades for students who were enrolled in introductory sociology and psychology courses in traditional classrooms to those of students who studied the material through distance learning using CCTV carried to campus classrooms and dormitory rooms. The study determined that the distance learning students earned higher grades.[42]

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[41] Ted Ward, *Integrity of Method and Objective: Part 1.* Transcript of an Address to ACCESS at the AABC/ABCC Conference, New York, 1994.

[42] Robert H. Davis, and Craig F. Johnson, *Evaluation of Regular Classroom Lectures Distributed by CCTV to Campus and Dormitory Classrooms: Final Report.* Available from ERIC ED 021 468. (New York: Prentice Publishing, 1966).

Two studies in 1996 and 1997 comparing distance learners' final grades with those of traditional classroom students found the distance learners performed better than the traditional classroom students.[43,44]

These studies, conducted over a period of four decades with different forms and levels of technology, have proven the reliability and validity of distance education.

Technology has consistently been improving from year to year; the advent of interactive computers is now a reality, and the concerns of the past regarding face-to-face interaction have been alleviated to some extent.

Although most research has concluded that television and videotaped distance learning courses are as effective as or better than traditional face-to-face classroom instruction, as measured by student satisfaction and student final grade results, there has been little research to determine the effectiveness of newer distance learning options. One significant study recently published by the University of Phoenix shows remarkable positive results. In this study, the University of Phoenix administered

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[43] Richard A. Hines and Deborah B. Hulse, "Two-Way Interactive Television: An Emerging Technology for University Level Business School Instruction," *Journal of Education for Business* 71 (February 1996): 74-76.

[44] Tomas Bartlett, "The Hottest Campus on the Internet," *Business Week,* 20 October 1997. 77-80.

standardized tests to students who took classes via the Internet and to students in on-campus classes. Students who took the Internet classes scored from five to ten percent higher on standardized achievement tests than did the students in the on-campus classes.[45]

In response to this finding, some have suggested that motivation is the reason for the difference. Distance learners, they suggest, tend to be older students whose experience has caused them to understand the value of the education they are receiving. Others theorize that distance learning students are able to retain more information and knowledge from the course material because they do not have the distractions that are associated with traditional classroom settings.[46] Regardless of the reason(s) for the difference, the fact remains, that the distance learners' standardized tests scores were significantly higher than those of the students who attended traditional classes.

Moore and Kearsley found that (1) there is insufficient evidence to support the idea that classroom instruction is the optimum delivery method, (2) instruction

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[45] Lisa Gubernick, "I Got My Degree through E-Mail," *Forbes* 16 June 1997, 84-92.

[46] Patricia Pool, "Teaching via Interactive Television: An Examination of Teaching Effectiveness and Student Satisfaction," *Journal of Education for Business* 72, no. 2 (November 1996): 78-81.

at a distance can be as effective as classroom instruction in bringing about learning, (3) the absence of face-to-face contact is not in itself detrimental to the learning process, and (4) what makes any course good or poor is a consequence of how well it is designed, delivered, and conducted, not whether the students are face-to-face with the instructor or learning at a distance.[47]

The Future of Distance Education

At a recent conference on Distance Learning, Christopher J. Dede, professor of Education and Information Technology and Engineering at George Mason University, made the statement concerning the future of virtual universities and traditional universities that, "It's much more expensive to build a building than a virtual building."[48]

Today there are approximately fourteen and one half million students in higher education, representing an increasing market that is complex in its makeup.

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[47] Moore and Kearsely, 200.

[48] Dan Carnevale, "Distance Education Can Bolster the Bottom Line, a Professor Argues," *The Chronicle of Higher Education* (22 October 1999): A60.

Traditional universities are simply not able to satisfy this new market.[49]

Peter Drucker, a noted management consultant, sees a gloomy future for the traditional university, predicting that within thirty years the traditional university will be obsolete. He postulates that the traditional university will not survive as a residential institution and that virtually all education will take place off campus and online. Drucker sees a future in which students will earn their degrees via computer and virtually all education will take place online in a distance format. He expresses the opinion that buildings are much too expensive, are hopelessly unsuited as their use is limited, and they are totally unnecessary. Drucker states that education is getting too expensive and big university campuses will not survive--they will become relics of the past. He notes that the cost of higher education has risen as fast as the cost of health care, and that without any visible improvement in either the quality or content, traditional education is in severe crises with traditional residential institutions pricing themselves out of the market. The cost of education is rising faster than inflation. He predicts that

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[49] Greg Kearsley and William Lynch, *Educational Technology: Leadership Perspectives* (Newark, NJ: Educational Technology Publications, 1994), 222.

residential colleges will not survive as institutions of higher learning.[50]

In his book, *The Emerging Worldwide Electronic University,* Parker Rossman endorses the prediction of "the end of the university as most Americans picture it--four happy years on a resident campus."[51]

Half of American students in 1990 were older than the traditional college age of 18 to 22. Many people are completing their college education or taking graduate and professional degrees on a part-time basis as commuters, completing their degrees over a span of several working years. Distance education is the ideal format for this new breed of student.[52]

Washington State's Higher Education Coordinating Board has recently asked the state legislature to increase spending for online education so the state can avoid constructing new buildings or campuses. The coordinating board's "2000 Master Plan for Higher Education," released in January, states web-based courses could absorb some of a

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[50] Peter Drucker, "Seeing Things as They Really Are," interview by Robert Lenzner and Stephen S. Johnson, (2 February 1997), *Forbes,* (10 March 1997): 122-128.

[51] Parker Rossman, *The Emerging Worldwide Electronic University: Information Age Global Higher Education* (Westport, CT: Greenwood Press, 1992), 7.

[52] Ibid.

projected 70,000 additional students - two times the number of students as enrolled in the universities of Washington. The master plan does not call for the formation of a virtual university, but it does call for an increase in the number of online courses offered and the use of the Internet to create a hybrid format for traditional courses.[53]

America's newest public university, Florida Gulf Coast University, located in Fort Myers, Florida, utilizes the latest and most innovative computers and technology. The university plans to save money on academic buildings and other facilities by serving one quarter of its students through distance learning. It has created an innovative financial structure in which it will receive only three-fourths of the capital money it would otherwise be entitled to under state guidelines and formulas. The university will serve students in the rapidly growing Fort Myers area of Florida with the aid of a powerful on-campus computer network and a library full of the latest electronic resources. Gulf Coast hopes to be a major influence in the emerging Southern Regional Electronic Campus, a distance-learning consortium of colleges throughout the south. It

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[53] Don Carnevale, "New Master Plan in Washington State Calls for More Online Instruction." *The Chronicle of Higher Education* 46 (4 February 2000): A50.

plans to be the first institution to offer a Bachelor of Arts degree in criminal justice through this consortium.[54]

The *Washington Post* reported in March 2000 that multi-billionaire Michael Saylor donated 100 million dollars as a down payment toward creating an online university that will offer Ivy League quality education at no charge to it's students. Saylor envisions online courses that will include lectures from the world's greatest geniuses and leaders from all areas of academia. Saylor, one of the world's wealthiest men (with a fortune estimated at 13 billion dollars) says that he has already discussed the idea with cabinet-level people, senators, and well-known educators, who have responded positively. The article further reports that Senator Ron Widen, a Democrat from Oregon, is examining federal education programs to see how they might support and promote this. Saylor states that "traditional universities might feel threatened, but they'll just have to get used to the idea."[55]

The cost of sending a student to a public university has risen from 9 percent of the median family income in 1985 to 20 percent in 2000. For private universities, the figure

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[54] Goldie Blumenstyk, "New University Tries to be a Model in Use of Technology." *The Chronicle of Higher Education* 44 (12 December 1997): A21-24.

[55] Cindy Loose, "Online Education to Be Free" *Washington Post Newspaper Online*, March 15, 2000, <http://www.washingtonpost.com> (3 April 2000).

has increased from twenty percent to forty percent.[56] The cost of education is rising dramatically. This, along with the possibility of Saylor's free university and the fact that technology is becoming more accessible to more students suggests that there may be more emphasis placed on distance learning as an alternative to traditional education.

Younger students are becoming more technologically savvy and computer literate as more public and private schools offer computer classes and make computers available for students to use. Distance learning is not limited to colleges and universities. There are now many accredited virtual high schools using the latest and best technology. As more students have computers in their homes and computer prices drop, this number may grow steadily year after year. Students use computers at school and at home, for work and for play. As a result, they are more technologically savvy and computer literate than their parents.[57]

These younger students spend hours on the Internet and in chat rooms. They are becoming psychologically conditioned to this format, and face-to-face interaction is becoming less important to them. "Many students entering

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[56] Peterson's Guide to Distance Learning. (Peterson's Princeton NJ: 1999). 7.

[57] Pamela Hodgson. "How to Teach in Cyberspace," *Techniques* 74 (1999): 34-36.

college during the next decade will be comfortable with technology and they will embrace new ways of learning, which universities will be able to rely on to relieve campus congestion."[58] Other states, including Texas, Massachusetts, Utah, and California, are looking to online courses to save space and construction money. Many universities are entering into alliances and consortiums to help bring down the cost of new technology and the costs associated with developing online courses.

An interesting survey of college freshmen was reported in the *Chronicle of Higher Education*. Freshmen students were found to be more technologically competent than in previous years. They also seem to have a working knowledge of new technology that benefits them in their educational endeavors. This is a real advantage to students who wish to continue their education via distance education. Questions that were asked of college freshmen include:[59]

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[58] Carnevale, New Master Plan in Washington State Calls for More Online Instruction. A50.

[59] *Chronicle of Higher Education*. The American Freshman: National Norms for Fall 1998. American Council on Higher Education and University of California at Los Angeles Higher Education Research Institute.

ACTIVITIES IN THE PAST YEAR:	Total	Men	Women
Was frequently bored in class	37.7%	39.5%	36.2%
Checked out a book from the library	18.7%	14.4%	22.4%
Played computer games	80.4%	85.3%	76.2%
Communicated via e-mail	64.9%	68.0%	64.2%
Used the Internet for research	82.9%	84.4%	81.6%
Participated in Internet chat rooms	54.2%	58.0%	51.1%
Had Internet use other than above	72.9%	79.3%	67.4%

This survey seems to indicate that younger students are better prepared for distance education than ever before. Interaction via chat rooms, e-mail, fax machines, telephones, and video conferencing has made face-to-face interaction less of an issue for these students.

Proponents of virtual universities point out that networked computing allows the replication of a classroom experience by creating virtual groups of students. This technology should make distance learning more attractive to many students. It may also help to overcome the problems perceived by some traditionalists that without face-to-face dialogue, educators will not be able to change students' attitudes and assumptions, and that students will not be as creative and will not learn to think critically.

Accreditation of Distance Education

Six U.S. regional accrediting associations assess the quality of curriculum and instruction at post-secondary educational institutions in the United States. These regional accrediting agencies are moving away from quantitative measurements of classroom facilities and library holdings which are largely irrelevant in a technology-based environment, and are moving toward looking at outcome measures that are neutral with regard to the mode of teaching and instruction, making distant education more attractive to the student.[60]

"In the past, a distance degree was seen as a low-quality substitute for the "real thing." But the advent of new and more sophisticated technology is changing the perception of distance learning. "Many companies realize that the only difference between a traditional degree and one earned online is the way in which it is earned."[61]

In 1999 the North Central Association of Colleges and Schools accredited Jones International University, the first completely virtual university in the United States. The same accreditation agency previously accredited National

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[60] Mary B. Goldstein, "Technology and the Law: What Every Community College Leader Needs to Know," *Community College Journal* 64 (February 1988): 31-36.

[61] Clarke, p,114.

Technological University, which relies on satellite delivery, and the College for Financial Planning, which uses only correspondence methods. They have also extended the accreditation of many traditional institutions to cover online courses and programs.[62]

Home-Schooled Students

More students each year are being home-schooled. Many of these students are performing just as well as, and in many cases better than, traditional in-class high school students. Many young adults are staying in their parents' home longer than did previous generations because of economic factors. While the cost of traditional education is rising beyond the economic reach of more and more families, distance learning tuition costs are becoming more competitive and reasonable. More students under the age of twenty-five are turning to distance formats to meet their educational needs.

A report prepared by a commission of twenty-four chief executive officers of state universities in 1996 describes a "learning society" in which education would be universally accessible and lifelong learning would be promoted among children and working adults alike.

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[62] Steven Crow, "Virtual Universities Can Meet High Standards," *The Chronicle of Higher Education* 46 (29 October 1999): B5.

Information technology, particularly for distance education, makes such universal access possible. The report recommends that public institutions make lifelong learning a part of their mission. It suggests that universities improve access to both traditional and distance education and form partnerships with elementary and secondary educators, businesses, and governments, to prepare children for a life of learning and to make education available to those in the work force.

Liberty University's Age Requirement

It has been suggested by some of the Liberty University EDP advisors and staff members that students under the age of twenty-five should be allowed to matriculate into Liberty's EDP.

Some of the previous research attempting to measure the relationship of a particular demographic characteristic such as age to student success, as measured by grades earned,[63] course completions, and degrees earned, has resulted in contradictory conclusions.[64] Yet other research has shown a positive relationship between success and a

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[63] Richard C. Powell, Colleen Conway, and Lynda Ross, "Effects of Student Predisposing Characteristics on Student Success," *Journal of Distance Education* V (January 1990): 5-19.

[64] Chere Campbell Gibson and Alisha O. Graff, 39-51.

student's age. The higher level of success of older students was shown to be a result of the student's increased maturity, self-discipline, life experience, and being financially responsible for their own education.[65]

The inconsistency found in the literature merits this study. The results may influence the possibility of admitting younger students into the EDP. Doing so could allow the university to increase its enrollment and provide a Christian education to more of the student population.

Student Characteristics

Student characteristics such as study habits, attitudes, perceptions, motivation, educational level, goals, time management, preferences, learning style, marital status, grade point average, gender, and age, have been examined. Most researchers have found no statistically significant effect on achievement or success in distance education courses.

Individual variables such as learning styles, ethnicity, age, and gender were found to have a limited effect on the success of distance students. Minorities and men tend to have slightly higher dropout rates.[66] Age was

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[65] Brian Dille and Michael Mazack. "Identifying Predictors of High Risk Among Community College Telecourse Students," *The American Journal of Distance Education* 5 (January 1991): 24-35.

[66] Ibid.

not a significant factor in determining a student's success in distance education; however, Bernt and Bugbee found that adult learners need more evaluative feedback than younger students do because they have not been in traditional classroom settings recently.[67]

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[67] Frank M. Bernt and Allen C. Bugbee, "Study Practices and Attitudes Related to Academic Success in a Distance Learning Program," *Distance Education* 4 (January 1993): 97-112.

CHAPTER FOUR

METHODOLOGY

Methodology Employed in the Research

The methodologies used in this research project and thesis are varied. As stated previously, the purpose of this study is to explore the impact of age on a student's performance in the Liberty University Eternal Degree Program (EDP). In the process of exploring the impact of age on academic performance, it was necessary to survey what the policy concerning age is at other accredited external degree programs. A telephone survey was conducted from the 17th to the 28th of January 2000. Sixty colleges and universities listed in the 2000 edition of the *Peterson Guide to Distance Learning Programs* were randomly selected and called. Forty-five were contacted.

The survey sample was limited to regionally accredited four-year liberal arts educational institutions listed in the *Peterson's Guide to Distance Learning Programs*, that have over one thousand students enrolled in their distance education programs and have little or no residency requirements. These limitations were chosen

because they match well with Liberty University's EDP profile.

Students under the age of 25 who wished to enroll in the Liberty University External Degree Program (EDP) were asked to sign an agreement to participate in the "Age Waiver Study." The study tracked participants and compared their success rates, as measured by GPAs, with EDP students over the age of 25 and with Liberty University resident students.

The students were tracked for two academic semesters. Their EDP files for summer and fall terms of 1999 have been gathered and sorted by age groups. Students over the age of twenty-five were grouped in ten-year increments: 25-34, 35-44, 45-54, and 55 and over. For the purpose of this study, the age groups for students under the age of twenty-five who were permitted to take courses were grouped by one-year increments: 12-24.

Demographic data supplied by the student in the age waiver questionnaire were analyzed to discover any correlation's that may be present.

The GPAs of resident students randomly chosen using the random numbers table were calculated and compared with the EDP age waiver study participants and with EDP students over the age of 25.

The GPAs of the different age groups have been analyzed using an analysis of variance (ANOVA), which is a

parametric procedure used to test the significance of differences between means. It is not restricted to two group procedures as is the *t*-Test, allowing a comparison of the means for three or more groups. One-way ANOVAs and two-way ANOVAs are appropriate statistical procedures for this study because they account for more variability than the *t*-Test.

ANOVA disseminates the total variability of a set of data into two components: (1) the variability resulting from the independent variability and (2) all other variability, such as individual differences and measurement unreliability. Variation between treatment groups is contrasted with variation within groups. If the differences between groups receiving different treatments are large relative to fluctuations within groups, then it is possible to establish the probability that the treatment is related to, or has resulted in, the group differences.[68]

Results of these statistical tests were used to determine the validity of the hypotheses stated by the author.

Other demographic variables that were self-reported on the age waiver questionnaire were analyzed using one-and

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[68] Paul D. Leedy, *Practical Research Planning and Design*, 6th ed. (Upper Dsaddle River, NJ: Merrill/Prentice Hall 1997), 252-268.

two-way ANOVAs to locate statistically significant correlation's.

The age waiver study incorporated descriptive statistics in the analysis of the data gathered. The data gathered is continuous data. The GPAs, which represent the mean of all course grades, as well as the medium, mode, variance, and standard deviations were calculated. Frequency distributions and the ranges of the GPAs were also noted for the age groups.

Looking at the range of GPAs will give a quick estimate of variability, representing the difference between the highest and lowest grade point average in an age group.

Calculation of the mode showing the measure of central tendency that occurs most frequently in the distribution of all grades in a particular age group has been calculated. This is the simplest and crudest measure of central tendency, but it is a quick estimate of the typical representative GPA and may be helpful in determining the mean and medium for the study of an age group.

The medium, representing the measure of central tendency that represents the midpoint of a distribution of GPAs, sometimes known as the 50th percentile, will also be calculated. This is useful, as extreme scores do not affect it.

The standard deviations were calculated to determine the dispersion of grade point averages around the mean GPA. The more the GPAs cluster around the mean, the smaller the standard deviation. In a normal, bell-shaped distribution, about two-thirds of the scores are within the range from one standard deviation below to one standard deviation above the mean.

Calculating the variance gives one a measure of dispersion of heterogeneity of a set of GPAs around the mean of a set, taking into account each GPA and its size and distance from the mean of its set. The variance is obtained by summing the squared deviations from the mean and dividing the sum by the number of scores.

A frequency distribution of the tabulated grade point averages of a group of students shows the frequency of each GPA. The range of GPAs is useful in that shows progressively the lowest to the highest grades earned by a particular student.

These measures of central tendency and variability were compared with those of the students in the age waiver study and also with those of students over the age of twenty-five in the EDP.

The GPAs of the different age groups were compared. Differences in gender grade point averages were determined in each age group of the EDP students in the study. This

helps to identify any statistically significant correlation's that may be occurring.

Limitation

Resident students taking EDP classes

Liberty University resident students who were taking EDP courses were not included in the study. As stated earlier the purpose of the study is to determine whether the age of a Liberty University EDP student impacts the degree of student success, as measured by the earned GPA. The author is looking at EDP students and comparing them with Liberty University resident students. To include into the study a hybrid of a resident student taking EDP courses is beyond the scope of this study. However, it is worth noting that historically many Liberty University resident students do poorly on EDP classes, they tend not to finish their EDP coursework and simply take the class over again on campus as a resident course.

CHAPTER FIVE

FINDINGS

Results of Phone Survey

The results indicated that of the forty-five randomly selected schools that responded, only four had an age restriction in their distance education programs: (1) Thomas Edison State College (Trenton, New Jersey)--21 years of age or older; (2) Regis University (Denver, Colorado)--21 years of age or older, with the additional stipulation that the student has been out of high school for at least three years; (3) The University of Phoenix (Phoenix, Arizona)--23 years of age or older; and (4) Atlantic Union College (South Lancaster, Massachusetts)--25 years of age or older.

Age Waiver Forms

One hundred and forty-four age waivers were granted to students whose ages ranged from 12 to 24. Twenty-four students withdrew from the study. Fifty students had not officially enrolled in any classes or had not completed their courses prior to the end of the study on March 30, 2000.

Seventy of the study participants completed a total of 139 courses by March 30, 2000, the end of the study. They received 22 A grades, 42 B grades, 35 C grades, 8 D grades, and 32 F grades (see Appendix E).

The 139 completed courses that these students ranging from age 12 to 24 completed represent an over all GPA of 2.16. Factoring out the four students aged 12 to 17 from the 24 year old and younger group so that the remaining students are aged 18 to 24 results in an over all GPA of 2.09 for the age group 18 to 24. The four students under 17 years of age earned a GPA of 2.75.

Results of Statistical Tests on Hypotheses

Four students under the age of 18 were included in the study: a 17 year-old-female who took one course received a B grade; a 16 year-old-female who took one course received a B grade; a 16 year-old-female who took one course received a C grade; and a 12 year-old-male who took one course and received a B grade. These four students took four courses and earned a combined GPA of 2.75.

The 139 completed courses that 70 students ranging from age 12 to age 24 represent an over all grade point average of 2.16. This has been compared with the over all GPA of first semester students from the Liberty University's

resident students aged 18 to 24 and their GPA is 2.00 and EDP students over the age of 25 who's GPA is 3.02.

The mean grade point average for EDP students aged 18 to 24 is 2.09, with a standard deviation of 1.27. The mean grade point average of students 17 and younger is 2.75 with a standard deviation of .50.

The population of EDP student's aged 25 and older is 118, representing a mean grade point average of 3.02 and a standard deviation of .77.

A one-way ANOVA was calculated on the three EDP age groups and LU resident students. Results indicate that there is a significant effect of age on grade point average of EDP students.

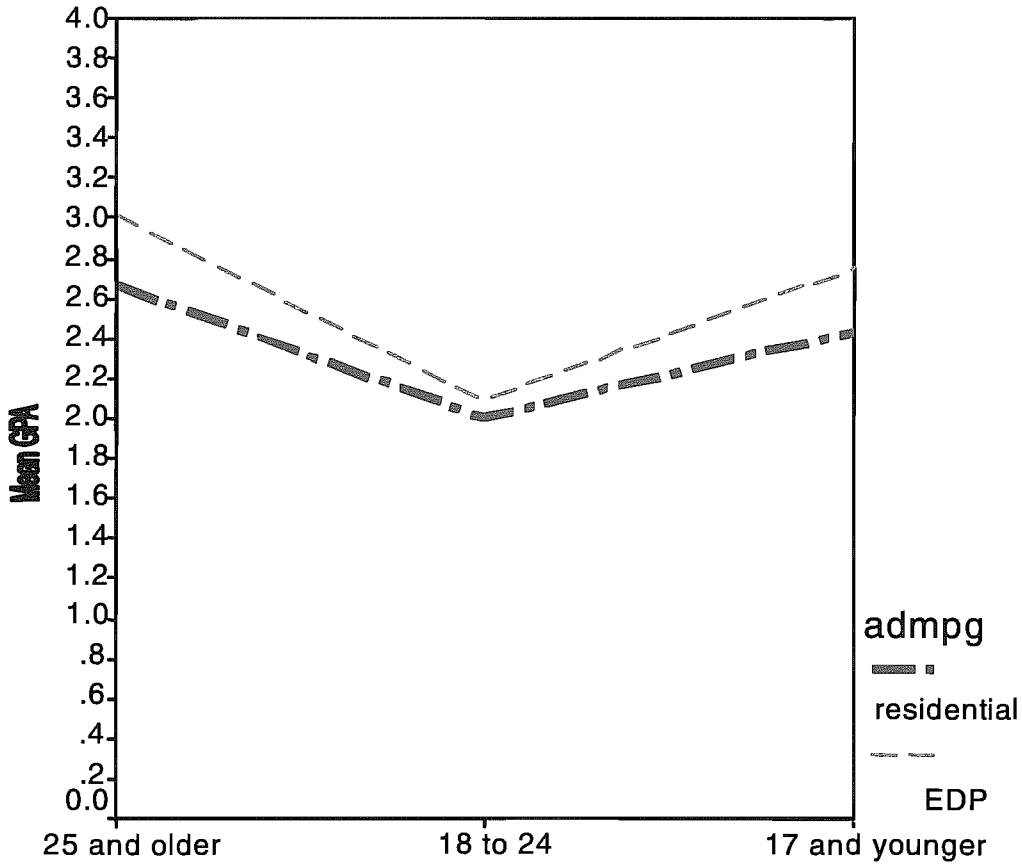
EDP students aged 25 and older earned GPAs (3.02), that are significantly higher than EDP students aged 18 to 24, (2.09), disproving hypothesis 1, that EDP students aged 24 and younger will perform as well as EDP students, aged 25 and older as measured by their GPAs.

EDP students aged 17 and younger earned GPAs (2.75), that were higher than the GPAs of EDP students aged 18 to 24, (2.09). Proving hypothesis 3, that EDP students aged 17 and younger will perform as well as EDP students aged 18 to 24 as measured by their earned GPAs.

The ANOVA indicated that students aged 17 and younger did not earn GPAs (2.75) that differed significantly from

the GPAs (3.02) of EDP student's aged 25 and older. This proves hypothesis 5, that EDP students aged 17 and younger will perform as well as EDP student's age 25 and older, as measured by earned GPAs.

Figure 1.
The Effect of Age and Admitting Program on GPA



External students consistently earn a higher GPA than residential students across all age groups, but not significantly so.

Students in both external and residential programs age 25 and older and age 17 and younger earn GPAs significantly higher than students age 18 to 24.

Students 25 and older earn GPAs only slightly higher than those of students 17 and younger in both the residential and external programs.

There is no significant difference in the GPAs of students in any age group based upon their admitting program proving hypotheses 2 and 4.

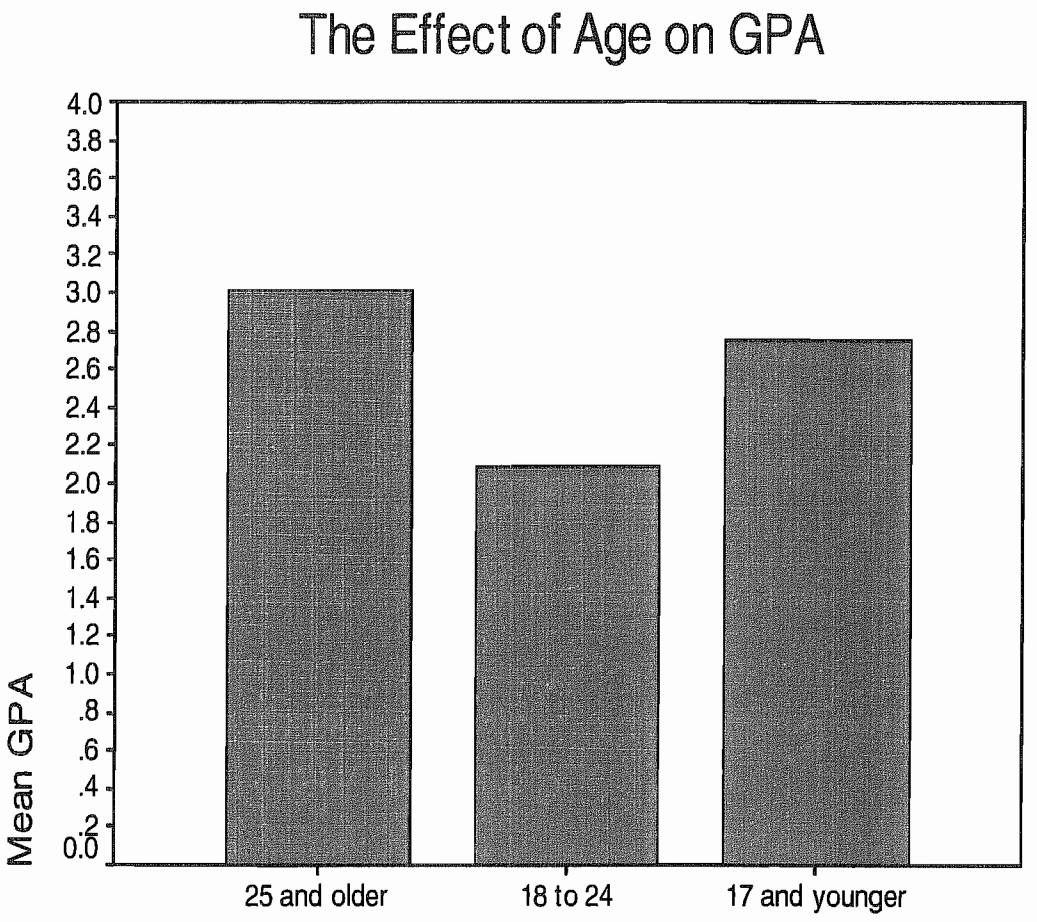
A two-way ANOVA indicates that there is a significant effect of age on the GPAs of EDP students. Students 25 and older and students 17 and younger performed significantly better than students 18 to 24 years of age perform as measured by GPAs. Although students 18 to 24, with a mean GPA of 2.09, do not perform as well as older EDP students and younger EDP students, they did perform better than, although not significantly so, than Liberty University resident students in the study who had a GPA of 2.06.

EDP students GPAs were compared to LU resident students GPAs to see if there was any effect of age on their admitting programs, external or residential.

A sample population of 102 students was randomly selected, using the random numbers table to insure that each number is equally likely to follow any other from the LU resident population of 1121. First semester resident students for the fall term of 1999 were used to make the populations as equal as possible. The random sample of 102 resident students' GPAs was compared with the age groups of EDP students: EDP students 25 and older, EDP age-waiver students age 18 to 24, and EDP age-waiver students under 17 years of age.

Results indicate that there is a significant effect of age on GPA on both resident student and EDP student GPAs.

Figure 2.



F(2,185)=19.273; p=.000

There is a significant effect of age on GPA.

Students age 25 and older earned GPAs significantly higher than students age 18 to 24 (p=.000) disproving hypothesis one.

Students age 17 and younger did not earn GPAs that differed significantly from the GPAs of students age 18 to 24 (p=.189) proving hypothesis three.

Students age 17 and younger did not earn GPAs that differed significantly from the GPAs of students age 25 and older (p=.588) proving hypothesis five.

There is no significant effect of admitting program, whether one is admitted as an EDP student or whether one is admitted into the resident on-campus program, and GPA. Age and admitting program, whether EDP or resident, do not interact to affect GPA.

There is no significant difference in the GPAs of students in any age group based upon their admitting program. Proving hypothesis 2 (EDP students age 24 and younger, will perform as well as LU resident students), and 4 (EDP students, age 17 and younger, will perform as well as LU resident students).

Results of the statistical analysis indicate that External Degree students consistently earn a higher GPA than residential students across all age groups, but not significantly so.

Students in both the external and residential programs aged 25 and older and aged 17 and younger earn GPAs significantly higher than students' age 18 to 24. Students 25 and older earn GPAs only slightly higher than those students aged 17 and younger in both residential and external programs.

Students in Liberty University's EDP's consistently earn better grades than resident campus students and they do so at every age level.

Figure 3.

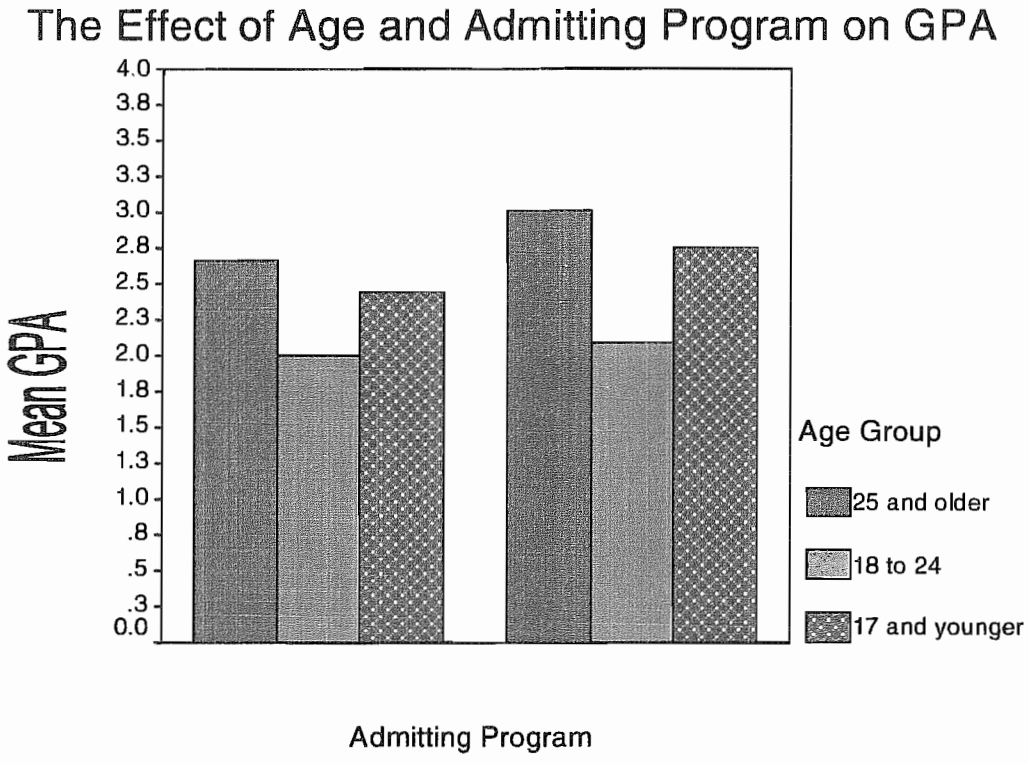

The Effect of Age and Admitting Program on GPA
Mean GPA
4.0
3.8
3.5
3.3
3.0
2.8
2.5
2.3
2.0
1.8
1.5
1.3
1.0
.8
.5
.3
0.0
Age Group
25 and older
18 to 24
17 and younger
Admitting Program

Figure 4.

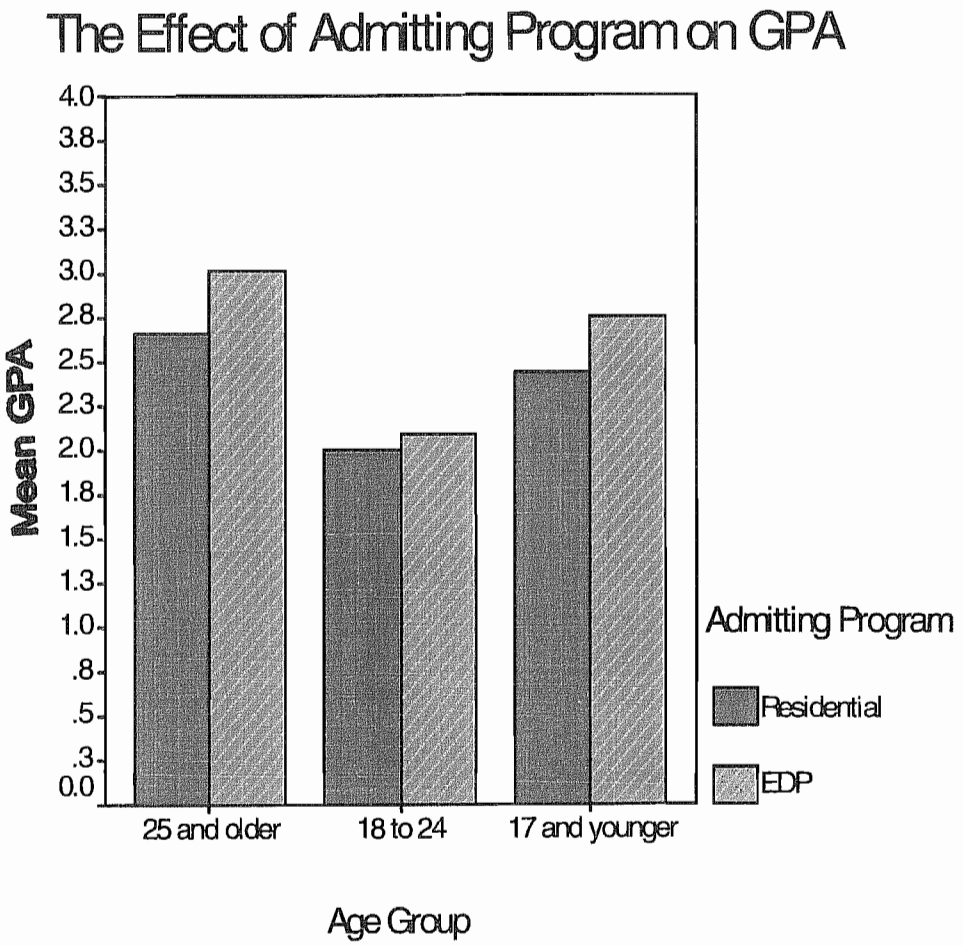
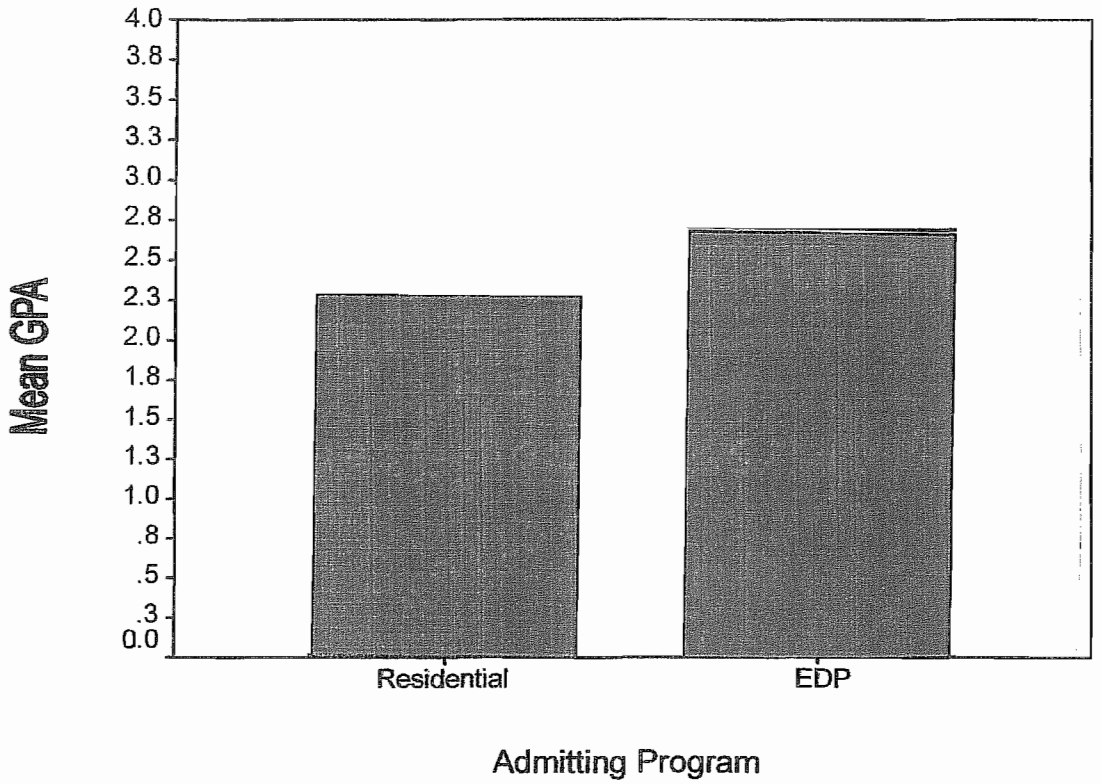

The Effect of Admitting Program on GPA
Mean GPA
4.0
3.8
3.5
3.3
3.0
2.8
2.5
2.3
2.0
1.8
1.5
1.3
1.0
.8
.5
.3
0.0
25 and older
18 to 24
17 and younger
Age Group
Admitting Program
Residential
EDP

Figure 5.
The Effect of Admitting Program on GPA



t(288)=-3.122; p=.002
There is a significant effect of admitting program on GPA.

Demographic Variables

The Effects of Race, Gender and Age on GPA

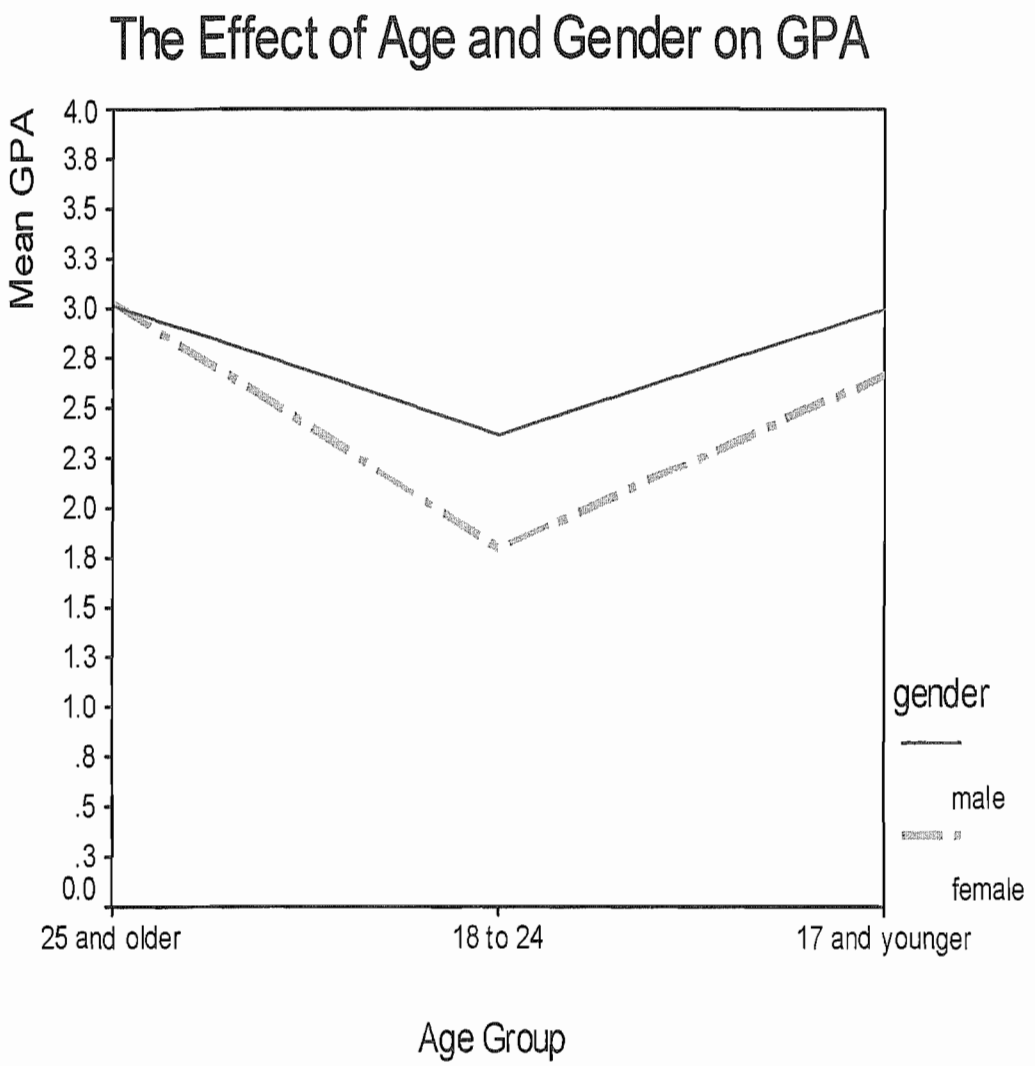
Race, gender, and age were examined to determine their impact on GPA. An ANOVA was used to examine these variables on grade point average. It was found that there is no significant effect of race and gender on GPA.

Another variable that was analyzed was that of prior or current military experience and its effect on GPA. Liberty University has many military students enrolled in the universities EDP. This author postulated that students with prior and current military experience would perform better as measured by GPA than students who do not have military experience. Previous literature suggested that prior life experience and maturity have a positive effect on student performance as measured by earned GPA, but this study determined that prior military experience had no significant effect on GPA.

Limitation of Prior Military Experience Variable

This variable was only analyzed between Liberty University EDP age groups. The information was not unavailable from the resident on-campus students.

Figure 6.

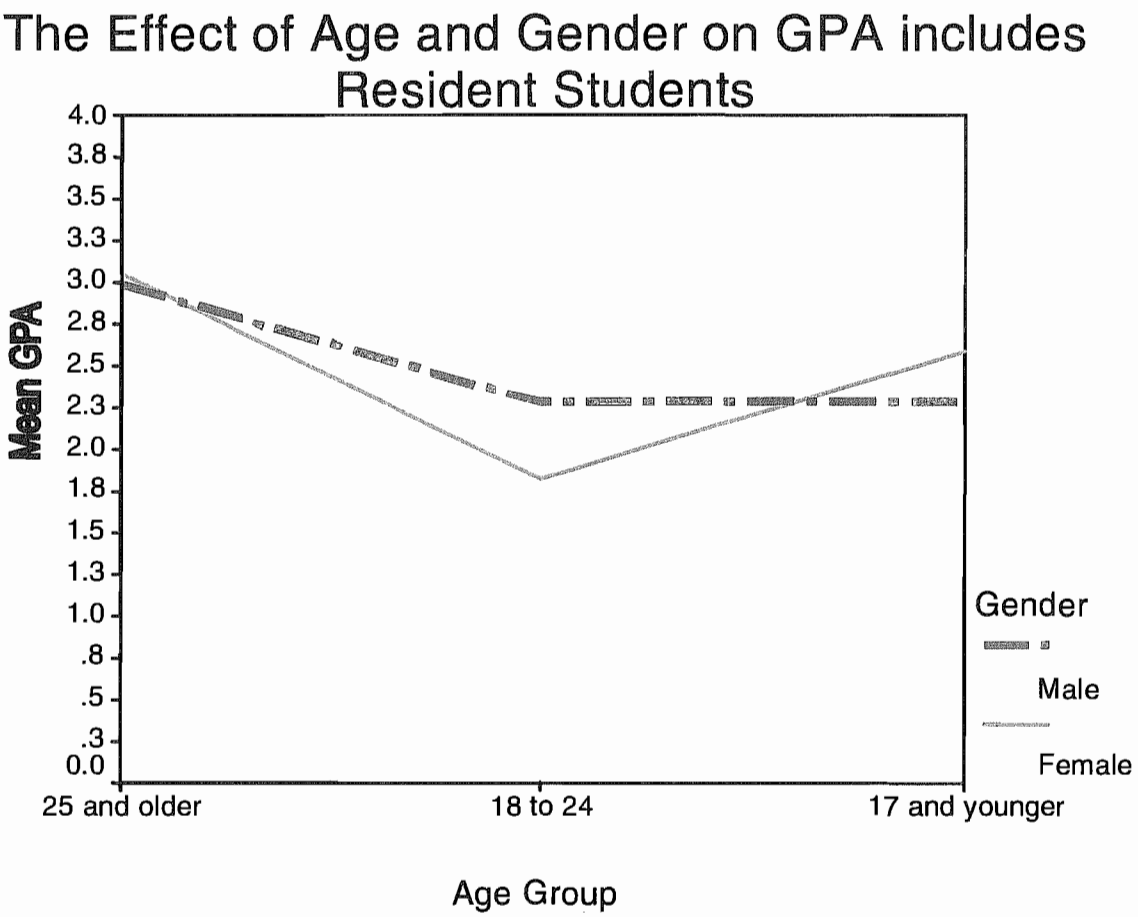


F(2,182)=19.184; p=.000 There is a significant effect of age on GPA.

F(1,182)=.582; p=.446 There is not a significant effect of gender on GPA.

F(2,182)=1.843; p=.161 There is not a significant interaction of age and gender on GPA.

Figure 7.



Age: F(2,284)=25.708; p=.000 There is a significant effect of age on GPA.

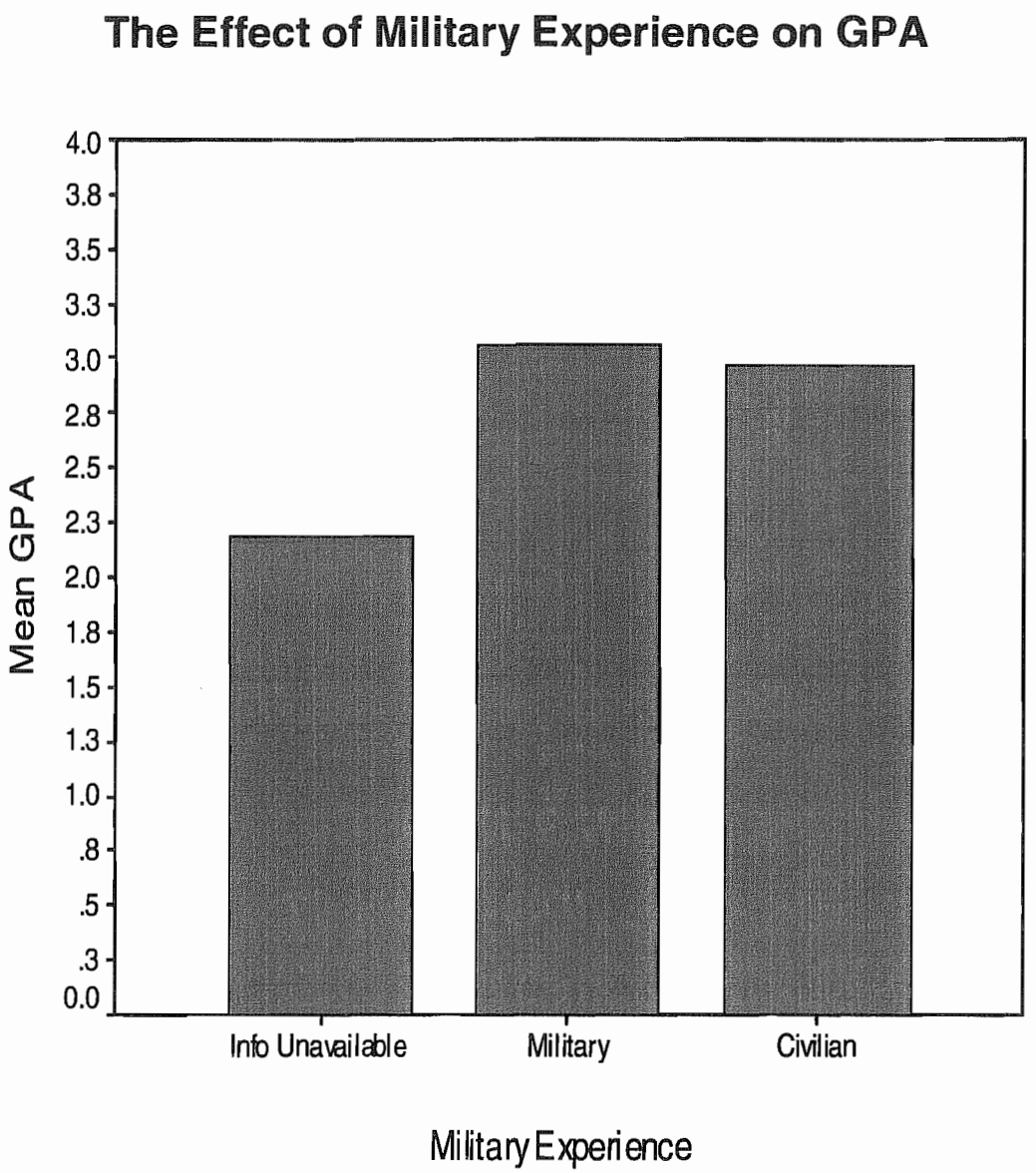
Gender: F(1,284)=.066; p=.798 There is no significant effect of gender on GPA.

Interaction: F(2,284)=3.370; p=.036 There is a significant interaction between age and gender.

There is a significant difference in the GPAs of students age 25 and older and students age 18 to 24 (p=.000) as well as students age 17 and under (p=.001).

There is a significant difference in GPAs of students age 18 to 24 and students age 17 and under (p=.035).

Figure 8.



t(111)=.624; p=.534 There is no significant effect of military experience on GPA.

The Effect of Transferred Credits on GPA

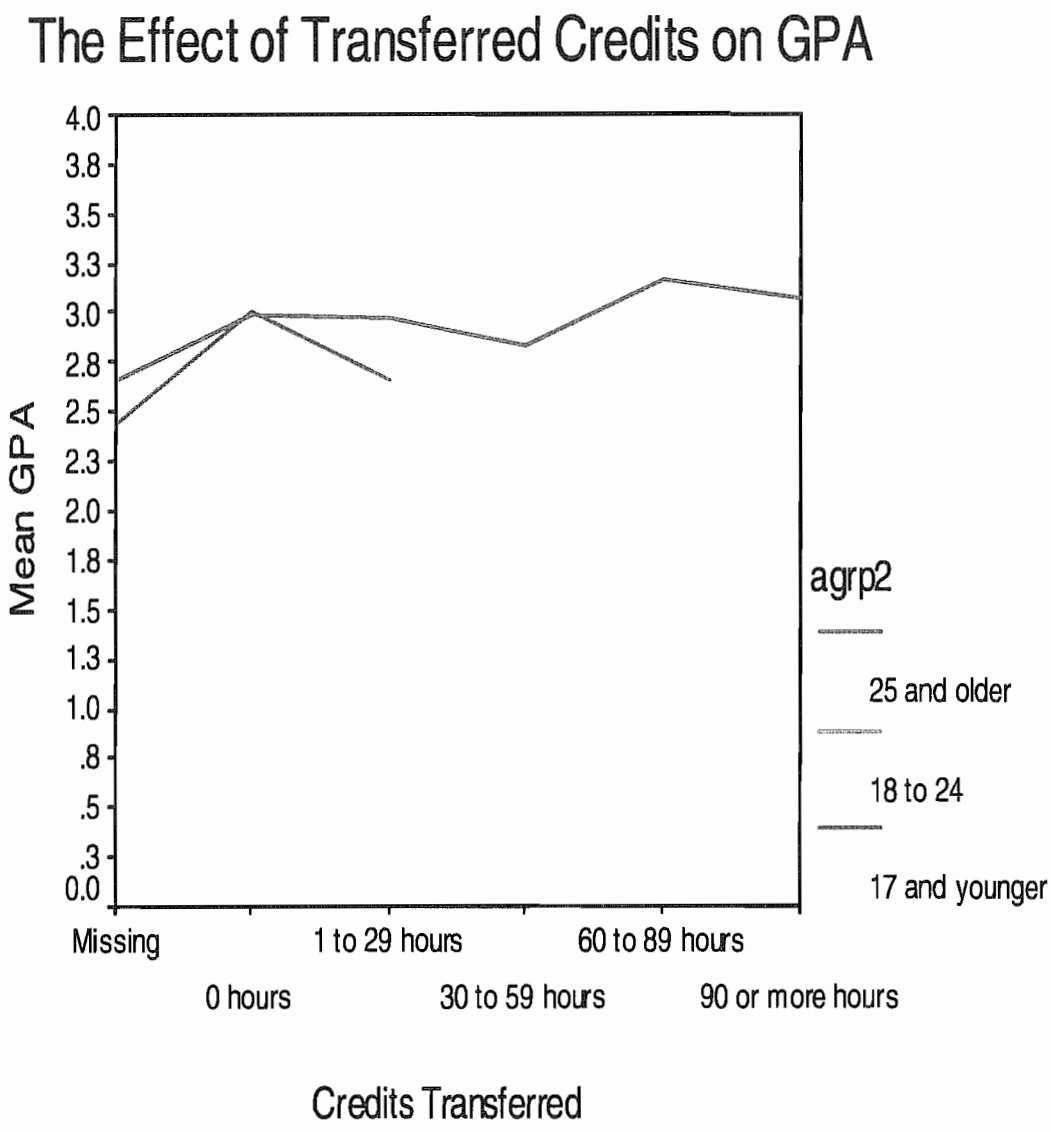
Another variable assessed by this study was that of transfer college credits from other colleges and universities into Liberty Universities External Degree Program and its effect on students GPA. The author expected that there would be a positive correlation between the number of transfer credits a student had (therefore, the greater college experience that the student had) and a higher earned GPA at Liberty University, due to the previous college experience.

Transfer credit was assessed at five levels: 0 hours transferred; 1 to 29 hours of transferred credit; 30 to 59 hours transferred; 60 to 89 hour transferred and 90 or more hours transferred. It was found that there is no significant effect on any amount of transferred credit on earned GPA.

The Effect of Marital Status on GPA

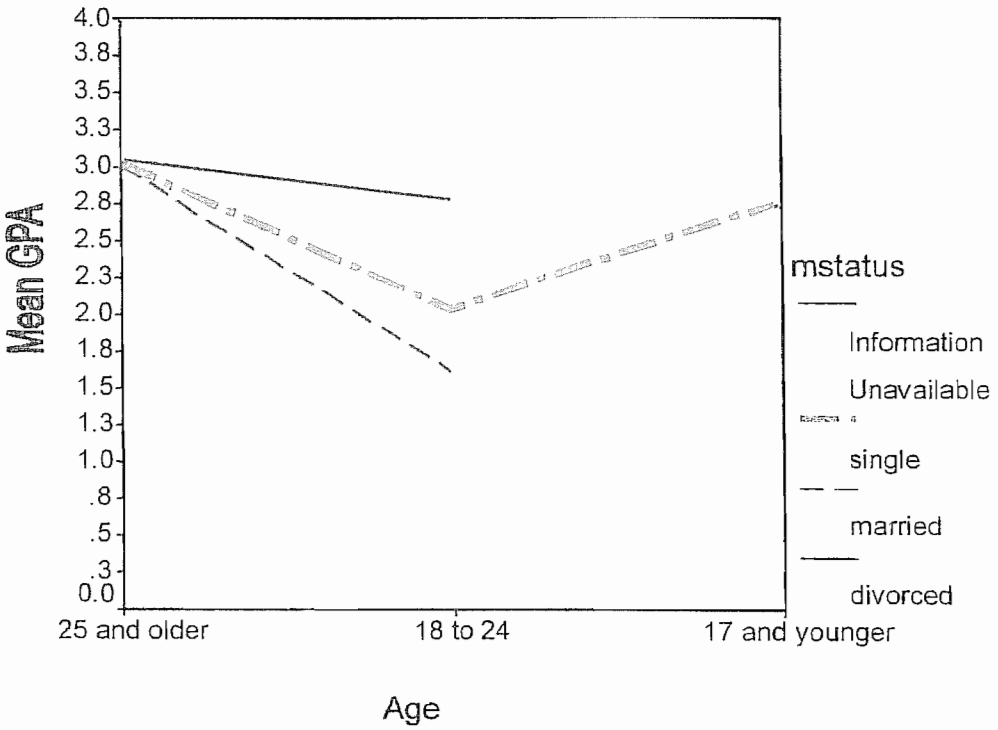
Another variable that was thought to be of significance by the author was that of marital status on GPA. It seemed logical to this author that married students would do better because of their perceived maturity. There was found to be no effect of marital status on earned GPA.

Figure 9.



There is no significant effect of any amount of transferred credit on GPA.

Figure 10.
The Effect of Marital Status on GPA



F (2, 94) = .345; p = .709
There is no effect of marital status on GPA.

The Effect of Education and Geographic Location on GPA

Secondary education and geographic location were variables that were also analyzed. The author felt it would be interesting to see if there was a significant effect on GPAs as a result of being home schooled or by attending a public high school. Also, is there a significant effect on GPA and the geographic location of the student, was the student from a city, suburb or rural area, and does that affect GPA.

It was found that there is no significant effect of type of secondary education on GPA. It was also found that there is no significant effect of type of geographic location and GPA.

Other variables that were examined were demographics that were self-reported in the questionnaire that was sent to each student. Such as is there an effect because of computer access in the home and is economic status a statistically significant factor on earned GPA and age.

Social economic status was categorized into five groups by reported yearly family income:

$0 to $12,000

$12,001 to $24,000

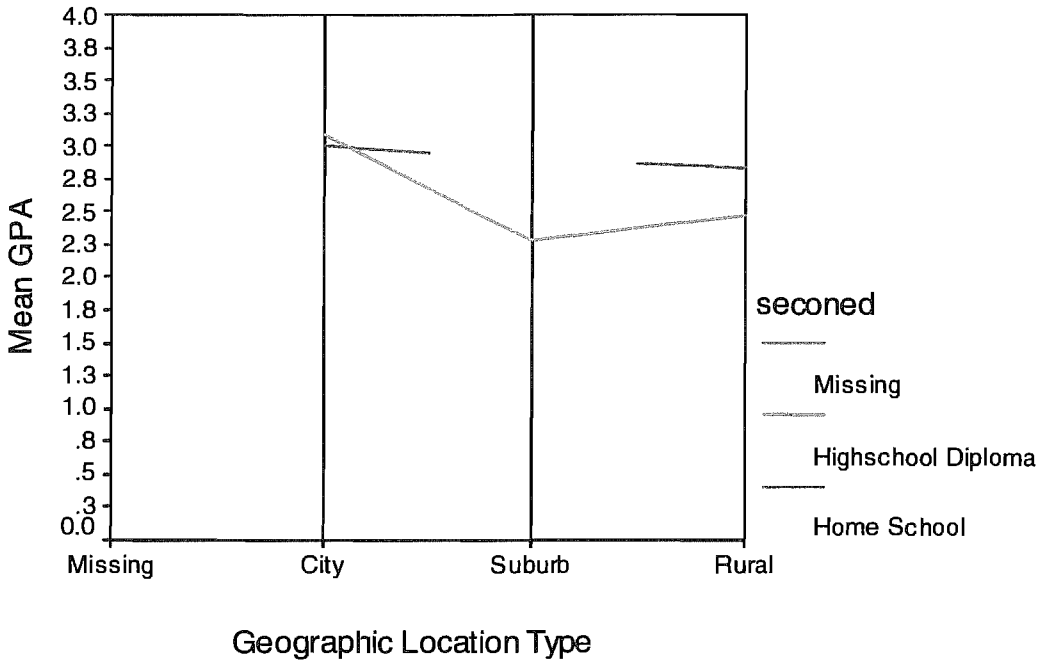
$24,001 to $36,000

$36,001 to $48,000

$48,001 and above

Figure 11.

The Effect of Type of Secondary Education and Type of Geographic Location on GPA



Secondary Education: F(1,28)=.137; p=.714 There is no significant effect of type of secondary education on GPA.

Geographic Location: F(2,28)=1.815; p=.181 There is no significant effect of type of geographic location on GPA

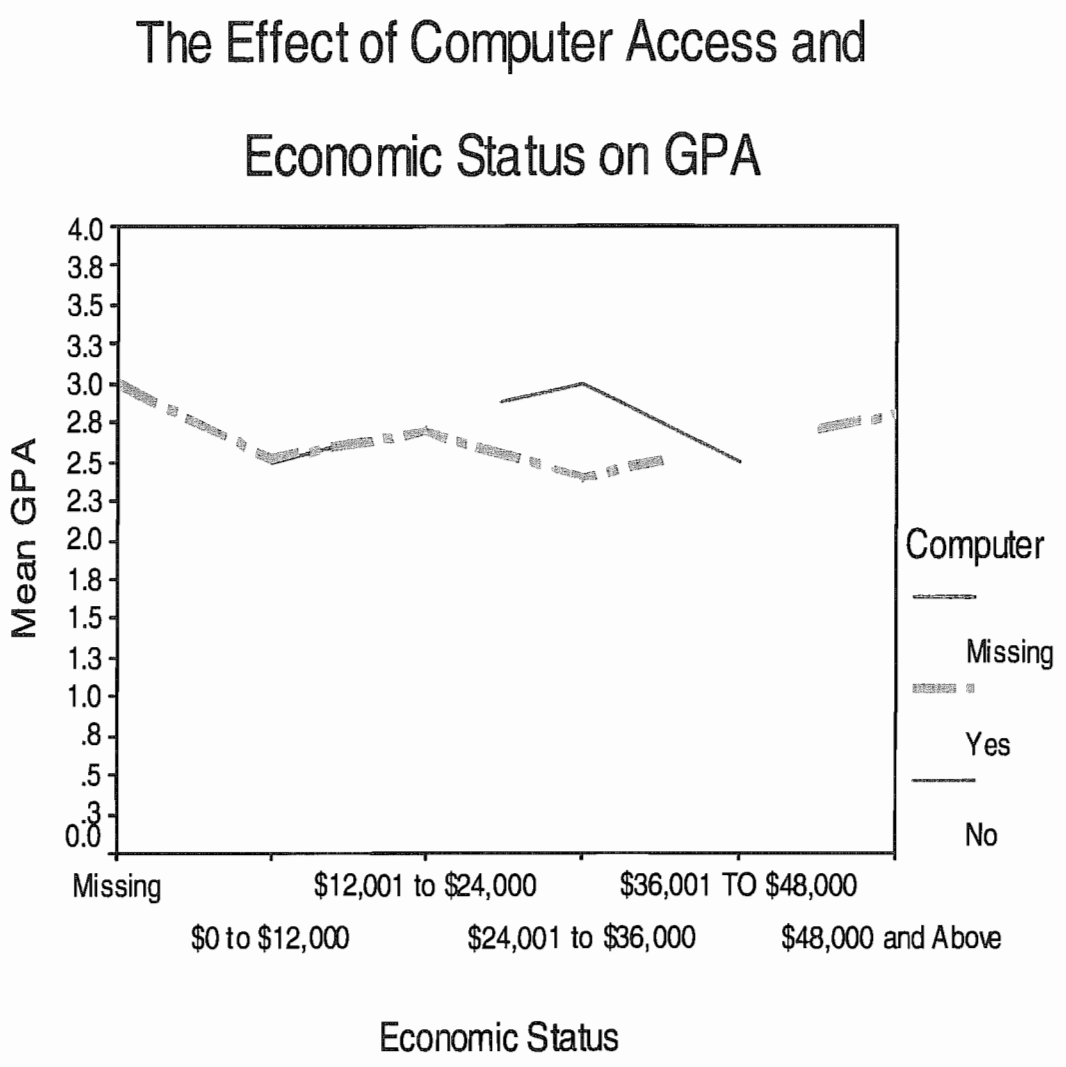
The Effect of Economic Status and Computer Ownership on GPA

Another demographic variable that was thought that may be of significance in a positive way in relation to GPA is whether or not the student has access to a computer in the home. The author postulated that having access to a computer in the home would significantly affect GPA and it was thought that the more one is able financially, (i.e., the higher the family income), the better the GPA would be. It was thought that having a home computer, and other technological resources made available due to financial ability, would be of a statistical significance in the student's GPAs.

It was found that there is no significant effect of computer access on GPA. It was also found that there is no significant effect of economic status and earned GPA.

Perhaps the one variable that is the hardest to assess, and yet may be the strongest variable of all is that of motivation. Students who did not have a computer or were from a lower social economic group did just as well as students who had a computer in the home and were from the highest social economic status groups. Future research in this area may be profitable.

Figure 12.



Computer: F(1,25)=.309; p=.583 There is no significant effect of computer access on GPA.

Economic Status: F(4,25)=.239; p=.914 There is no significant effect of economic status on GPA.

The Effect of Religion Courses on GPAs of EDP Students

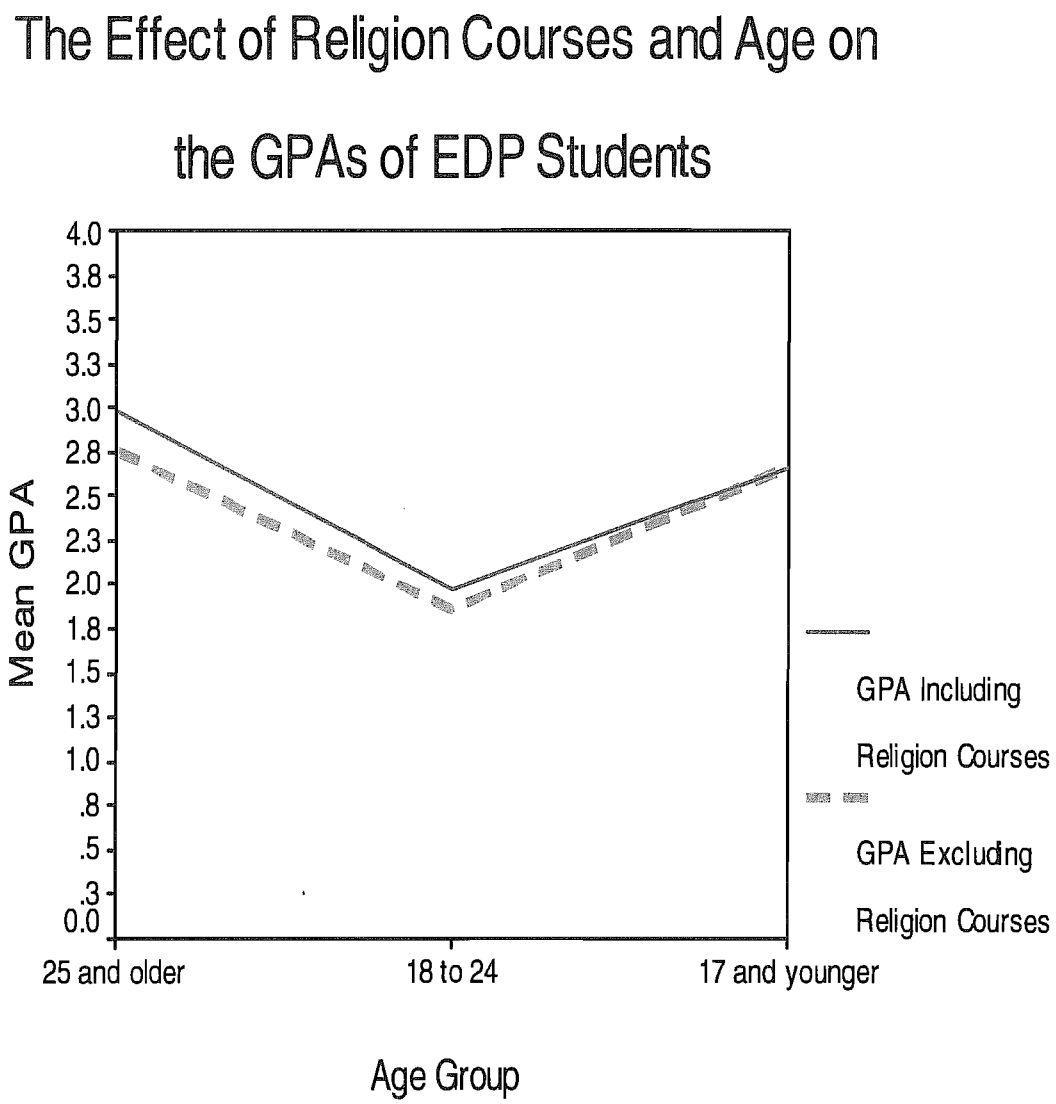
There was some concern that because Liberty University is a Christian University and students who want to attend Liberty University, including EDP students, are required to take six Bible related courses in order to graduate from the University. An ANOVA was performed in order to factor out the Bible courses to see if there was a statistically significant effect on age and on admitting program (EDP and resident program).

With the Bible classes factored out by an ANOVA for the EDP students; the results were that EDP students aged 25 and older consistently earn significantly higher GPAs than Students age 18 to 24. EDP students age 17 and younger earn similar GPAs regardless of the inclusion or exclusion of religion courses. EDP students aged 18 to 24 consistently earn GPAs lower than students age 25 and older and students 17 years old and younger.

The Effect of Religion Courses on GPAs on Resident Students

An ANOVA was performed on resident on-campus students with the result of there being no significant affect of religious courses on resident campus GPAs.

Figure 13.



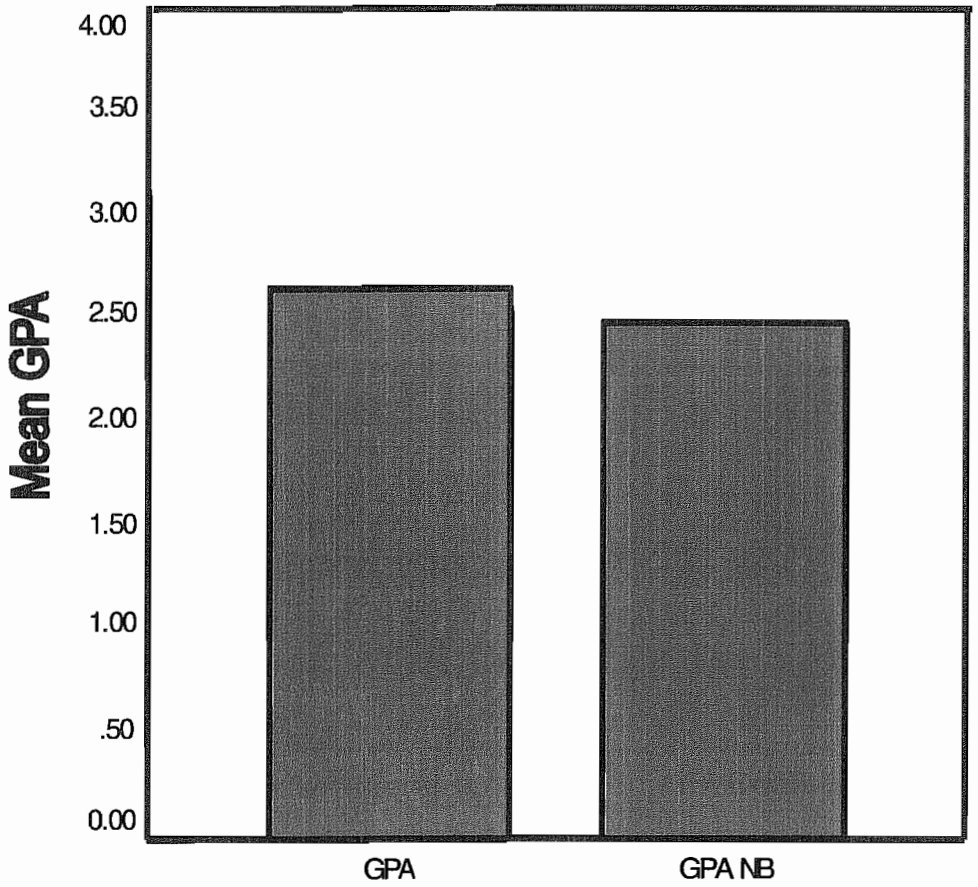
EDP students age 25 and older consistently earn significantly higher GPAs than students age 18 to 24.

EDP students age 17 and younger earn similar GPAs regardless of the inclusion or exclusion of religion courses.

EDP students age 18 to 24 consistently earn GPAs lower than students age 25 and older and students 17 and younger.

Figure 14.

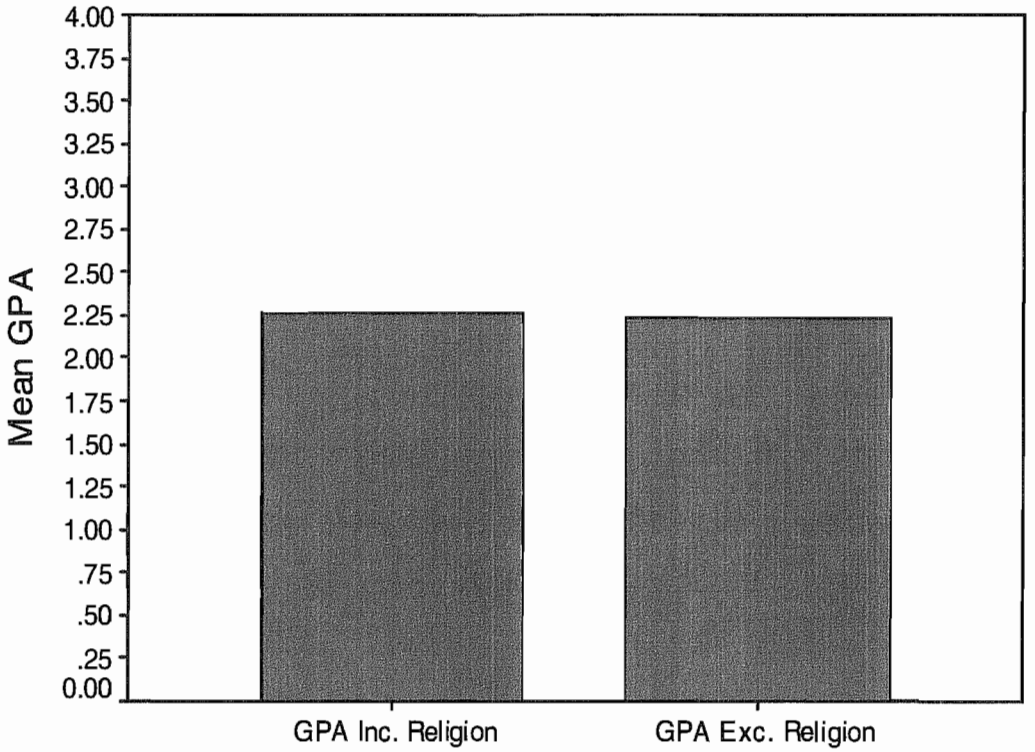
The Effect of Religion Courses on GPA for External Students



*GPANB: Grade Point Average No Bible or Religion Courses

Figure 15.

The Effect of Religion Courses on GPAs of Residential Students



t(100)=1.280; p=.204 There is no significant effect of religion courses on the GPAs of campus students.

CHAPTER SIX

CONCLUSION

Students Under the Age of Eighteen

These students have expressed an interest in Liberty University's External Degree Program and would like to enroll in Liberty University courses. It is often a state requirement and an accrediting agency requirement that the student have a GED or high school diploma in order to enroll in a college degree program. While they may be allowed to take courses, they usually may not enroll in a degree program. The problem is that many states will not grant a GED until the student reaches age eighteen, or the year when the particular student's high school class graduates.

Many of these students would like to take college level courses. Liberty University would be able to accommodate the needs of the student if there was no age restriction and made provision to waive the diploma requirement.

The author had hypothesized that these students would perform as well or better than older EDP students and resident students because of the perceived self discipline

and independence that is required for one to be successfully home schooled. The author felt these are the same variables that may influence the rate of success in an EDP.

These students are typically home schooled. They have been analyzed using a two-way ANOVA with the statistically significant result that their performance equaled that of the age of 25, and surpassed that of EDP students aged 18 to 24 and the Liberty University resident students.

The Liberty University catalog explains the scholastic regulations for EDP and resident students. Under the heading, Scholastic Regulations, the catalog reads:

> "Warning/Probation/Suspension/Dismissal. A student must maintain satisfactory standing in order to remain at Liberty University. Satisfactory scholastic standing for students enrolled in bachelor's programs is:
>
> | | |
> |---|---|
> | Level 1 (0-23 hours) | 1.50 |
> | Level 2 (24-47 hours) | 1.65 |
> | Level 3 (48-71 hours) | 1.85 |
> | Level 4 (72-95 hours) | 2.00 |
> | Level 5 (96 or more hours) | 2.00 |
>
> A student, undergraduate or graduate, failing to attain and maintain the scholastic standing required is placed on academic warning. During the next semester, the undergraduate student is limited to a 6-semester hour course load and is required to take CLST 100.
> At the end of the semester on academic probation, any student who fails to raise his grade point average to

> the required academic level (see above) is placed on academic suspension."[69]

EDP students aged 24 and below meet LU academic requirements as set forth by the official LU catalog.

The fact that the EDP age waiver students perform as well as, and actually better than resident students, although not significantly so, warrants that they should be allowed to continue in the program. They meet Liberty University academic standard guidelines and graduation requirements for first semester students.

Liberty University's EDP cannot afford to ignore or overlook the tremendous potential we have in the education of tomorrow's Christian leaders. There is a new potential in the younger student under the age of twenty-five and the student under eighteen years old.

It will become necessary for universities to adapt their programs and course offerings to become more in touch with the needs of this sub-population as more students and parents are opting for home schooling. These students tend to score higher on standardized tests and tend to finish their high school curriculum earlier than traditional students in high school classroom settings.

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[69] Liberty University, *Liberty University External Degree 1999-2000 Catalog,* (Lynchburg, VA: Liberty University, 1999), 19.

They want to continue their education and do not want to wait until they reach the state mandated age of eighteen to take GED tests or wait until their equivalent high school classes graduate.

Some universities allow for such students to come on campus as traditional students. One is often amazed to hear about some very young student taking classes on a traditional college campus.

Many parents do not wish to house their young child on a traditional campus. They feel that there will be problems socializing, and adapting to this environment as a result of being away from home at such a young and tender age. Liberty University's EDP can fill the gap.

Many Distance Learning Programs will allow a student to enroll in a college level course provided that they have written permission from the student's high school guidance counselor attesting that the student is able to benefit from the course and would be able to complete the course requirements in a satisfactory manner.

There is a need for a home-schooled student to be able to stay at home and be able to continue their education all the way to the completion of a college degree through distance learning. Liberty University is in a unique position to offer such an opportunity if the age restriction is removed.

The University can become an innovator in this area of distance learning and serve the needs of a growing student population.

According to new research conducted by International Data Corporation (IDC) and published in a report entitled "*On-line Distance Learning in Higher Education, 1998-2000;*"

(1) The number of college students enrolled in distance learning courses will reach 2.2 million in 2002, up from 710,000 in 1998.

(2) By 2002, 85 percent of two-year colleges will be offering distance learning courses, up from 58 percent in 1998.

(3) Eighty-four percent of four-year colleges will be offering distance learning courses in 2002, up from 62 percent in 1998.

(4) By 2002, the number of students taking distance learning courses will represent 15 percent of all higher education students, up from 5 percent in 1998.[70]

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[70] Peterson's, p. 7.

Projections of traditional college enrollment from 1998 to 2002 is as follows according to the August 27, 1999 issue of *The Chronicle of Higher Education Almanac:* [71]

1998	1999	2000	2001	2002
14,608,000	14,881,000	15,072,000	15,158,000	15,168,00

One can readily see that traditional college enrollment is increasing slightly, while distance education is growing rapidly.

According to Sau Ching Lau, senior analyst for IDC's Educational Markets Research Program, the Internet has revolutionized and changed the distance learning landscape over the last several years. The scope, content, and delivery systems are now dramatically different, and distance learning courses are more readily available. The Internet is the catalyst attracting more schools and students to distance learning than ever before.

Because of the changing demographics, more rural students are able to take EDP classes. Some rural students are not able to relocate to the campus area but are highly motivated to seek alternative instructional options to

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[71] The Chronicle of Higher Education Almanac. August 27, 1999.

complete their education. Distant learning is a tool to mitigate geographic isolation and allow rural students to participate in the educational marketplace.

It has become necessary for universities to adapt their programs and course offerings to become more in touch with the needs of the changing student market. The element of convenience has emerged as one of the primary requirements of the non-traditional student. It is difficult for the nontraditional student to reconcile conflicting requirements, commitments and school.

Thus distance learning can provide opportunities to nontraditional students and consequently, growth potential for Liberty University's EDP.[72]

Impact on Liberty University's Residential Enrolment

The third question that was proposed in the beginning of this project was how removing the age restriction in the EDP would affect enrolment in the Liberty University resident program.

An interview was conducted with Liberty University's registrar Corey Leverette on June 26, 2000. Mr. Leverette stated that there had been no negative impact as a result of

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[72] Melodie R. Phillips and Mary Jane Peters. "Targeting Rural Students with Distance Learning Courses: a Comparative Study of Determinant Attributes and Satisfaction Levels". *Journal of Education for Business*. 74, no. 6, (1999): 351.

an increase of EDP students age 12-24, on resident student enrollment and stated that he foresaw no impact on the LU resident program in the future.[73] A follow up telephone survey of the schools previously contacted in this study on June 12, 2000 resulted in no registrars reporting a negative impact on the their resident enrollment numbers due to an increase in enrollment of external degree students.

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[73] Corey Leverette, interview by author, Lynchburg, VA. May 2000.

CHAPTER SEVEN

RECOMMENDATION

This research project was designed to answer three questions that are pertinent to the decision making process of an age waiver committee made up of Deans and Faculty members of the various colleges and schools of the University.

The questions that are answered are as follows:

1. Do EDP students 24 years old and younger perform as well as older students in the EDP? Answer: Yes.
2. Do EDP students 24 years old and under perform as well as Liberty University resident students? Answer: Yes.
3. Will there be a significant decline in the number of residential students if the age restriction is lifted? Answer: No.

Five hypotheses were developed by the author to support the age waiver study. Statistical analysis of the data pertinent to the study indicates that four of the five hypotheses put fourth by the author have proven valid.

Results of the study indicate that EDP age waiver students age 24 and below perform as well as the Liberty University resident students, as measured by their earned first semester GPAs.

There is no significant statistical difference between the mean GPAs of LU resident students and EDP age waiver students.

The age waiver students under the age of 17 out performed EDP resident students of the same age group.

These students performed as well as the older EDP over the age of 25. An added caveat was that the students under the age of 17 earned no failing grades, whereas 4.13% of the EDP students over the age of 25 did earn failing grades.

The study indicates that EDP students at all age groups perform as well or better than LU resident students but not significantly so (see Appendix F).

These results along with the fact that most other EDP schools that are similar to Liberty University do not have an age waiver requirement and that the population of students 25 years of age and older is declining while the population of students age 18 to 24 is rising dramatically.

More two-year and four year colleges and universities in the United States are offering distance learning programs to meet this growing demand.

More two-year and four year colleges and universities in the United States are offering distance learning programs to meet this growing demand.

Liberty University has the unique opportunity to shape young lives with Christian values that will enable them to be better leaders in whatever vocation they are called to.

It is the recommendation of this author that the age restriction be lifted.

APPENDIX A

AGREEMENT FOR AGE WAIVER ENROLLMENT

LIBERTY UNIVERSITY

We're Changing Lives... One Degree at a Time.

AGREEMENT FOR AGE WAIVER ENROLLMENT IN THE LIBERTY UNIVERSITY EXTERNAL DEGREE PROGRAM

You have applied for enrollment as a student in the Liberty University External Degree Program (EDP). You are under the minimum required age of 25. However, this requirement will be waived subject to the following conditions:

1. You will become part of an Age Waiver Study, the results of which will be used to determine whether the minimum age requirement will be retained, modified, or dropped. This study will continue through May 2000. In addition to your academic progress, certain demographic, biographical, and other relevant information will be gathered and analyzed. You may be required periodically to furnish information for the Study.

2. You will be admitted under the current EDP status sheet for the degree and major of your choice. This status sheet may be different from the comparable Resident program status sheet. It will remain in effect until such time as you break enrollment at Liberty University.

If you agree to the above conditions, sign and date this Agreement and return it to:

Liberty University
1971 University Blvd.
Lynchburg, VA 24502-2269
Attn: EDP Admissions

_____ _____ _____

Name (printed or typed) Signature Date

Liberty University • 1971 University Boulevard • Lynchburg, Virginia 24502
Phone: 1-800-424-9595 • Web Site: http://www.liberty.edu • E-Mail Address: admissions@liberty.edu

LIBERTY UNIVERSITY

We're Changing Lives... One Degree at a Time.

Dear Liberty Student,

Thank you for your participation in Liberty University's Age Waiver Agreement. As part of this Agreement, that you signed to become a Liberty University External Degree student, we are asking that you respond to the following questionnaire.

To protect your identity, please DO NOT give your name or student number. We have assigned your questionnaire with a computer-generated number for statistical analysis purposes only. Thank you for your cooperation and expeditious response.

Sincerely,

Frank L. King
Age Waiver Study Analyst

attachments

Liberty University • 1971 University Boulevard • Lynchburg, Virginia 24502
Phone: 1-800-424-9595 • Web Site: http://www.liberty.edu • E-Mail Address: admissions@liberty.edu

AGE WAIVER AGREEMENT QUESTIONNAIRE

Please check all appropriate circles and supply data on provided lines.

EDUCATIONAL

Secondary Education	H.S. Diploma ◯ H.S. GPA:_____	G.E.D. ◯ SAT Score :_____	Home School ◯ ACT Score:_____
Prior College-level	AA Degree ◯ Major:_____ No. of Credits:_____	Technical ◯ Major:_____ No. of Credits:_____	Vocational ◯ Major:_____ No. of Credits:_____
CLEP TESTS	Subject:_____ Subject:_____ Subject:_____	Subject:_____ Subject:_____ Subject:_____	Subject:_____ Subject:_____ Subject:_____

PERSONAL

Ethnic Origin	American Indian ◯	White ◯	Asian ◯
	Hispanic/Latino ◯	Black ◯	Pacific Islander ◯
Martial Status	Single ◯	Married ◯	Separated ◯
	Divorced ◯	Widowed ◯	
Dependents	No. of children:_____	Ages of Children:_____	_____ _____ _____
Technology	PC in home ◯	Office PC ◯	Public PC ◯

GEOGRAPHICAL

State:_____	City ◯	Suburb ◯	Rural ◯
Country:_____	Agriculture ◯	Livestock ◯	Produce ◯

RELIGIOUS PREFERENCE

Protestant ◯	Catholic ◯	Jewish ◯	Muslim ◯
Denomination Name:	_____	Other Please Name:	_____

SOCIO-ECONOMIC STATUS

$0 - 12,000 ◯	$12,001 - 24,000 ◯	$24,001 - 36,000 ◯	$36,001 - 48,000 ◯
$48,001 - upbove ◯			

LIBERTY UNIVERSITY EDP COURSES TAKEN: LIST IN ORDER

Course #:_____	Semester: _____	Grade:_____	Comment:_____
Course #:_____	Semester: _____	Grade:_____	Comment:_____
Course #:_____	Semester: _____	Grade:_____	Comment:_____
Course #:_____	Semester: _____	Grade:_____	Comment:_____
Course #:_____	Semester: _____	Grade:_____	Comment:_____
Course #:_____	Semester: _____	Grade:_____	Comment:_____

APPENDIX B

TOTAL NUMBER OF AGE WAIVERS

Total number of Age Waivers	144
Withdrew from study	24
Did not enroll or did not complete course prior to March 30, 2000	50
Completed study/Enrolled in & completed courses	70
ages 18—24	66
ages 12—17	4

APPENDIX C

TOTAL NUMBER OF COURSES COMPLETED: 139

COURSE DIFFICULTY CHART BASED UPON FAILING GRADES

COURSE DIFFICULTY CHART BASED ON "F" GRADES											
ID #	Age	Gender	100 LEVEL	100 LEVEL	200 LEVEL	200 LEVEL	300 LEVEL	300 LEVEL	300 LEVEL	400 LEVEL	
222	24	M					CHMN 387	BIBL 323	BIBL350	BIBL 410	0.00
119	24	M					PSYC 380				1.80
180	24	F					PSYC 355		PSYC 341		0.00
181	24	F			ECNC 213						0.00
111	23	M					BUSI 310		BUSI 301		0.00
125	23	M			HIUS 221						2.00
138	23	M		BIBL 110			BIBL 350				1.00
170	23	M			PHIL 201						0.00
196	23	M			PSYC 200						1.50
131	23	F			GEED 205						2.00
144	23	F	MATH 100	ENGL 101							0.00
118	22	F			APOL 290	THEO 202					0.00
137	22	F		BIBL 105		PSYC 200					0.00
159	22	F		ENGL 101	APOL 290						0.00
187	22	F		BIBL 110							0.00
103	21	M	MATH 115								0.00
106	21	M		ENGL 101							0.00
112	21	F					PSYC 355				0.00
140	21	F			HIUS 221						0.00
202	20	F		ENGL 102							0.00
243	20	F	BIOL 101								2.00
168	18	F	ENGL 101								0.00

APPENDIX D

RANDOMLY SELECTED EXTERNAL DEGREE PROGRAMS FROM THE PETERSON'S GUIDE TO DISTANCE EDUCATION

RANDOMLY SELECTED EDP'S FROM THE PETERSON'S GUIDE TO DISTANCE EDUCATION.

Question asked: Does your program have a minimum age requirement and if so what is the age requirement? X indicates school contacted but found not appropriate for study.

COLLEGE	RESPONSE	COLLEGE	RESPONSE
University of Maryland: www.umcp.edu 301-405-1000	No	University of Alaska distance.ed@uas.alaska.edu 907-465-6353	No Answer
University of Phoenix: www.uophx.edu 800-765-4922	Yes 23	University of California learn.berkeley.edu 510-642-4124	X No Degrees
Upper Iowa University www.uiu.edu 888-877-3742	No	University of Houston www.uh.edu 281-395-2800	X
University of Sarasota www.sarasota.edu 800-331-5995	No	Regents University www.esc.edu 518-5587-2100	X
Thomas Edison State www.tesc.edu 609-292-6317	Yes 21	University of Central Florida pegasus.cc.ucf.edu/distrib 407-207-4910	X Need A.A.
NOVA Southeastern U www.nova.edu 800-541-6795	No	University of Iowa www.uiowa.edu 319-335-2575	No
University of Alabama www.bama.disted.ua.edu 205-348-6010	No No Degrees	University of Houston www.uh.edu/distance 281-395-2800	X Need A.A.
University of Utah www.utah.edu 801-585-1906	X	Walden University www.walden.edu 800-444-6795	X Graduate Degrees
Upper Iowa University www.uiu.edu 888-877-3742	No	University of Wyoming ecampus.uwyo.edu 307-766-4300	No

COLLEGE	RESPONSE	COLLEGE	RESPONSE
Portland State University Extended.pdx..edu 503-725-4865	No	Rio Salado College www.rio.maricopa.edu 480-717-8540	No
Regis University www.regis.edu 800-967-3237	Yes 21 Must be out of high school for 3 years	Rogers State U www.rogersssu.edu 918-343-7548	No
Saint Joseph's College www.sjcme.edu 800-752-4723	No	St. Mary of the Woods www.smwc.edu 812-535-5186	No Men cannot earn a degree
Lamar University hal.lamar.edu 409-880-8209	No	LSU www.is.isu.edu 800-234-5046	No
Northeastern University www.neu.edu 617-373-5620	No	Ohio State University www.osu.edu 614-292-6026	No
Ohio University www.ohiou.edu 800-444-2420	No	Oklahoma State University www.okstate.edu 405-744-6390	No
Old Dominion University web.odu.edu 757-683-3163	No	Oregon State University statewide.orst.edu 541-737-2676	No Needs 2 years college first
Palomar College etvoffice@palomar 760-794-1150	No	Penn State University www.outreach.psu.edu 800-252-3592	No
Sam Houston State U www.schoolcraft.cc.mi.us 409-294-1003	No	Stanford University scpd.stanford.edu 650-725-6950	No
Adams State College www.adams.edu 717-587-7671	No	Atlantic Union College www.atlanticc.edu 978-368-2300	Yes 21

Appendix Page 3

COLLEGE	RESPONSE	COLLEGE	RESPONSE
Bemidgi State University www.bemidgi.msus.edu 218-755-2068	No	Brigham Young University coned.byu.edu/is/. 801-378-8522	No
City University www.city.edu 800-426-5596	No	College of San Mateo www.kesm.org 650-524-6933	No
Drake University Janet.memphill@draaaake.edu 515-271-2183	No	Ft. Hays State University v_college@tyer.fhsu.edu 785-678-4291	No
Kansas State University www.dce.ksu.edu 800-622-2578	No	The Union Institute www.tui.edu 800-486-3116	No

APPENDIX E

GRADES EARNED IN ALL CLASSES BY ALL STUDENTS

AGE WAIVER STUDENTS - EARNED GRADE OF A										
AGE	BIBL 323		BIBL 105		BIBL 110		BIBL 410		THEO 201	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
24			3							
23	1		1							
22										
21			1	1						
20			1	1			1		1	
19					1					
18										1
17										
16										
15										
14										
13										
12										
COURSE TOTALS	1	0	6	2	1	0	1	0	1	1
COURSE TOTALS	1		8		1		1		2	

EARNED GRADE OF A CONTINUED										
AGE	INTL 460		INTL 495		BUSI 102		BUSI 301		BUSI 330	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
24										
23										
22										
21										
20					1					1
19					1		1			
18										
17	1		1							
16										
15										
14										
13										
12										
COURSE TOTALS	1	0	1	0	2	0	1	0	0	1
COURSE TOTALS	1		1		2		1		1	

	EARNED GRADE OF A CONTINUED							
AGE	PSYC 200		PSYC 355		PSYC 341		TOTAL BY AGE	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
24							3	0
23							2	0
22							0	0
21				1			1	2
20					1		5	2
19							3	0
18		1					0	2
17							2	0
16							0	0
15							0	0
14							0	0
13							0	0
12							0	0
COURSE TOTALS	0	1	0	1	1	0	16	6
COURSE TOTALS	1		1		1		22	

AGE WAIVER STUDENTS - EARNED GRADE OF B										
AGE	APOL 290		BIBL 105		BIBL 110		THEO 201		PHIL 201	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
24					1					
23		1	1	1		1			1	
22		1								
21				1		1		1		
20				1	1		1		1	
19							1			
18				1						
17										
16										
15										
14										
13										
12					1					
COURSE TOTALS	0	2	1	4	3	2	2	1	2	0
COURSE TOTALS	2		5		5		3		2	

EARNED GRADE OF B CONTINUED										
AGE	CHMN 101		HUMN 101		ENGL 101		GOVT 200		BIOL 101	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
24						1				
23								1	1	
22										
21					1					
20	1									
19				1	1					
18										
17										
16										
15										
14										
13										
12										
COURSE TOTALS	1	0	0	1	2	1	0	1	1	0
COURSE TOTALS	1		1		3		1		1	

EARNED GRADE OF B CONTINUED										
AGE	MATH 100		MATH 201		BUSI 100		BUSI 102		BUSI 310	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
24		1								
23					1					
22										
21								1		
20										
19			1					1		
18										1
17										
16										
15										
14										
13										
12										
COURSE TOTALS	0	1	1	0	1	0	0	2	0	1
COURSE TOTALS	1		1		1		2		1	

EARNED GRADE OF B CONTINUED										
AGE	BUSI 301		BUSI 223		ECNC 213		PSYC 200		PSYC 312	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
24										
23										
22	1									1
21					1					
20			1							
19								1		
18										
17				1						
16				1						
15										
14										
13										
12										
COURSE TOTALS	1	0	1	2	1	0	0	1	0	1
COURSE TOTALS	1		3		1		1		1	

EARNED GRADE OF B CONTINUED												
AGE	PSYC 321		PSYC 341		PSYC 355		PSYC 380		PSYC 421		TOTAL BY AGE	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
24											1	2
23							1				5	4
22											1	2
21		1		1						1	2	7
20					1						6	1
19											3	3
18											0	2
17											0	1
16											0	1
15											0	0
14											0	0
13											0	0
12											1	0
COURSE TOTALS	**0**	**1**	**0**	**1**	**1**	**0**	**1**	**0**	**0**	**1**	**19**	**23**
COURSE TOTALS	**1**		**1**		**1**		**1**		**1**		**42**	

AGE WAIVER STUDENTS - EARNED GRADE OF C										
AGE	APOL 290		BIBL 105		BIBL 110		THEO 201		THEO 202	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
24	1						1		1	
23			1							
22										
21		1	1	1	1					1
20				1	1				1	
19										
18			1							
17										
16										
15										
14										
13										
12										
COURSE TOTALS	1	1	3	2	2	0	1	0	2	1
COURSE TOTALS	**2**		**5**		**2**		**1**		**3**	

EARNED GRADE OF C CONTINUED										
AGE	PATH 450		CHMN 101		PHIL 201		ENGL 101		ACCT 211	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
24	1									
23			1							
22										
21										1
20				1		1				
19										
18								1		
17										
16				1						
15										
14										
13										
12										
COURSE TOTALS	1	0	1	2	0	1	0	1	0	1
COURSE TOTALS	**1**		**3**		**1**		**1**		**1**	

EARNED GRADE OF C CONTINUED										
AGE	BUSI 100		BUSI 223		BUSI 310		ECNC 213		CLST 100	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
24										
23										
22					1					
21			1							
20					1		2			
19							1			
18		1								
17										
16										1
15										
14										
13										
12										
COURSE TOTALS	0	1	1	0	2	0	3	0	0	1
COURSE TOTALS	1		1		2		3		1	

EARNED GRADE OF C CONTINUED										
AGE	HUIS 221		PSYC 200		PSYC 341		PSYC 355		PSYC365	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
24							1			
23	1									
22						1				
21				1				1		1
20										
19				1						
18										
17										
16										
15										
14										
13										
12										
COURSE TOTALS	1	0	0	2	0	1	1	1	0	1
COURSE TOTALS	1		2		1		2		1	

EARNED GRADE OF C				
AGE	PSYC 380		TOTAL BY AGE	
	MALE	FEMALE	MALE	FEMALE
24			5	0
23			3	0
22			1	1
21		1	3	8
20			5	3
19			1	1
18			1	2
17			0	0
16			0	2
15			0	0
14			0	0
13			0	0
12			0	0
COURSE TOTALS	0	1	19	17
COURSE TOTALS	**1**		**36**	

AGE WAIVER STUDENTS - EARNED GRADE OF D										
AGE	THEO 201		CHHI 301		HUMN 101		PSYC 341		PSYC 405	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
24	1		1							
23						1				
22										
21										1
20								1		
19						1				
18										
17										
16										
15										
14										
13										
12										
COURSE TOTALS	1	0	1	0	0	2	0	1	0	1
COURSE TOTALS	1		1		2		1		1	

	EARNED GRADE OF D CONTINUED					
AGE	ECNC 213		BIOL 101		TOTAL BY AGE	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
24					2	0
23					0	1
22					0	0
21					0	1
20			1		1	1
19	1				1	1
18					0	0
17					0	0
16					0	0
15					0	0
14					0	0
13					0	0
12					0	0
COURSE TOTALS	1	0	1	0	4	4
COURSE TOTALS	1		1		8	

AGE WAIVER STUDENTS - EARNED GRADE OF F										
AGE	APOL 290		BIBL 105		BIBL 110		BIBL 323		BIBL 350	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
24							1		1	
23					1				1	
22		2		1		1				
21										
20										
19										
18										
17										
16										
15										
14										
13										
12										
COURSE TOTALS	0	2	0	1	1	1	1	0	2	0
COURSE TOTALS	2		1		2		1		2	

EARNED GRADE OF F CONTINUED										
AGE	BIBL 410		CHMN 387		THEO 202		PHIL 201		ENGL 101	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
24	1		1							
23							1			1
22						1				1
21									1	
20										
19										
18										1
17										
16										
15										
14										
13										
12										
COURSE TOTALS	1	0	1	0	0	1	1	0	1	3
COURSE TOTALS	1		1		1		1		4	

EARNED GRADE OF F CONTINUED										
AGE	ENGL 102		BIOL 101		MATH 100		MATH 115		HIUS 221	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
24										
23						1			1	
22										
21							1			1
20		1		1						
19										
18										
17										
16										
15										
14										
13										
12										
COURSE TOTALS	0	1	0	1	0	1	1	0	1	1
COURSE TOTALS	1		1		1		1		2	

EARNED GRADE OF F CONTINUED										
AGE	GEED 205		ECNC 213		BUSI 301		BUSI 310		PSYC 200	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
24				1						
23		1			1		1		1	
22										1
21										
20										
19										
18										
17										
16										
15										
14										
13										
12										
COURSE TOTALS	1	0	0	1	1	0	1	0	1	1
COURSE TOTALS	1		1		1		1		2	

EARNED GRADE OF F CONTINUED								
AGE	PSYC 355		PYSC 341		PSYC 380		TOTAL BY AGE	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
24		1		1	1		5	3
23							7	3
22							5	3
21		1					7	3
20							0	7
19							2	2
18							0	2
17							0	0
16							0	1
15							0	0
14							0	0
13							0	0
12							0	0
COURSE TOTALS	0	2	0	1	1	0	15	17
COURSE TOTALS	2		1		1		32	

AGE WAIVER STUDENTS - COURSE WITHDRAWALS										
AGE	APOL 290		BIBL 105		BIBL 110		BIBL 350		THEO 201	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
24						1				
23										
22		1		1				1		
21	1	1								
20			2		1		1			
19		1								
18										
17									1	
16										
15										
14										
13										
12										
COURSE TOTALS	1	3	2	1	1	1	1	1	1	0
COURSE TOTALS	4		3		2		2		1	

COURSE WITHDRAWALS CONTINUED

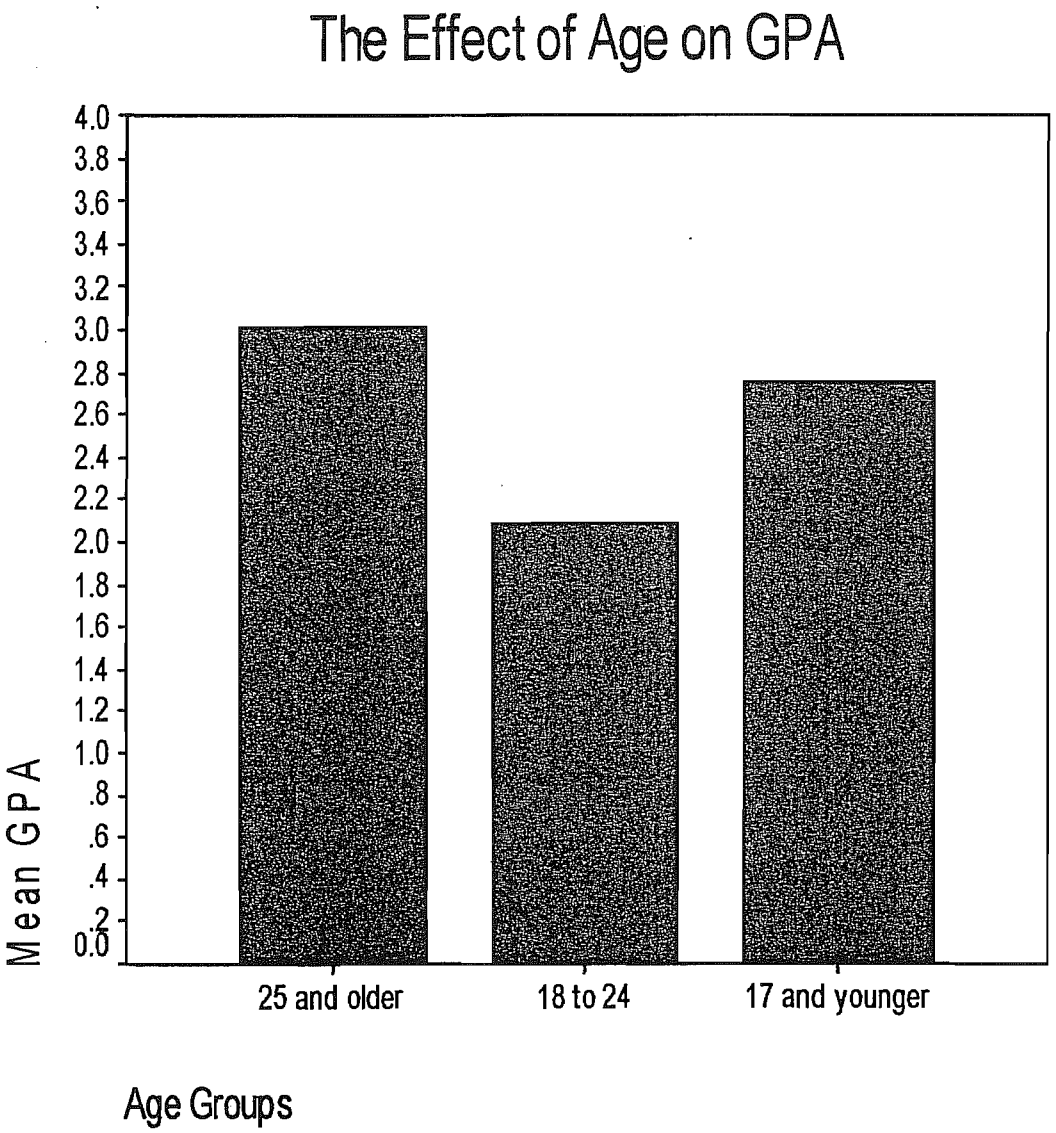
AGE	THEO 202		PHIL 201		ENGL 101		BIOL 101		MATH 201	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
24										
23										
22				1		1				1
21	1		1							
20							1			
19										
18										
17	1									
16								1		
15										
14										
13										
12										
COURSE TOTALS	2	0	1	1	0	1	1	1	0	1
COURSE TOTALS	**2**		**2**		**1**		**2**		**1**	

CONTINUED: COURSE WITHDRAWALS										
AGE	ACCT 212		BUSI 310		PSYC 321		PSYC 430		TOTAL BY AGE	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
24									0	1
23									0	0
22									0	6
21					1				4	1
20	1		1				1		8	0
19									0	1
18									0	0
17									2	0
16									0	1
15									0	0
14									0	0
13									0	0
12									0	0
COURSE TOTALS	1	0	1	0	1	0	1	0	14	10
COURSE TOTALS	1		1		1		1		24	

COURSE DIFFICULTY CHART BASED ON "F" GRADES											
ID #	Age	Gender	100 LEVEL	100 LEVEL	200 LEVEL	200 LEVEL	300 LEVEL	300 LEVEL	300 LEVEL	400 LEVEL	
222	24	M					CHMN 387	BIBL 323	BIBL350	BIBL 410	0.00
119	24	M					PSYC 380				1.80
180	24	F					PSYC 355		PSYC 341		0.00
181	24	F			ECNC 213						0.00
111	23	M					BUSI 310		BUSI 301		0.00
125	23	M			HIUS 221						2.00
138	23	M		BIBL 110			BIBL 350				1.00
170	23	M			PHIL 201						0.00
196	23	M			PSYC 200						1.50
131	23	F			GEED 205						2.00
144	23	F	MATH 100	ENGL 101							0.00
118	22	F			APOL 290	THEO 202					0.00
137	22	F		BIBL 105		PSYC 200					0.00
159	22	F		ENGL 101	APOL 290						0.00
187	22	F		BIBL 110							0.00
103	21	M	MATH 115								0.00
106	21	M		ENGL 101							0.00
112	21	F					PSYC 355				0.00
140	21	F			HIUS 221						0.00
202	20	F		ENGL 102							0.00
243	20	F	BIOL 101								2.00
168	18	F	ENGL 101								0.00

APPENDIX F

STATISTICAL ANAYLSIS



F(2,185)=19.273; p=.000
There is a significant effect of age on GPA.

Students age 25 and older earned GPAs significantly higher than students age 18 to 24 (p=.000) disproving hypothesis one.

Students age 17 and younger did not earn GPAs that differed significantly from the GPAs of students age 18 to 24 (p=.189) proving hypothesis three.

Students age 17 and younger did not earn GPAs that differed significantly from the GPAs of students age 25 and older (p=.588) proving hypothesis five.

The Effect of Age on GPA

Descriptives

GPA

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
25 and older	118	3.0174	.7673	7.064E-02	2.8775	3.1573	.00	4.00
18 to 24	66	2.0920	1.2674	.1560	1.7804	2.4035	.00	4.00
17 and younger	4	2.7500	.5000	.2500	1.9544	3.5456	2.00	3.00
Total	188	2.6868	1.0605	7.734E-02	2.5342	2.8394	.00	4.00

ANOVA

GPA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	36.263	2	18.132	19.273	.000
Within Groups	174.041	185	.941		
Total	210.304	187			

F(2,185)=19.273; p=.000
There is a significant effect of age on GPA.

Post Hoc Tests

Multiple Comparisons

Dependent Variable: GPA
LSD

(I) agrp2	(J) agrp2	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
25 and older	18 to 24	.9254*	.1491	.000	.6313	1.2195
	17 and younger	.2674	.4931	.588	-.7055	1.2402
18 to 24	25 and older	-.9254*	.1491	.000	-1.2195	-.6313
	17 and younger	-.6580	.4994	.189	-1.6434	.3273
17 and younger	25 and older	-.2674	.4931	.588	-1.2402	.7055
	18 to 24	.6580	.4994	.189	-.3273	1.6434

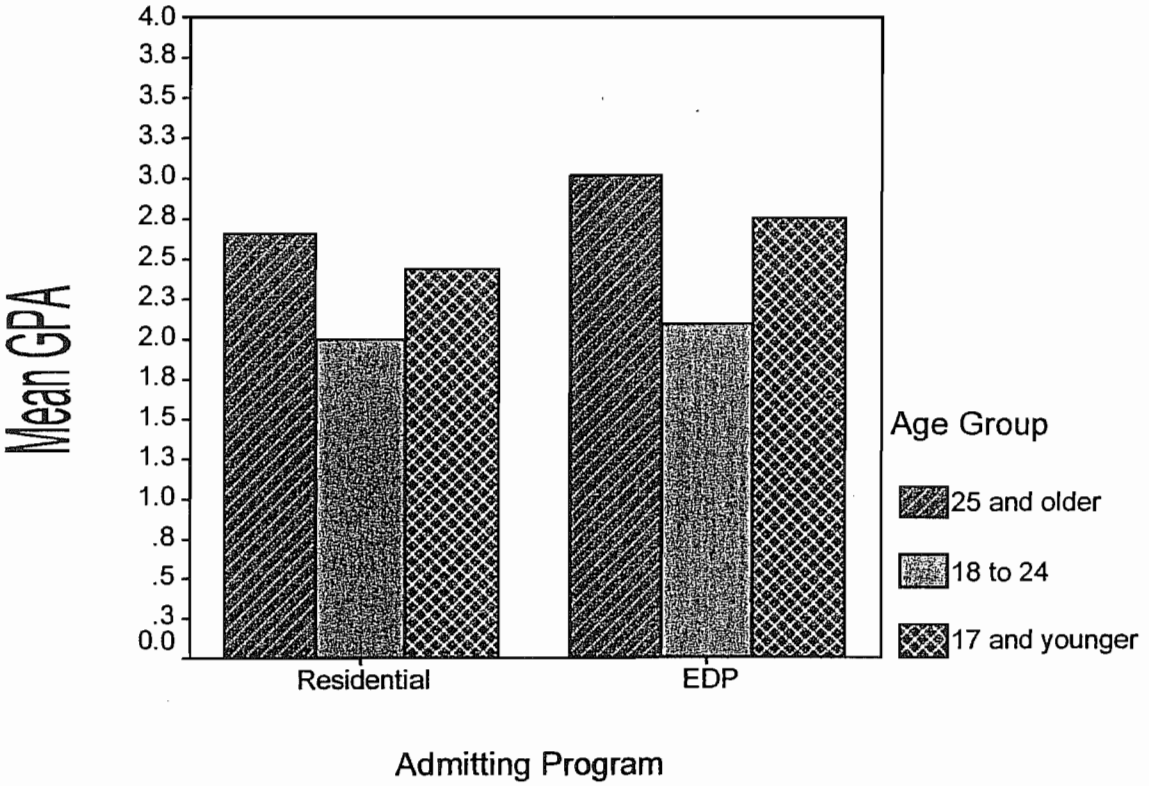
*. The mean difference is significant at the .05 level.

Students age 25 and older earned GPAs signifiacntly higher than students age 18 to 24 (p=.000) disproving hypothesis one.

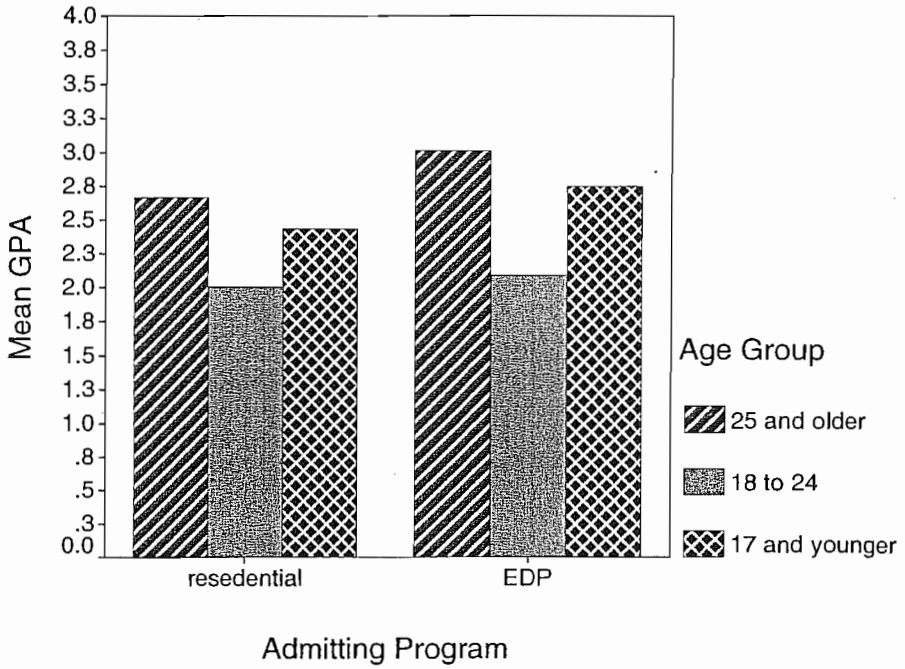
Students age 17 and younger did not earn GPAs that differed significantly from the GPAs of students age 18 to 24 (p=.189) proving hypothesis three.

Students age 17 and younger did not earn GPAs that differed significantly from the GPAs of students age and older (p=.588) proving hypothesis five.

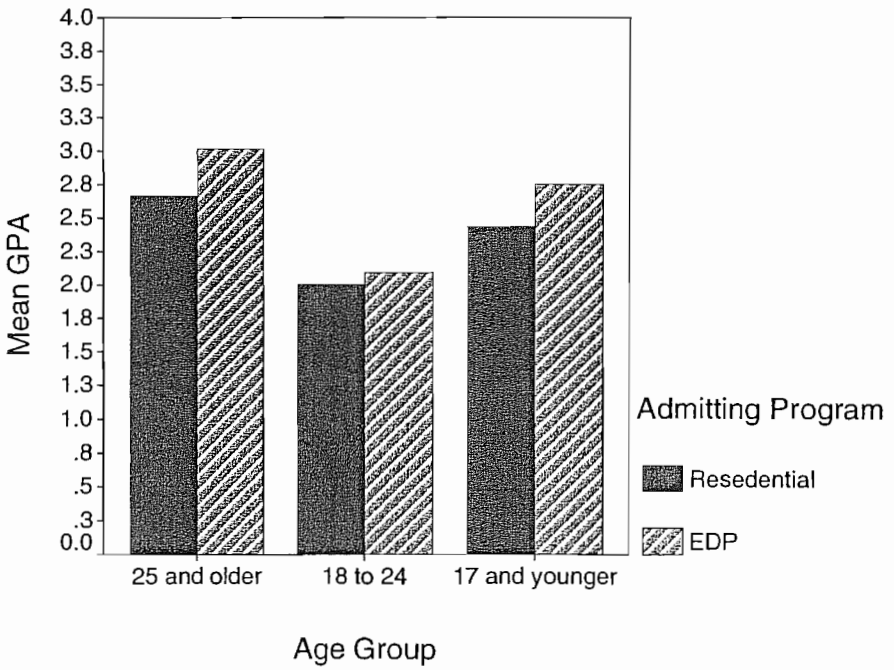
The Effect of Age and Admitting Program on GPA

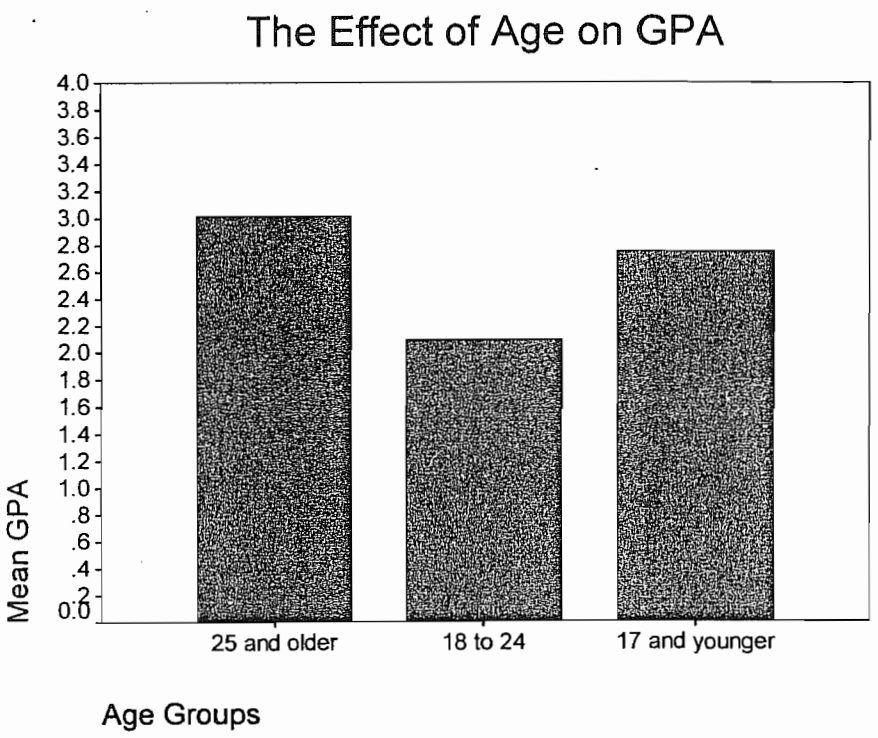


he Effect of Age and Admitting Pogram on GPA

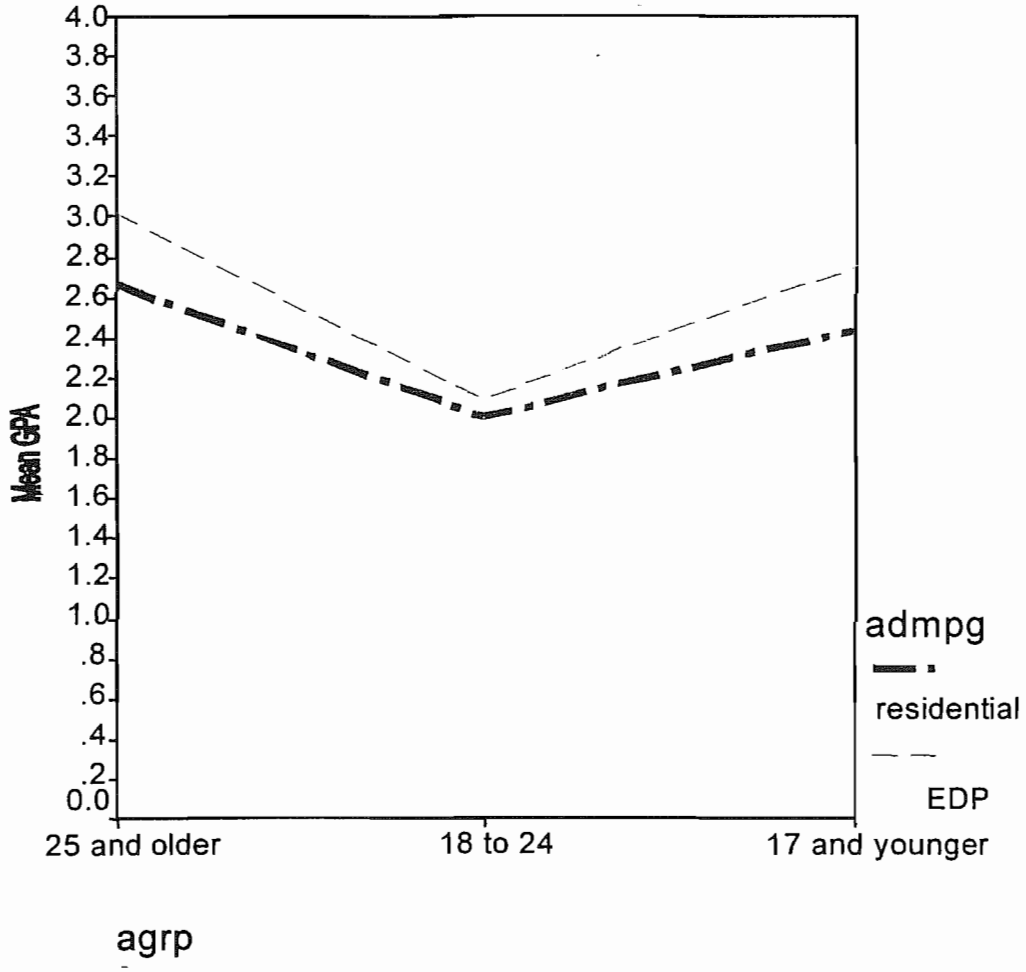


The Effect of Admitting Program on GPA




The Effect of Age on GPA
Mean GPA
4.0
3.8
3.6
3.4
3.2
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
.8
.6
.4
.2
0.0
25 and older
18 to 24
17 and younger
Age Groups

The Effect of Age and Admitting Program on GPA



External students consistently earn a higher GPA than residential students across all age groups, but not significantly so.

Students in both external and residential programs age 25 and older and age 17 and younger earn GPAs significantly higher than students age 18 to 24.

Students 25 and older earn GPAs only slightly higher than those of students 17 and younger in both the residential and external programs.

The Effect of Age and Admitting Program on GPA

Between-Subjects Factors

		Value Label	N
agrp2	1.00	25 and older	121
	2.00	18 to 24	104
	3.00	17 and younger	65
admpgm	1.00	resedential	102
	2.00	EDP	188

Descriptive Statistics

Dependent Variable: GPA

agrp2	admpgm	Mean	Std. Deviation	N
25 and older	resedential	2.6667	2.3094	3
	EDP	3.0174	.7673	118
	Total	3.0087	.8160	121
18 to 24	resedential	2.0045	1.0600	38
	EDP	2.0920	1.2674	66
	Total	2.0600	1.1912	104
17 and younger	resedential	2.4349	.9469	61
	EDP	2.7500	.5000	4
	Total	2.4543	.9264	65
Total	resedential	2.2814	1.0476	102
	EDP	2.6868	1.0605	188
	Total	2.5442	1.0718	290

Tests of Between-Subjects Effects

Dependent Variable: GPA

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	51.930[a]	5	10.386	10.531	.000
Intercept	344.735	1	344.735	349.563	.000
AGRP2	9.346	2	4.673	4.739	.009
ADMPGM	.873	1	.873	.886	.347
AGRP2 * ADMPGM	.311	2	.156	.158	.854
Error	280.077	284	.986		
Total	2209.174	290			
Corrected Total	332.007	289			

a. R Squared = .156 (Adjusted R Squared = .142)

F(2,284)=4.739; p=.009
There is a significant effect of age on GPA.

F(1,284)=.886; p=.347

There is no significant effect of admitting program on GPA.

F(2,284)=.158; p=.854
Age and admitting program do not interact to effect GPA.

Estimated Marginal Means

1. agrp2

Estimates

Dependent Variable: GPA

agrp2	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
25 and older	2.842	.290	2.271	3.413
18 to 24	2.048	.101	1.849	2.247
17 and younger	2.592	.256	2.088	3.097

Pairwise Comparisons

Dependent Variable: GPA

(I) agrp2	(J) agrp2	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a]	
					Lower Bound	Upper Bound
25 and older	18 to 24	.794*	.307	.010	.189	1.399
	17 and younger	.250	.387	.520	-.513	1.012
18 to 24	25 and older	-.794*	.307	.010	-1.399	-.189
	17 and younger	-.544*	.276	.049	-1.087	-1.950E-03
17 and younger	25 and older	-.250	.387	.520	-1.012	.513
	18 to 24	.544*	.276	.049	1.950E-03	1.087

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Students age 18 to 24 earn GPAs significantly lower than students age 25 and older (p=.010).

Students age 17 and younger earn a significantly higher GPA than students 18 to 24 (p=.049).

There is not a significant difference in GPA of students age 25 and older and students 17 and under.

Univariate Tests

Dependent Variable: GPA

	Sum of Squares	df	Mean Square	F	Sig.
Contrast	9.346	2	4.673	4.739	.009
Error	280.077	284	.986		

The F tests the effect of agrp2. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

2. admpgm

Estimates

Dependent Variable: GPA

admpgm	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
resedential	2.369	.203	1.969	2.768
EDP	2.620	.173	2.279	2.961

Pairwise Comparisons

Dependent Variable: GPA

(I) admpgm	(J) admpgm	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a]	
					Lower Bound	Upper Bound
resedential	EDP	-.251	.267	.347	-.776	.274
EDP	resedential	.251	.267	.347	-.274	.776

Based on estimated marginal means

a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Univariate Tests

Dependent Variable: GPA

	Sum of Squares	df	Mean Square	F	Sig.
Contrast	.873	1	.873	.886	.347
Error	280.077	284	.986		

The F tests the effect of admpgm. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

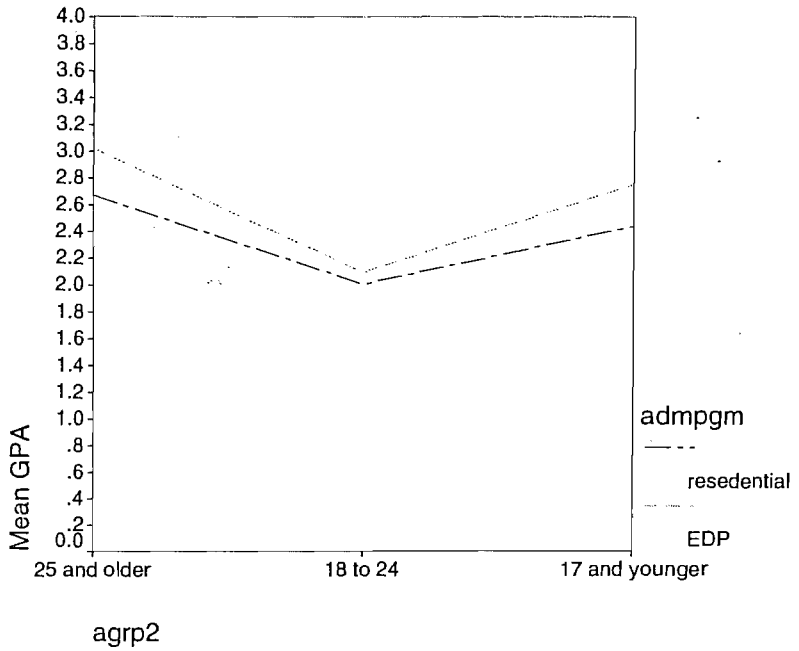
3. agrp2 * admpgm

Dependent Variable: GPA

agrp2	admpgm	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
25 and older	resedential	2.667	.573	1.538	3.795
	EDP	3.017	.091	2.837	3.197
18 to 24	resedential	2.004	.161	1.687	2.322
	EDP	2.092	.122	1.851	2.333
17 and younger	resedential	2.435	.127	2.185	2.685
	EDP	2.750	.497	1.773	3.727

There is no significant difference in the GPAs of students in any age group based upon their admitting program proving hypothesis (plural) 2 and 4.

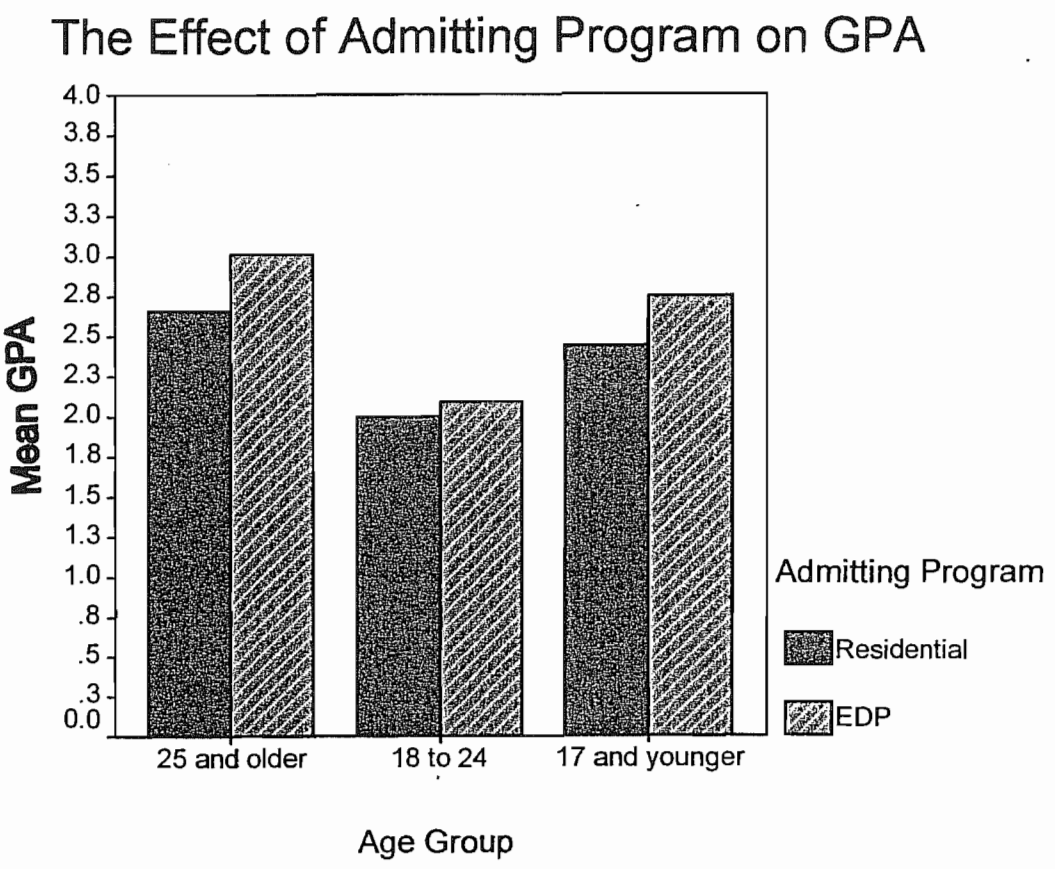
Graph

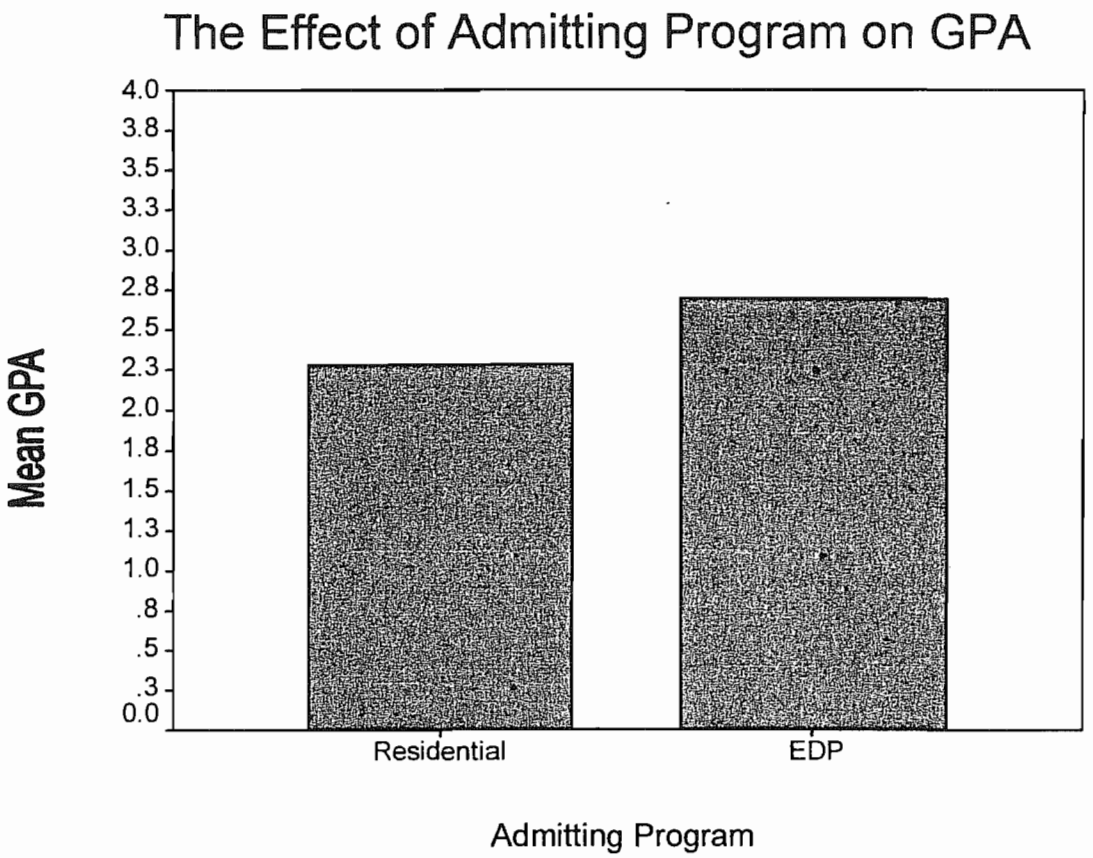


External students consistenly earn a higher GPA than residential students across all age groups, but not significantly so.

Students in both external and residential programs age 25 and older and age 17 and younger earn GPAs significantly higher than students age 18 to 24.

Students 25 and older earn GPAs only slightly higher than those of students 17 and younger in both the residential and external programs.


The Effect of Admitting Program on GPA
Mean GPA
4.0
3.8
3.5
3.3
3.0
2.8
2.5
2.3
2.0
1.8
1.5
1.3
1.0
.8
.5
.3
0.0
25 and older
18 to 24
17 and younger
Age Group
Admitting Program
Residential
EDP


The Effect of Admitting Program on GPA
Mean GPA
4.0
3.8
3.5
3.3
3.0
2.8
2.5
2.3
2.0
1.8
1.5
1.3
1.0
.8
.5
.3
0.0
Residential
EDP
Admitting Program

The Effect of Admitting Program on GPA

Group Statistics

	admpgm	N	Mean	Std. Deviation	Std. Error Mean
GPA	resedential	102	2.2814	1.0476	.1037
	EDP	188	2.6868	1.0605	7.734E-02

Independent Samples Test

		Levene's Test for Equality of Variances	
		F	Sig.
GPA	Equal variances assumed	.233	.630
	Equal variances not assumed		

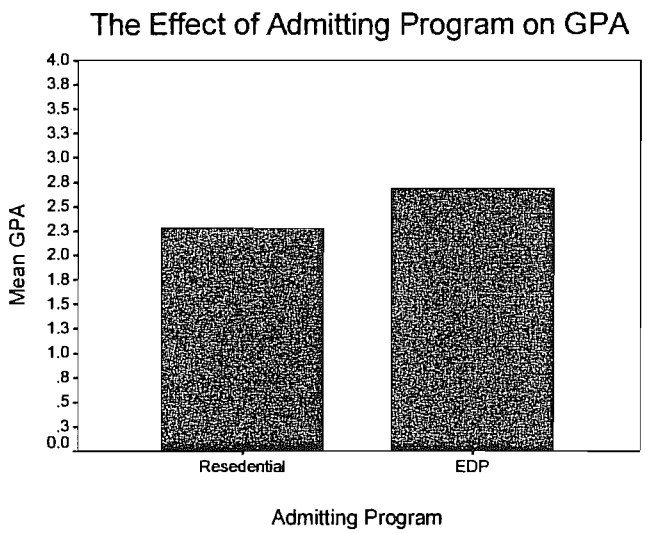
Independent Samples Test

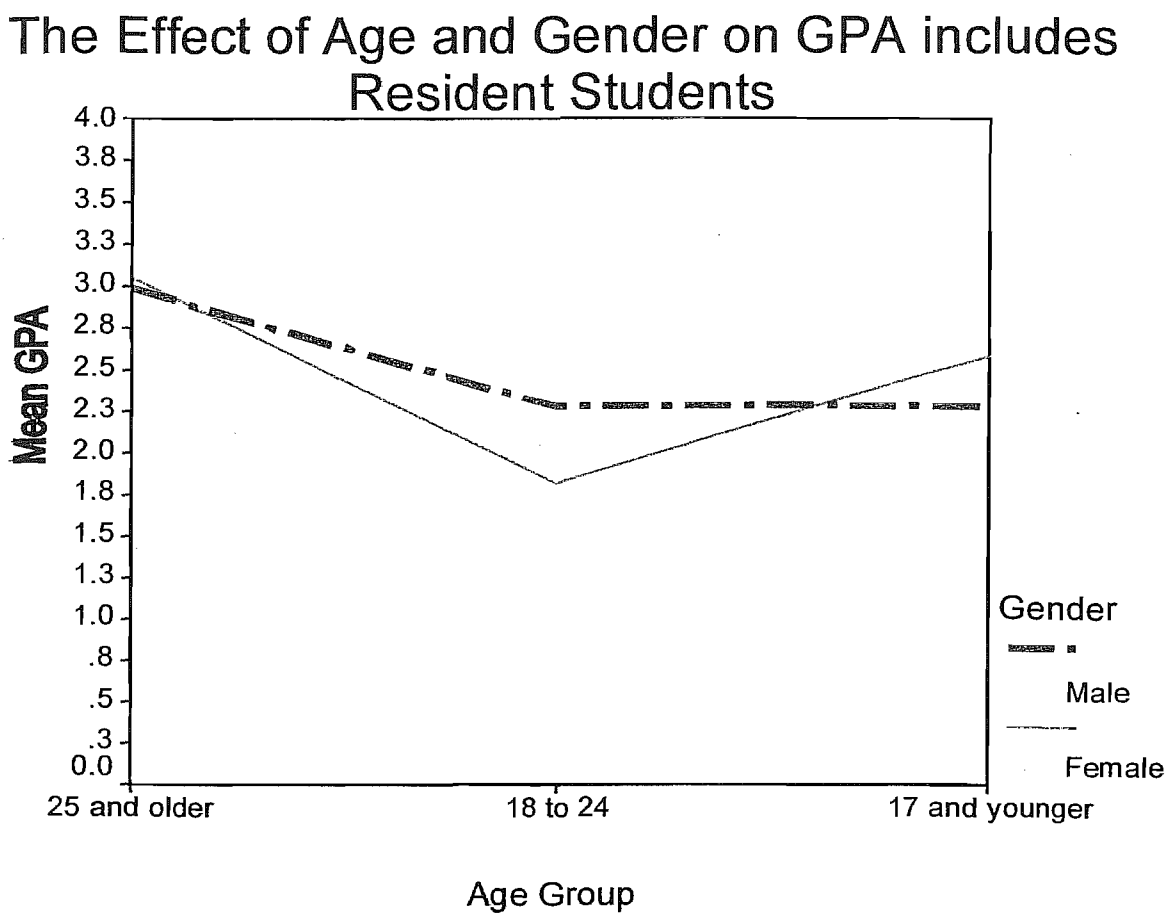
		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
GPA	Equal variances assumed	-3.122	288	.002	-.4054
	Equal variances not assumed	-3.134	209.552	.002	-.4054

Independent Samples Test

		t-test for Equality of Means		
		Std. Error Difference	95% Confidence Interval of the Difference	
			Lower	Upper
GPA	Equal variances assumed	.1299	-.6610	-.1498
	Equal variances not assumed	.1294	-.6605	-.1504

t(288)=-3.122; p=.002
There is a significant effect of admitting program on GPA.





Age:
F(2,284)=25.708; p=.000
There is a significant effect of age on GPA.

Gender:
F(1,284)=.066; p=.798
There is no significant effect of gender on GPA.

Interaction:
F(2,284)=3.370; p=.036
There is a significant interaction between age and gender.

There is a significant difference in the GPAs of students age 25 and older and students age 18 to 24 (p=.000) as well as students age 17 and under (p=.001).

There is a significant difference in GPAs of students age 18 to 24 and students age 17 and under (p=.035).

The Effect of Age and Gender on GPA

Between-Subjects Factors

		Value Label	N
agrp2	1.00	25 and older	121
	2.00	18 to 24	104
	3.00	17 and younger	65
gender	1.00	male	163
	2.00	female	127

Descriptive Statistics

Dependent Variable: GPA

agrp2	gender	Mean	Std. Deviation	N
25 and older	male	2.9867	.8385	81
	female	3.0533	.7771	40
	Total	3.0087	.8160	121
18 to 24	male	2.2834	1.1706	53
	female	1.8278	1.1791	51
	Total	2.0600	1.1912	104
17 and younger	male	2.2907	1.0179	29
	female	2.5861	.8368	36
	Total	2.4543	.9264	65
Total	male	2.6342	1.0438	163
	female	2.4287	1.1001	127
	Total	2.5442	1.0718	290

Tests of Between-Subjects Effects

Dependent Variable: GPA

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	57.927[a]	5	11.585	12.005	.000
Intercept	1635.546	1	1635.546	1694.742	.000
AGRP2	49.619	2	24.810	25.708	.000
GENDER	6.338E-02	1	6.338E-02	.066	.798
AGRP2 * GENDER	6.504	2	3.252	3.370	.036
Error	274.080	284	.965		
Total	2209.174	290			
Corrected Total	332.007	289			

a. R Squared = .174 (Adjusted R Squared = .160)

```
Age:
F(2,284)=25.708; p=.000
There is a significant effect of age on GPA.

Gender:
F(1,284)=.066; p=.798
There is no significant effect of gender on GPA.

Interaction:
F(2,284)=3.370; p=.036
There is a significant interaction between age and gender.
```

Estimated Marginal Means

1. agrp2

Dependent Variable: GPA

agrp2	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
25 and older	3.020	.095	2.833	3.207
18 to 24	2.056	.096	1.866	2.245
17 and younger	2.438	.123	2.197	2.680

2. gender

Dependent Variable: GPA

gender	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
male	2.520	.084	2.355	2.685
female	2.489	.088	2.316	2.662

3. agrp2 * gender

Dependent Variable: GPA

agrp2	gender	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
25 and older	male	2.987	.109	2.772	3.202
	female	3.053	.155	2.748	3.359
18 to 24	male	2.283	.135	2.018	2.549
	female	1.828	.138	1.557	2.099
17 and younger	male	2.291	.182	1.932	2.650
	female	2.586	.164	2.264	2.908

Post Hoc Tests

agrp2

Multiple Comparisons

Dependent Variable: GPA
Bonferroni

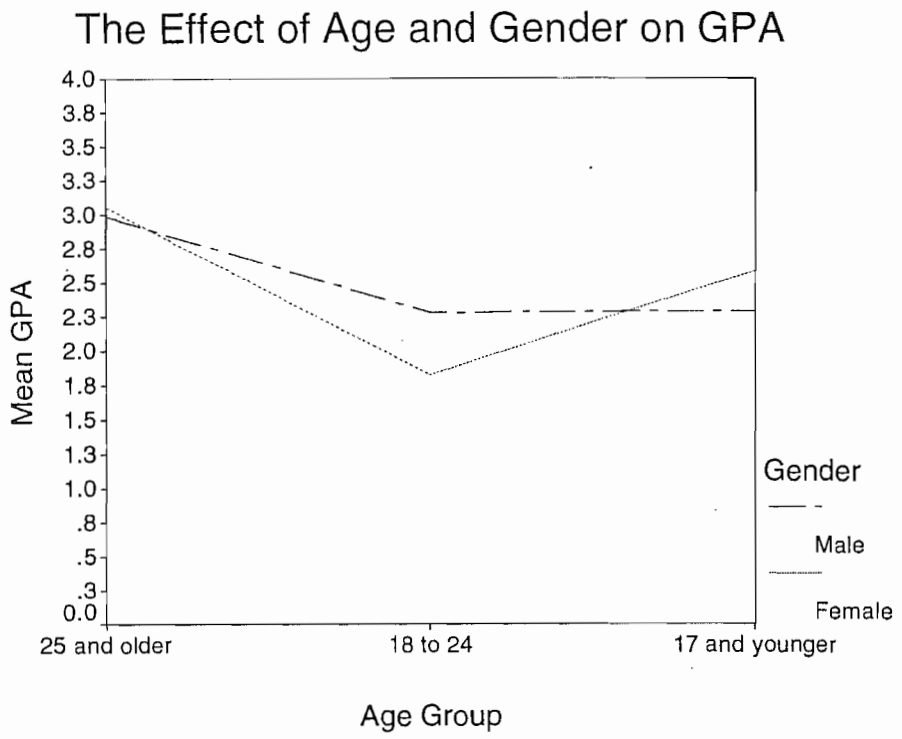
(I) agrp2	(J) agrp2	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
25 and older	18 to 24	.9487*	.1314	.000	.6323	1.2650
	17 and younger	.5544*	.1511	.001	.1905	.9182
18 to 24	25 and older	-.9487*	.1314	.000	-1.2650	-.6323
	17 and younger	-.3943*	.1553	.035	-.7684	-2.02E-02
17 and younger	25 and older	-.5544*	.1511	.001	-.9182	-.1905
	18 to 24	.3943*	.1553	.035	2.024E-02	.7684

Based on observed means.

*. The mean difference is significant at the .05 level.

There is a significant difference in the GPAs of students age 25 and older and students age 18 to 24 (p=.000) as well as students age 17 and uneder (p=.001).

There is a significant difference in GPAs of students age 18 to 24 and students age 17 and under (p=.035).


The Effect of Age and Gender on GPA
Mean GPA
4.0
3.8
3.5
3.3
3.0
2.8
2.5
2.3
2.0
1.8
1.5
1.3
1.0
.8
.5
.3
0.0
25 and older
18 to 24
17 and younger
Age Group
Gender
Male
Female

The Effect of Admitting Program on GPA

Group Statistics

	admpgm	N	Mean	Std. Deviation	Std. Error Mean
GPA	residential	102	2.2814	1.0476	.1037
	EDP	188	2.6868	1.0605	7.734E-02

Independent Samples Test

		Levene's Test for Equality of Variances	
		F	Sig.
GPA	Equal variances assumed	.233	.630
	Equal variances not assumed		

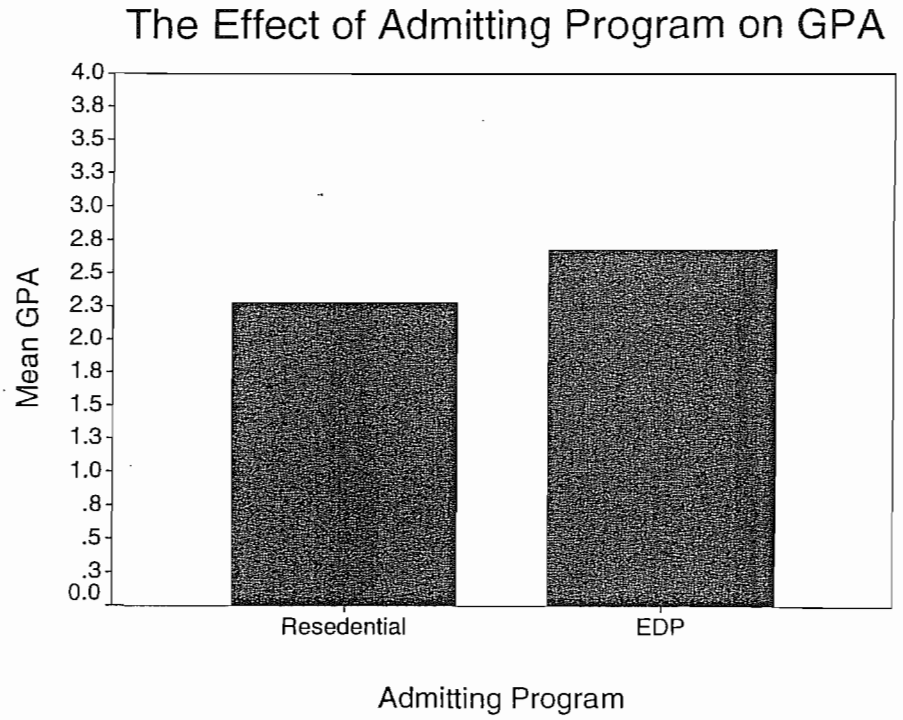
Independent Samples Test

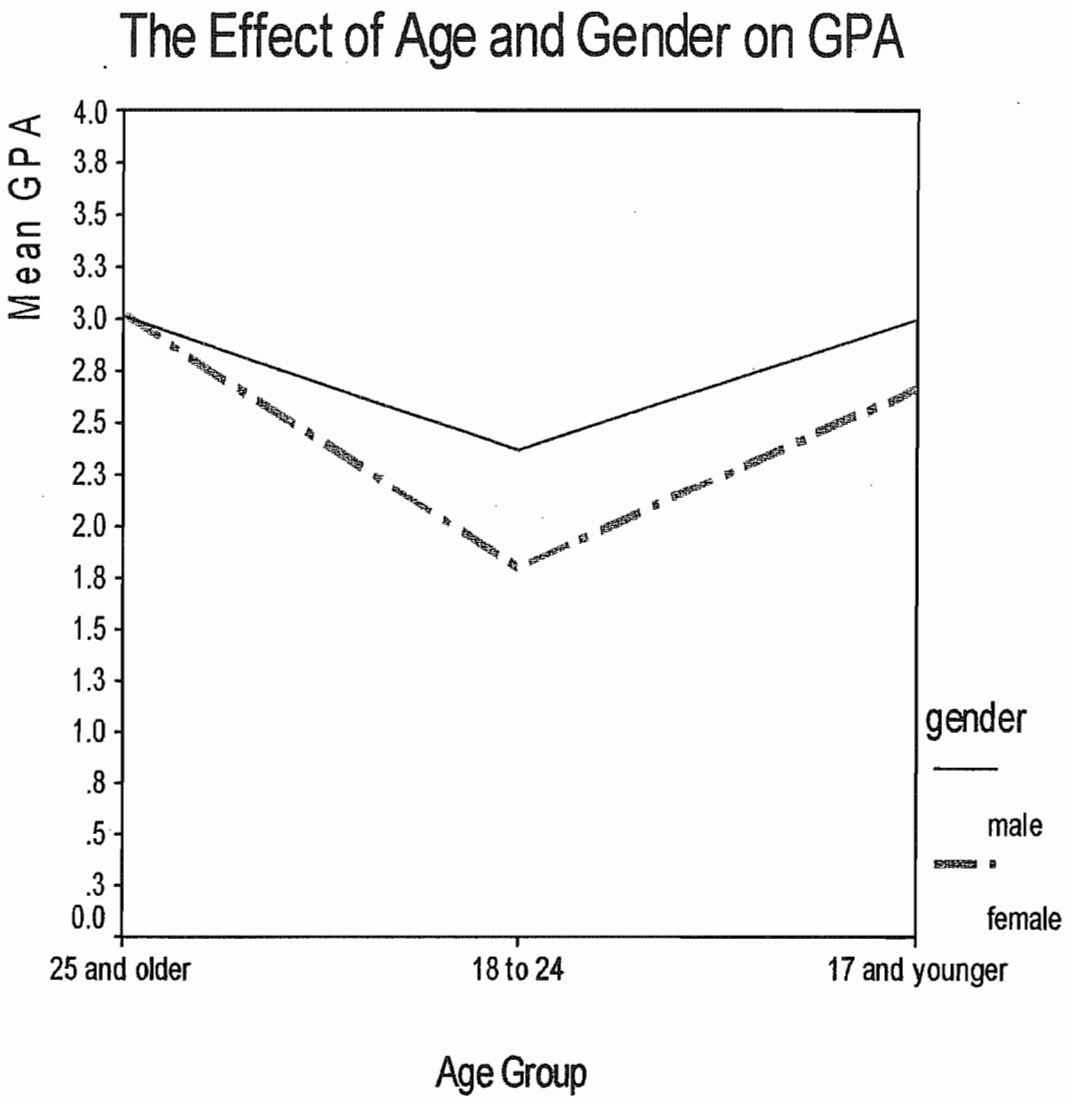
		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
GPA	Equal variances assumed	-3.122	288	.002	-.4054
	Equal variances not assumed	-3.134	209.552	.002	-.4054

Independent Samples Test

		t-test for Equality of Means		
		Std. Error Difference	95% Confidence Interval of the Difference	
			Lower	Upper
GPA	Equal variances assumed	.1299	-.6610	-.1498
	Equal variances not assumed	.1294	-.6605	-.1504

t(288)=-3.122; p=.002
There is a significant effect of admitting program on GPA.





F(2,182)=19.184; p=.000
There is a significant effect of age on GPA.

F(1,182)=.582; p=.446
There is not a significant effect of gender on GPA.

F(2,182)=1.843; p=.161
There is not a significant interaction of age and gender on GPA.

The Effect of Age and Gender on GPA

Between-Subjects Factors

		Value Label	N
agrp2	1.00	25 and older	118
	2.00	18 to 24	66
	3.00	17 and younger	4
gender	1.00	male	114
	2.00	female	74

Descriptive Statistics

Dependent Variable: GPA

agrp2	gender	Mean	Std. Deviation	N
25 and older	male	3.0116	.7700	79
	female	3.0290	.7717	39
	Total	3.0174	.7673	118
18 to 24	male	2.3650	1.2336	34
	female	1.8019	1.2567	32
	Total	2.0920	1.2674	66
17 and younger	male	3.0000	.	1
	female	2.6667	.5774	3
	Total	2.7500	.5000	4
Total	male	2.8187	.9705	114
	female	2.4836	1.1636	74
	Total	2.6868	1.0605	188

Tests of Between-Subjects Effects

Dependent Variable: GPA

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	41.582[a]	5	8.316	8.971	.000
Intercept	175.934	1	175.934	189.779	.000
AGRP2	35.569	2	17.784	19.184	.000
GENDER	.540	1	.540	.582	.446
AGRP2 * GENDER	3.416	2	1.708	1.843	.161
Error	168.722	182	.927		
Total	1567.465	188			
Corrected Total	210.304	187			

a. R Squared = .198 (Adjusted R Squared = .176)

F(2,182)=19.184; p=.000
There is a significant effect of age on GPA.

F(1,182)=.582; p=.446
There is not a significant effect of gender on GPA.

F(2,182)=1.843; p=.161
There is not a significant interaction of age and gender on GPA.

Estimated Marginal Means

1. agrp2

Estimates

Dependent Variable: GPA

agrp2	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
25 and older	3.020	.094	2.834	3.206
18 to 24	2.083	.119	1.849	2.317
17 and younger	2.833	.556	1.737	3.930

Pairwise Comparisons

Dependent Variable: GPA

(I) agrp2	(J) agrp2	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a]	
					Lower Bound	Upper Bound
25 and older	18 to 24	.937*	.151	.000	.638	1.236
	17 and younger	.187	.564	.741	-.925	1.299
18 to 24	25 and older	-.937*	.151	.000	-1.236	-.638
	17 and younger	-.750	.568	.189	-1.871	.372
17 and younger	25 and older	-.187	.564	.741	-1.299	.925
	18 to 24	.750	.568	.189	-.372	1.871

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Univariate Tests

Dependent Variable: GPA

	Sum of Squares	df	Mean Square	F	Sig.
Contrast	35.569	2	17.784	19.184	.000
Error	168.722	182	.927		

The F tests the effect of agrp2. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

2. gender

Estimates

Dependent Variable: GPA

gender	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
male	2.792	.328	2.146	3.439
female	2.499	.200	2.104	2.895

Pairwise Comparisons

Dependent Variable: GPA

(I) gender	(J) gender	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a]	
					Lower Bound	Upper Bound
male	female	.293	.384	.446	-.465	1.051
female	male	-.293	.384	.446	-1.051	.465

Based on estimated marginal means

a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Univariate Tests

Dependent Variable: GPA

	Sum of Squares	df	Mean Square	F	Sig.
Contrast	.540	1	.540	.582	.446
Error	168.722	182	.927		

The F tests the effect of gender. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

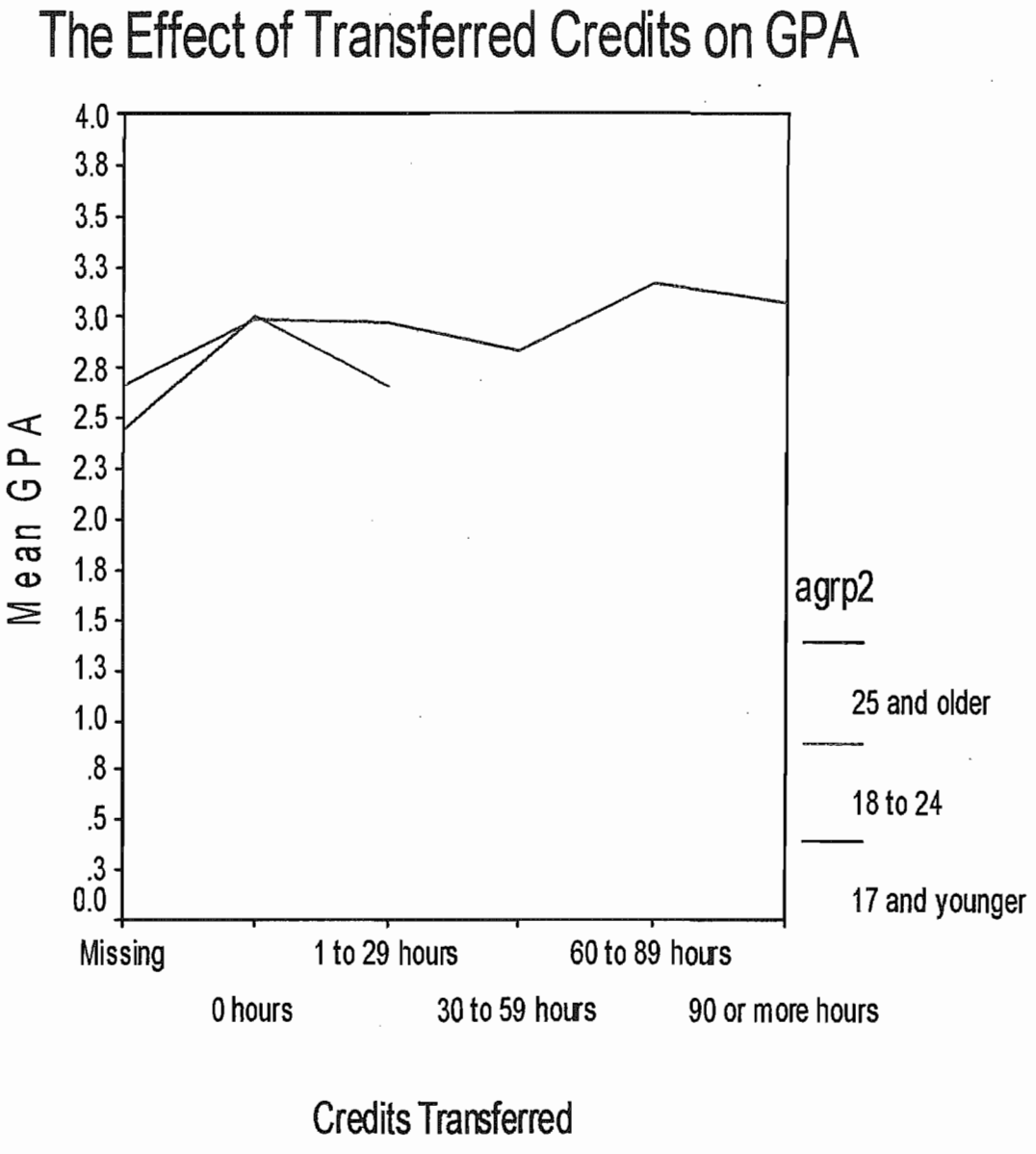
3. agrp2 * gender

Dependent Variable: GPA

agrp2	gender	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
25 and older	male	3.012	.108	2.798	3.225
	female	3.029	.154	2.725	3.333
18 to 24	male	2.365	.165	2.039	2.691
	female	1.802	.170	1.466	2.138
17 and younger	male	3.000	.963	1.100	4.900
	female	2.667	.556	1.570	3.763

Graph


The Effect of Age and Gender on GPA
Mean GPA
4.0
3.8
3.5
3.3
3.0
2.8
2.5
2.3
2.0
1.8
1.5
1.3
1.0
.8
.5
.3
0.0
25 and older
18 to 24
17 and younger
Age Group
gender
male
female



There is no significant effect of any amount of transferred credit on GPA.

The Effect of Age and Credits Transferred on GPA

Between-Subjects Factors

		Value Label	N
agrp2	1.00	25 and older	118
	3.00	17 and younger	4
crdtrns	1.00	0 hours	26
	2.00	1 to 29 hours	17
	3.00	30 to 59 hours	22
	4.00	60 to 89 hours	26
	5.00	90 or more hours	31

Descriptive Statistics

Dependent Variable: GPA

agrp2	crdtrns	Mean	Std. Deviation	N
25 and older	0 hours	2.9952	.8326	25
	1 to 29 hours	2.9707	.5883	14
	30 to 59 hours	2.8291	.9853	22
	60 to 89 hours	3.1619	.4332	26
	90 or more hours	3.0687	.8410	31
	Total	3.0174	.7673	118
17 and younger	0 hours	3.0000	.	1
	1 to 29 hours	2.6667	.5774	3
	Total	2.7500	.5000	4
Total	0 hours	2.9954	.8158	26
	1 to 29 hours	2.9171	.5806	17
	30 to 59 hours	2.8291	.9853	22
	60 to 89 hours	3.1619	.4332	26
	90 or more hours	3.0687	.8410	31
	Total	3.0086	.7601	122

Tests of Between-Subjects Effects

Dependent Variable: GPA

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1.808[a]	6	.301	.509	.801
Intercept	138.502	1	138.502	233.880	.000
AGRP2	6.198E-02	1	6.198E-02	.105	.747
CRDTRNS	1.527	4	.382	.645	.632
AGRP2 * CRDTRNS	6.602E-02	1	6.602E-02	.111	.739
Error	68.102	115	.592		
Total	1174.219	122			
Corrected Total	69.910	121			

a. R Squared = .026 (Adjusted R Squared = -.025)

Estimated Marginal Means

1. agrp2

Estimates

Dependent Variable: GPA

agrp2	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
25 and older	3.005	.073	2.860	3.151
17 and younger	2.833[a]	.444	1.953	3.713

a. Based on modified population marginal mean.

Pairwise Comparisons

Dependent Variable: GPA

(I) agrp2	(J) agrp2	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a]	
					Lower Bound	Upper Bound
25 and older	17 and younger	.172[b]	.450	.704	-.720	1.064
17 and younger	25 and older	-.172[c]	.450	.704	-1.064	.720

Based on estimated marginal means

a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

b. An estimate of the modified population marginal mean (J).

c. An estimate of the modified population marginal mean (I).

Univariate Tests

Dependent Variable: GPA

	Sum of Squares	df	Mean Square	F	Sig.
Contrast	8.619E-02	1	8.619E-02	.146	.704
Error	68.102	115	.592		

The F tests the effect of agrp2. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

2. crdtrns

Estimates

Dependent Variable: GPA

			95% Confidence Interval	
crdtrns	Mean	Std. Error	Lower Bound	Upper Bound
0 hours	2.998	.392	2.220	3.775
1 to 29 hours	2.819	.245	2.334	3.304
30 to 59 hours	2.829[a]	.164	2.504	3.154
60 to 89 hours	3.162[a]	.151	2.863	3.461
90 or more hours	3.069[a]	.138	2.795	3.342

a. Based on modified population marginal mean.

Pairwise Comparisons

Dependent Variable: GPA

(I) crdtrns	(J) crdtrns	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a]	
					Lower Bound	Upper Bound
0 hours	1 to 29 hours	.179	.462	.700	-.737	1.095
	30 to 59 hours	.169[b]	.425	.693	-.674	1.011
	60 to 89 hours	-.164[b]	.420	.697	-.997	.668
	90 or more hours	-7.111E-02[b]	.416	.865	-.895	.753
1 to 29 hours	0 hours	-.179	.462	.700	-1.095	.737
	30 to 59 hours	-1.040E-02[b]	.295	.972	-.594	.573
	60 to 89 hours	-.343[b]	.288	.235	-.913	.226
	90 or more hours	-.250[b]	.281	.376	-.807	.307
30 to 59 hours	0 hours	-.169[c]	.425	.693	-1.011	.674
	1 to 29 hours	1.040E-02[c]	.295	.972	-.573	.594
	60 to 89 hours	-.333[c,]	.223	.138	-.774	.109
	90 or more hours	-.240[c,]	.215	.266	-.665	.185
60 to 89 hours	0 hours	.164[c]	.420	.697	-.668	.997
	1 to 29 hours	.343[c]	.288	.235	-.226	.913
	30 to 59 hours	.333[c,]	.223	.138	-.109	.774
	90 or more hours	9.321E-02[c,]	.205	.650	-.312	.499
90 or more hours	0 hours	7.111E-02[c]	.416	.865	-.753	.895
	1 to 29 hours	.250[c]	.281	.376	-.307	.807
	30 to 59 hours	.240[c,]	.215	.266	-.185	.665
	60 to 89 hours	-9.321E-02[c,]	.205	.650	-.499	.312

Based on estimated marginal means

a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

b. An estimate of the modified population marginal mean (J).

c. An estimate of the modified population marginal mean (I).

Univariate Tests

Dependent Variable: GPA

	Sum of Squares	df	Mean Square	F	Sig.
Contrast	1.789	4	.447	.755	.557
Error	68.102	115	.592		

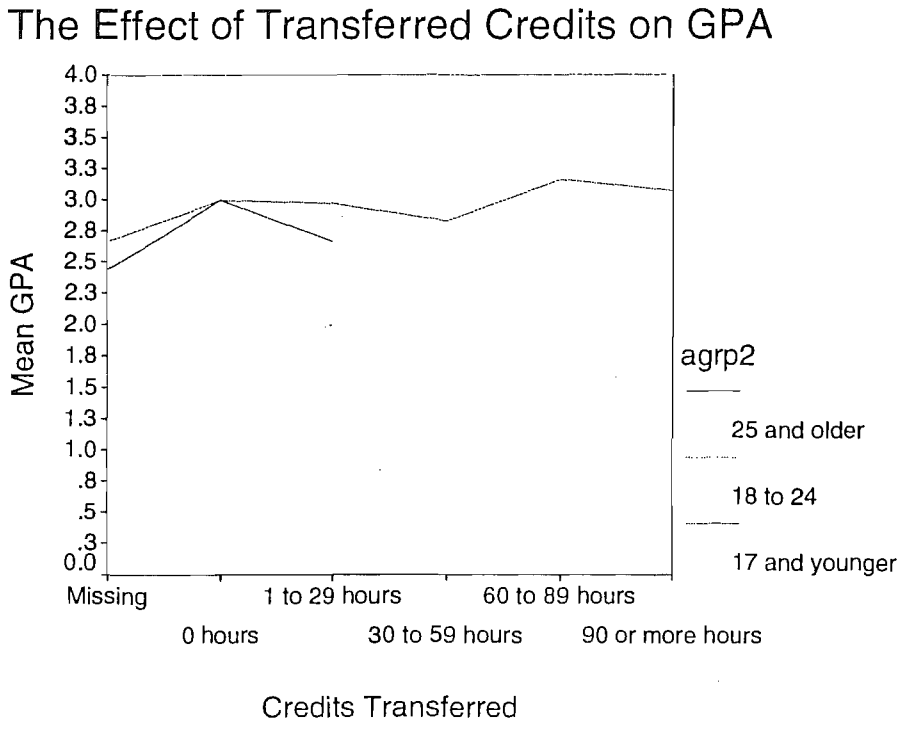
The F tests the effect of crdtrns. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

3. agrp2 * crdtrns

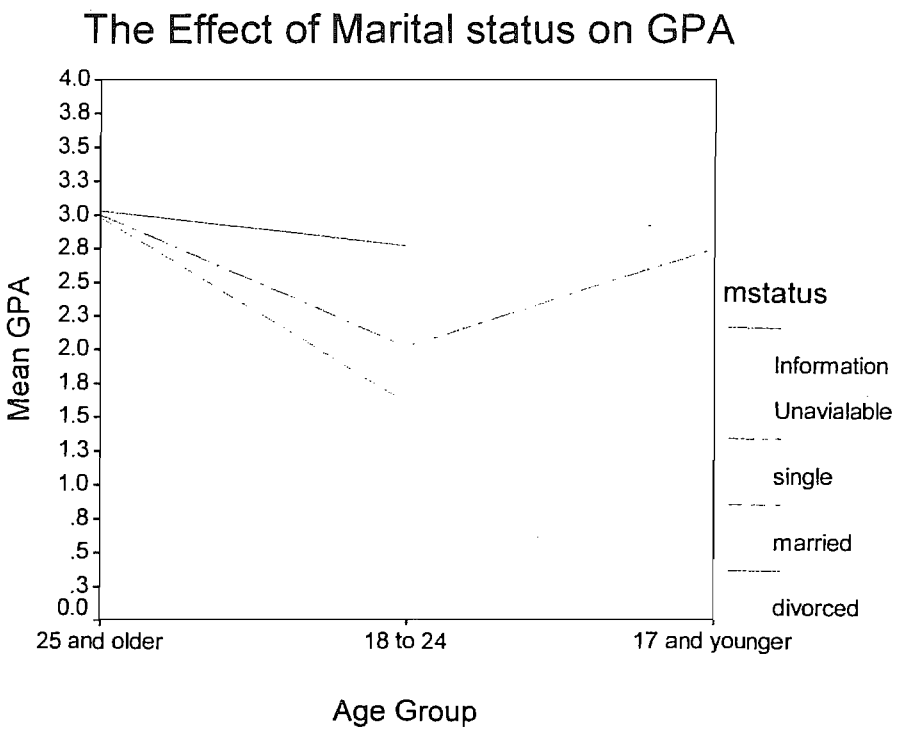
Dependent Variable: GPA

agrp2	crdtrns	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
25 and older	0 hours	2.995	.154	2.690	3.300
	1 to 29 hours	2.971	.206	2.563	3.378
	30 to 59 hours	2.829	.164	2.504	3.154
	60 to 89 hours	3.162	.151	2.863	3.461
	90 or more hours	3.069	.138	2.795	3.342
17 and younger	0 hours	3.000	.770	1.476	4.524
	1 to 29 hours	2.667	.444	1.787	3.547
	30 to 59 hours	.[a]	.	.	.
	60 to 89 hours	.[a]	.	.	.
	90 or more hours	.[a]	.	.	.

a. This level combination of factors is not observed, thus the corresponding population marginal mean is not estimabl



There is no significant effect of any amount of transferred credit on GPA.


The Effect of Marital status on GPA
Mean GPA
4.0
3.8
3.5
3.3
3.0
2.8
2.5
2.3
2.0
1.8
1.5
1.3
1.0
.8
.5
.3
0.0
25 and older
18 to 24
17 and younger
Age Group
mstatus
Information
Unavialable
single
married
divorced

The Effect of Marital Status on GPA

Between-Subjects Factors

		Value Label	N
agrp2	1.00	25 and older	44
	2.00	18 to 24	52
	3.00	17 and younger	4
mstatus	1.00	single	52
	2.00	married	47
	3.00	divorced	1

Descriptive Statistics

Dependent Variable: GPA

agrp2	mstatus	Mean	Std. Deviation	N
25 and older	single	3.0070	.6701	10
	married	2.9864	.8754	33
	divorced	3.0000	.	1
	Total	2.9914	.8151	44
18 to 24	single	2.0216	1.2290	38
	married	1.6071	1.4830	14
	Total	1.9100	1.3003	52
17 and younger	single	2.7500	.5000	4
	Total	2.7500	.5000	4
Total	single	2.2671	1.1663	52
	married	2.5755	1.2495	47
	divorced	3.0000	.	1
	Total	2.4194	1.2055	100

Tests of Between-Subjects Effects

Dependent Variable: GPA

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	30.085[a]	5	6.017	4.971	.000
Intercept	85.017	1	85.017	70.231	.000
AGRP2	25.904	2	12.952	10.699	.000
MSTATUS	.835	2	.417	.345	.709
AGRP2 * MSTATUS	.680	1	.680	.562	.455
Error	113.791	94	1.211		
Total	729.226	100			
Corrected Total	143.877	99			

a. R Squared = .209 (Adjusted R Squared = .167)

F(2,94)=.345; p=.709
There is no effect of marital status on GPA.

Estimated Marginal Means

agrp2

Estimates

Dependent Variable: GPA

agrp2	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
25 and older	2.998	.390	2.224	3.772
18 to 24	1.814[a]	.172	1.473	2.156
17 and younger	2.750[a]	.550	1.658	3.842

a. Based on modified population marginal mean.

Pairwise Comparisons

Dependent Variable: GPA

(I) agrp2	(J) agrp2	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a]	
					Lower Bound	Upper Bound
25 and older	18 to 24	1.183*,[b]	.426	.007	.337	2.030
	17 and younger	.248[b]	.674	.714	-1.091	1.587
18 to 24	25 and older	-1.183*,[c]	.426	.007	-2.030	-.337
	17 and younger	-.936[c,]	.576	.108	-2.080	.209
17 and younger	25 and older	-.248[c]	.674	.714	-1.587	1.091
	18 to 24	.936[c,]	.576	.108	-.209	2.080

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

b. An estimate of the modified population marginal mean (J).

c. An estimate of the modified population marginal mean (I).

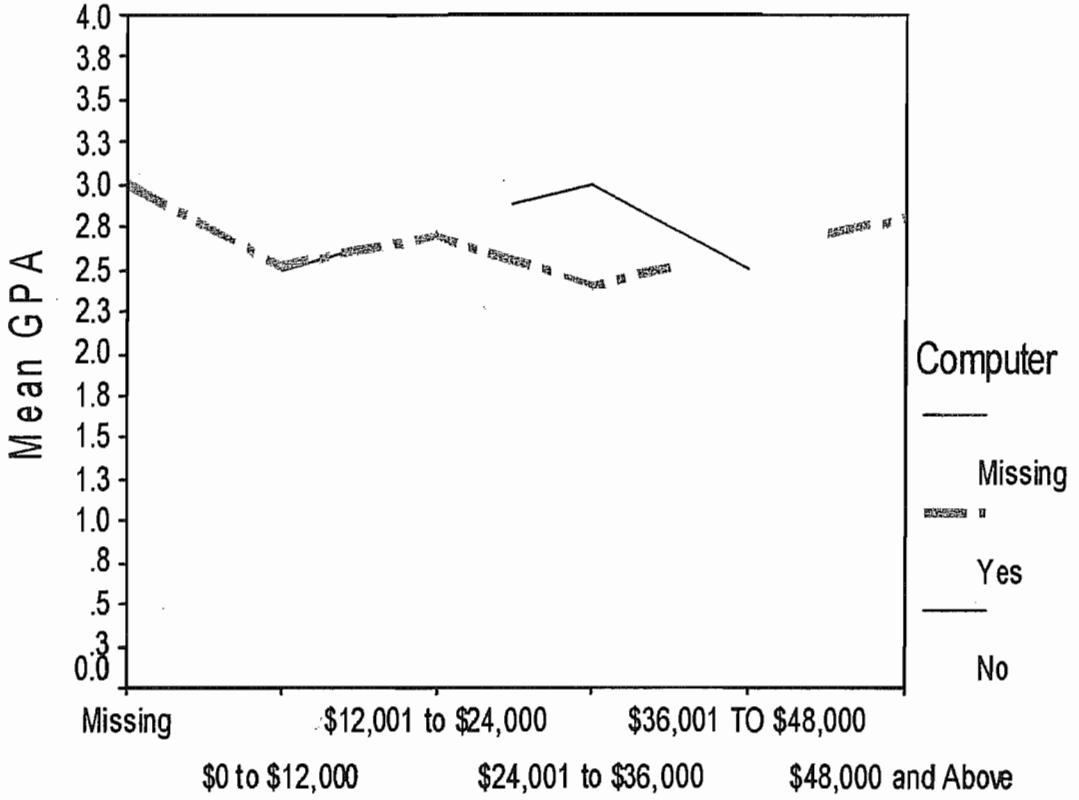
Univariate Tests

Dependent Variable: GPA

	Sum of Squares	df	Mean Square	F	Sig.
Contrast	11.376	2	5.688	4.699	.011
Error	113.791	94	1.211		

The F tests the effect of agrp2. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

The Effect of Computer Access and Economic Status on GPA



Computer:
F(1,25)=.309; p=.583
There is no significant effect of computer access on GPA.

Economic Status:
F(4,25)=.239; p=.914
There is no significant effect of economic status on GPA.

The Effect of Computer Access and Economic Status on GPA

Between-Subjects Factors

		Value Label	N
Computer	1.00	Yes	26
	2.00	No	6
Economic	1.00	$0 to $12,000	12
	2.00	$12,001 to $24,000	8
	3.00	$24,001 to $36,000	6
	4.00	$36,001 TO $48,000	1
	5.00	$48,000 and Above	5

Descriptive Statistics

Dependent Variable: GPA

Computer	Economic	Mean	Std. Deviation	N
Yes	$0 to $12,000	2.5200	.7094	8
	$12,001 to $24,000	2.6975	.5706	8
	$24,001 to $36,000	2.4000	1.5572	5
	$48,000 and Above	2.8000	.4472	5
	Total	2.6054	.8204	26
No	$0 to $12,000	2.5000	.5774	4
	$24,001 to $36,000	3.0000	.	1
	$36,001 TO $48,000	2.5000	.	1
	Total	2.5833	.4916	6
Total	$0 to $12,000	2.5133	.6413	12
	$12,001 to $24,000	2.6975	.5706	8
	$24,001 to $36,000	2.5000	1.4142	6
	$48,000 and Above	2.8000	.4472	5
	$36,001 TO $48,000	2.5000	.	1
	Total	2.6012	.7628	32

Tests of Between-Subjects Effects

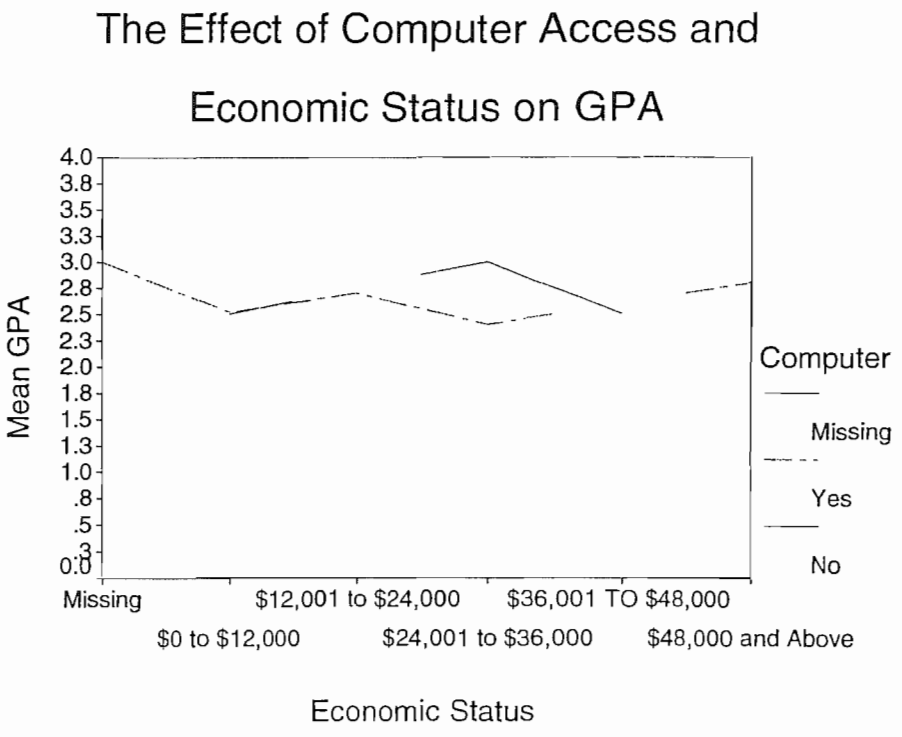
Dependent Variable: GPA

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	.737[a]	6	.123	.178	.980
Intercept	94.963	1	94.963	137.216	.000
COMPUTER	.214	1	.214	.309	.583
ECONOMIC	.661	4	.165	.239	.914
COMPUTER * ECONOMIC	.244	1	.244	.353	.558
Error	17.302	25	.692		
Total	234.567	32			
Corrected Total	18.039	31			

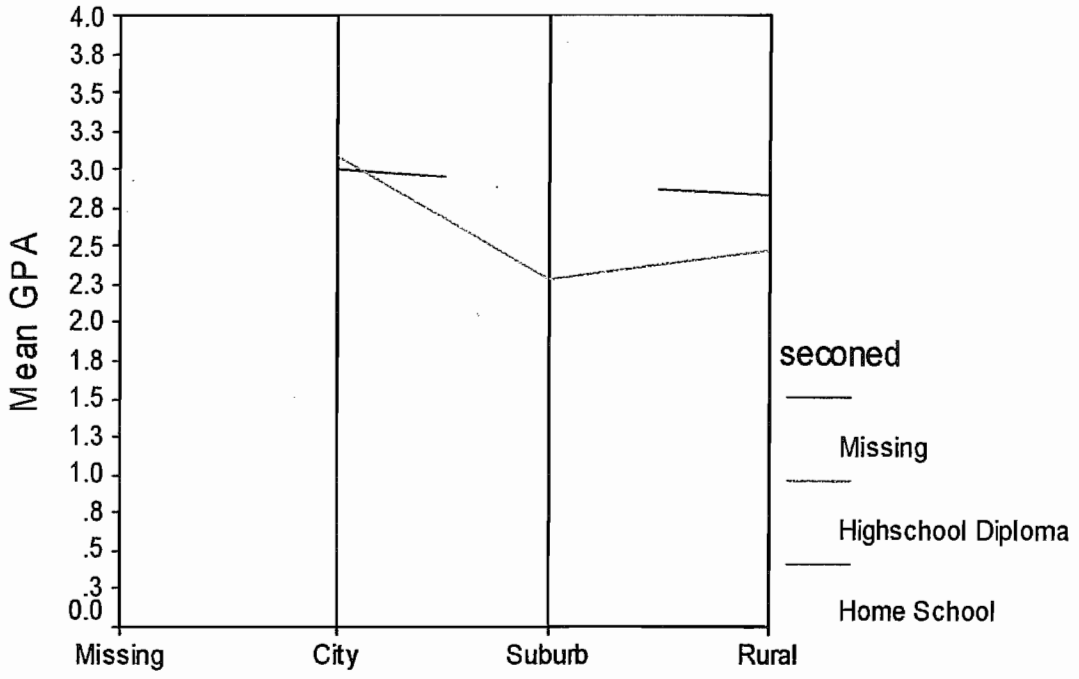
a. R Squared = .041 (Adjusted R Squared = -.189)

Computer:
F(1,25)=.309; p=.583
There is no significant effect of computer access on GPA.

Economic Status:
F(4,25)=.239; p=.914
There is no significant effect of economic status on GPA.



The Effect of Type of Secondary Education and Type of Geographic Location on GPA



Secondary Education:
F(1,28)=.137; p=.714
There is no significant effect of type of secondary education on GPA.

Geographic Location:
F(2,28)=1.815; p=.181
There is no significant effect of type of geographic location on GPA.

The Effect of Type of Secondary Education and Type of Geographic Location on GPA

Between-Subjects Factors

		Value Label	N
seconed	1.00	Highschoo l Diploma	28
	3.00	Home School	5
Geograph	1.00	City	9
	2.00	Suburb	9
	3.00	Rural	15

Descriptive Statistics

Dependent Variable: GPA

seconed	Geograph	Mean	Std. Deviation	N
Highschool Diploma	City	3.0829	.5720	7
	Suburb	2.2778	.9718	9
	Rural	2.4717	.5449	12
	Total	2.5621	.7579	28
Home School	City	3.0000	.0000	2
	Rural	2.8333	1.0408	3
	Total	2.9000	.7416	5
Total	City	3.0644	.4967	9
	Suburb	2.2778	.9718	9
	Rural	2.5440	.6407	15
	Total	2.6133	.7540	33

Tests of Between-Subjects Effects

Dependent Variable: GPA

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	3.242[a]	4	.810	1.518	.224
Intercept	132.574	1	132.574	248.274	.000
SECONED	7.337E-02	1	7.337E-02	.137	.714
GEOGRAPH	1.939	2	.969	1.815	.181
SECONED * GEOGRAPH	.187	1	.187	.349	.559
Error	14.952	28	.534		
Total	243.567	33			
Corrected Total	18.193	32			

a. R Squared = .178 (Adjusted R Squared = .061)

Secondary Education:
F(1,28)=.137; p=.714
There is no significant effect of type of secondary education on GPA.

Geographic Location:
F(2,28)=1.815; p=.181
There is no significant effect of type of geographic location on GPA.

Estimated Marginal Means

1. seconed

Dependent Variable: GPA

seconed	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Highschool Diploma	2.611	.141	2.321	2.901
Home School	2.917[a]	.334	2.233	3.600

a. Based on modified population marginal mean.

2. Geograph

Dependent Variable: GPA

Geograph	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
City	3.041	.293	2.441	3.642
Suburb	2.278[a]	.244	1.779	2.777
Rural	2.653[a]	.236	2.169	3.136

a. Based on modified population marginal mean.

3. seconed * Geograph

Dependent Variable: GPA

seconed	Geograph	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Highschool Diploma	City	3.083	.276	2.517	3.649
	Suburb	2.278	.244	1.779	2.777
	Rural	2.472	.211	2.040	2.904
Home School	City	3.000	.517	1.942	4.058
	Suburb	.[a]	.	.	.
	Rural	2.833[b]	.422	1.969	3.698

a. This level combination of factors is not observed, thus the corresponding population marginal mean is not estimat

b. Based on modified population marginal mean.

Post Hoc Tests

Geograph

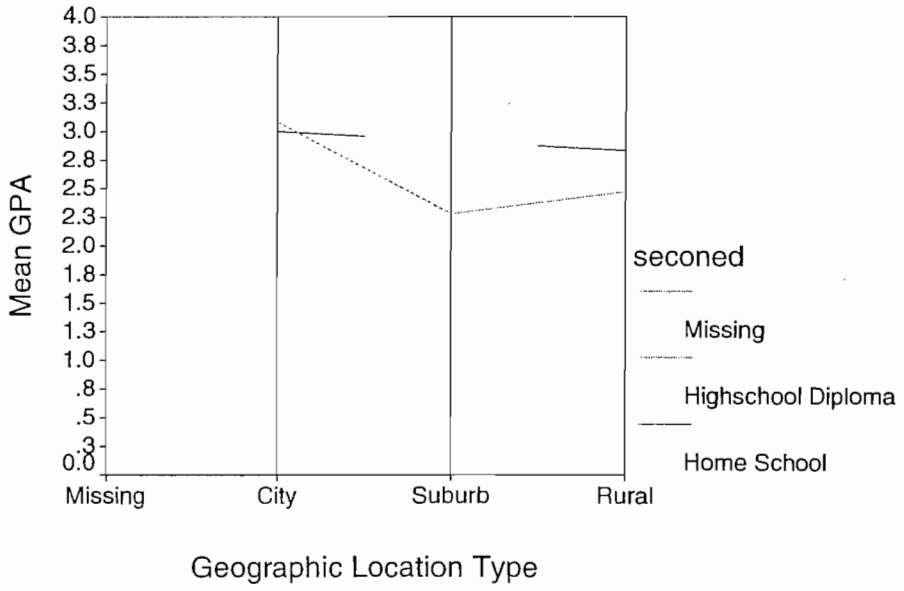
Multiple Comparisons

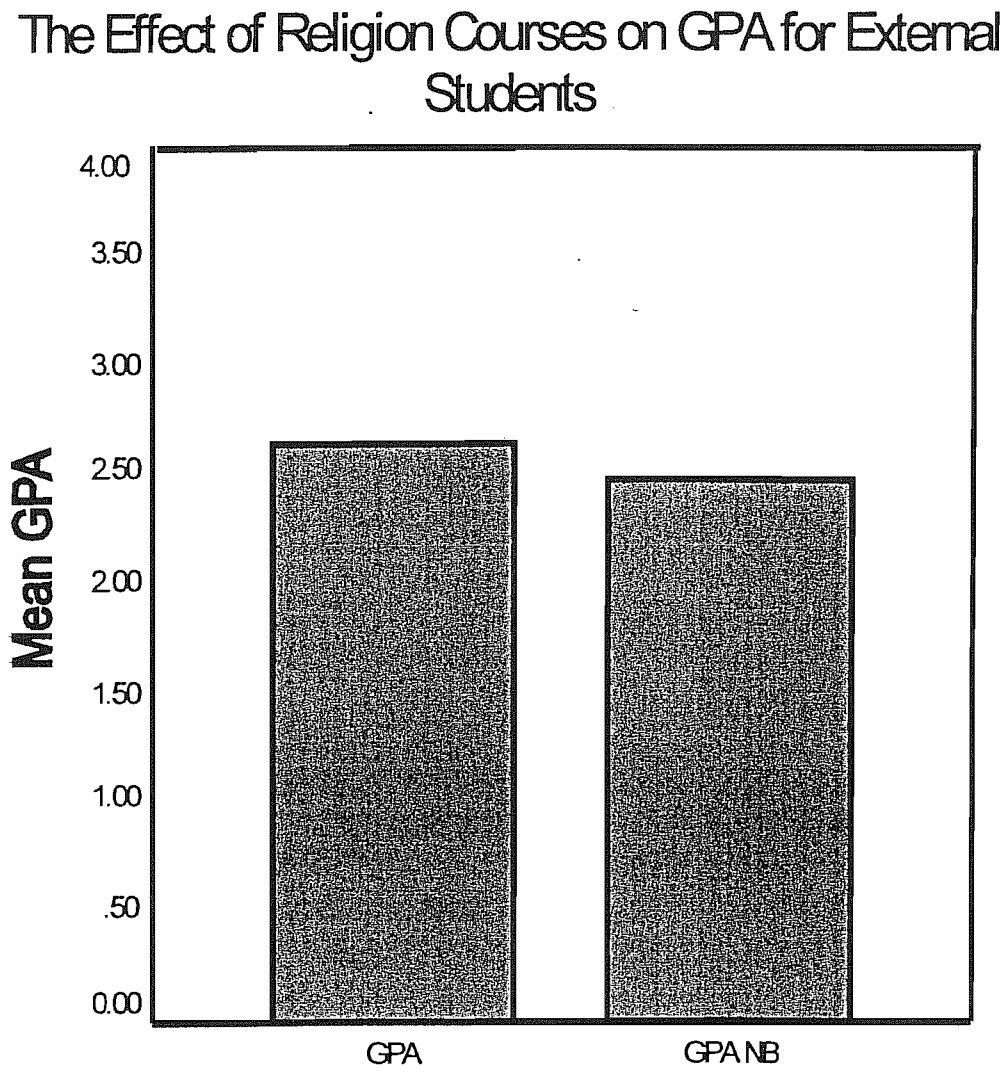
Dependent Variable: GPA
Bonferroni

(I) Geograph	(J) Geograph	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
City	Suburb	.7867	.3445	.091	-9.05E-02	1.6639
	Rural	.5204	.3081	.307	-.2641	1.3050
Suburb	City	-.7867	.3445	.091	-1.6639	9.053E-02
	Rural	-.2662	.3081	1.000	-1.0508	.5184
Rural	City	-.5204	.3081	.307	-1.3050	.2641
	Suburb	.2662	.3081	1.000	-.5184	1.0508

Based on observed means.

ıe Effect of Type of Secondary Education and Type of Geographic Location on GPA





Religion classes significantly effect GPA of all EDP students (p=.000).

Comparison of External GPAs Including Religion Courses to External GPAs Excluding Religion Courses.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	GPA	2.6482	143	1.0832	9.059E-02
	GPANB	2.4608	143	1.1614	9.712E-02

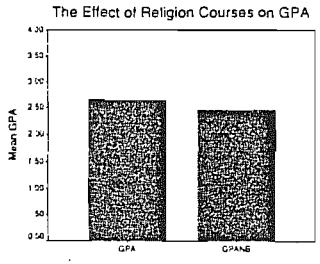
Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	GPA & GPANB	143	.912	.000

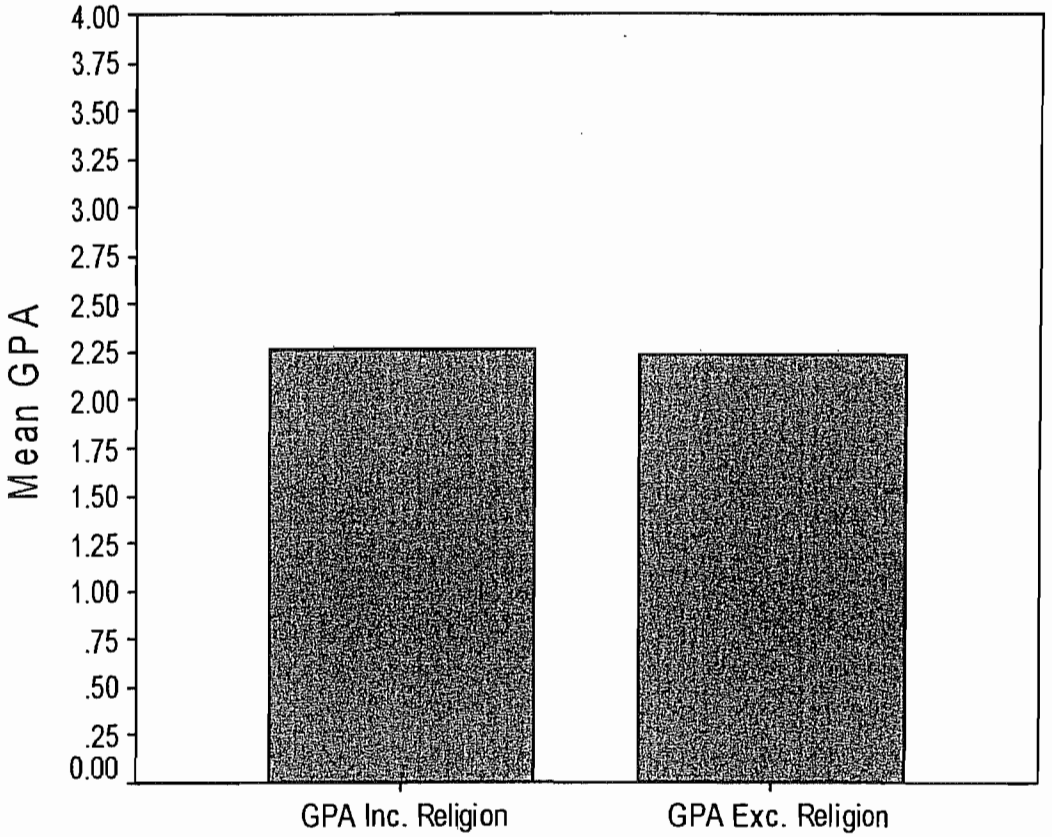
Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	GPA - GPANB	.1873	.4781	3.998E-02	.1083	.2664	4.686	142	.000

Religion classes significantly effect GPA of all EDP students (p=.000).



The Effect of Religion Courses on GPAs of Residential Students



t(100)=1.280; p=.204
There is no significant effect of religion courses on the GPAs of campus students.

The Effect of Religion Courses o the GPAs of Campus Students

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	GPA	2.2644	101	1.0385	.1033
	GPANR	2.2278	101	1.0713	.1066

Paired Samples Correlations

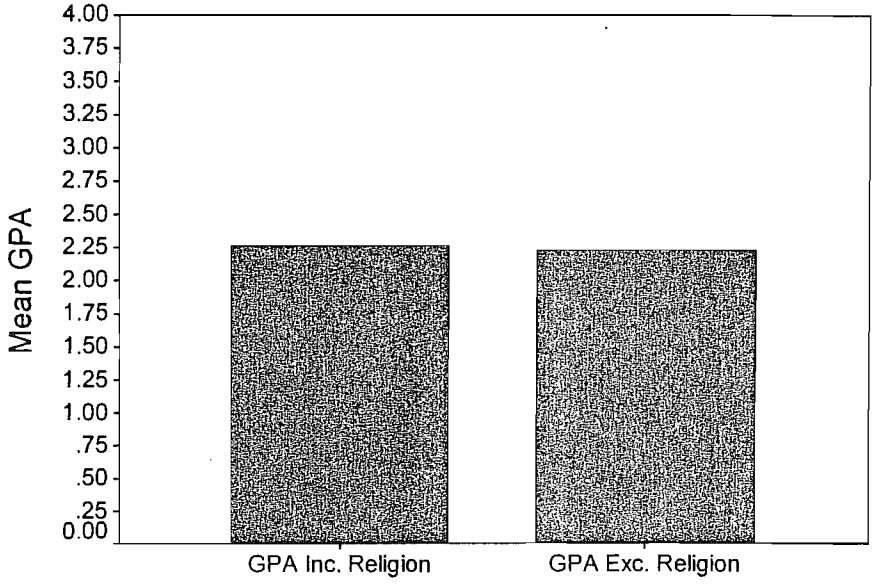
		N	Correlation	Sig.
Pair 1	GPA & GPANR	101	.963	.000

Paired Samples Test

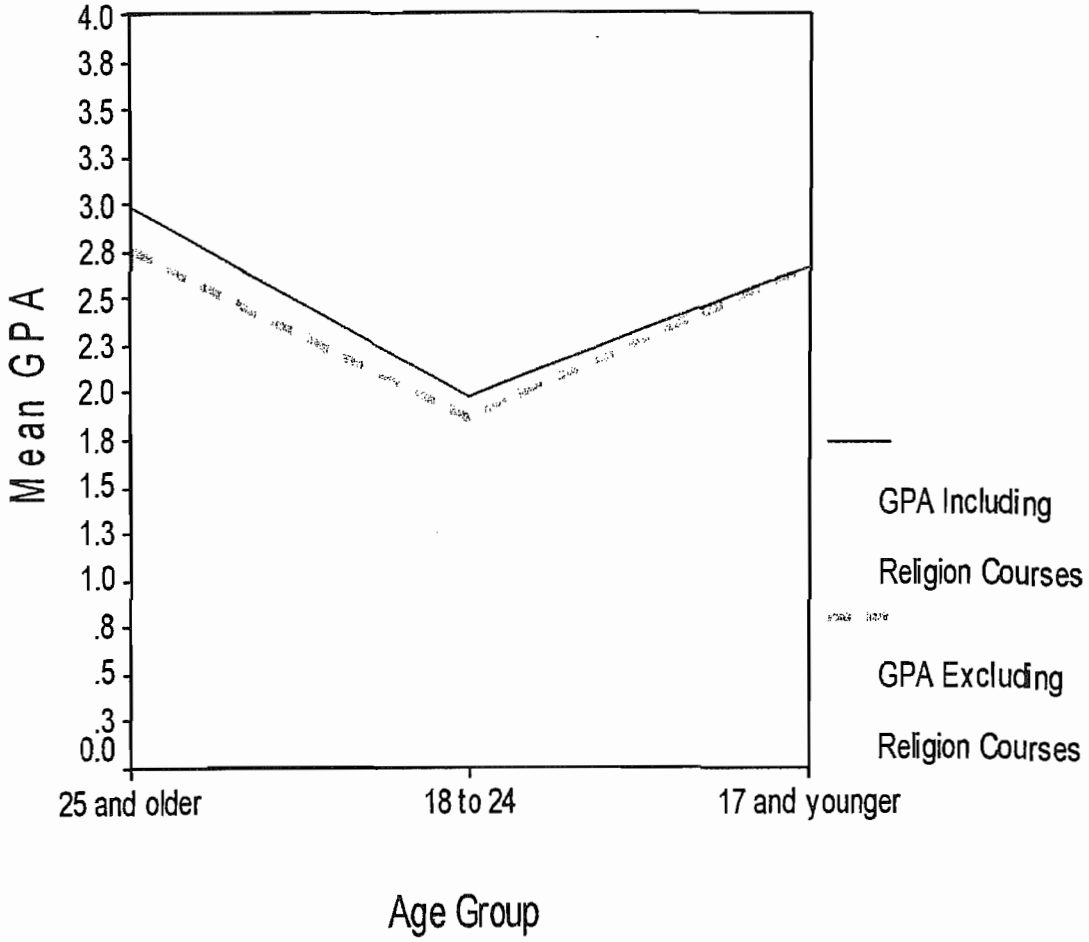
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	GPA - GPANR	3.658E-02	.2873	2.859E-02	-2.01E-02	9.330E-02	1.280	100	.204

t(100)=1.280; p=.204
There is no significant effect of religion courses on the GPAs of campus students.

The Effect of Religion Courses on GPAs of Residential Students



The Effect of Religion Courses and Age on the GPAs of EDP Students



EDP students age 25 and older consistently earn significantly higher GPAs than students age 18 to 24.

EDP students age 17 and younger earn similar GPAs regardless of the inclusion or exclusion of religion courses.

EDP students age 18 to 24 consistently earn GPAs lower than students age 25 and older and students 17 and younger.

The Effect of Religion Courses and Age on GPA

Between-Subjects Factors

		Value Label	N
agrp2	1.00	25 and older	93
	2.00	18 to 24	47
	3.00	17 and younger	3

Descriptive Statistics

	agrp2	Mean	Std. Deviation	N
GPA	25 and older	2.9852	.7870	93
	18 to 24	1.9802	1.2976	47
	17 and younger	2.6667	.5774	3
	Total	2.6482	1.0832	143
GPANB	25 and older	2.7555	.9688	93
	18 to 24	1.8647	1.3157	47
	17 and younger	2.6667	.5774	3
	Total	2.4608	1.1614	143

Multivariate Tests[c]

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.543	82.683[a]	2.000	139.000	.000
	Wilks' Lambda	.457	82.683[a]	2.000	139.000	.000
	Hotelling's Trace	1.190	82.683[a]	2.000	139.000	.000
	Roy's Largest Root	1.190	82.683[a]	2.000	139.000	.000
AGRP2	Pillai's Trace	.201	7.805	4.000	280.000	.000
	Wilks' Lambda	.800	8.203[a]	4.000	278.000	.000
	Hotelling's Trace	.249	8.597	4.000	276.000	.000
	Roy's Largest Root	.246	17.215[b]	2.000	140.000	.000

a. Exact statistic

b. The statistic is an upper bound on F that yields a lower bound on the significance level.

c. Design: Intercept+AGRP2

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	GPA	31.532[a]	2	15.766	16.339	.000
	GPANB	24.905[b]	2	12.452	10.462	.000
Intercept	GPA	159.425	1	159.425	165.217	.000
	GPANB	145.329	1	145.329	122.095	.000
AGRP2	GPA	31.532	2	15.766	16.339	.000
	GPANB	24.905	2	12.452	10.462	.000
Error	GPA	135.092	140	.965		
	GPANB	166.642	140	1.190		
Total	GPA	1169.464	143			
	GPANB	1057.516	143			
Corrected Total	GPA	166.625	142			
	GPANB	191.547	142			

a. R Squared = .189 (Adjusted R Squared = .178)

b. R Squared = .130 (Adjusted R Squared = .118)

Estimated Marginal Means

Estimates

Dependent Variable	agrp2	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
GPA	25 and older	2.985	.102	2.784	3.187
	18 to 24	1.980	.143	1.697	2.263
	17 and younger	2.667	.567	1.545	3.788
GPANB	25 and older	2.755	.113	2.532	2.979
	18 to 24	1.865	.159	1.550	2.179
	17 and younger	2.667	.630	1.421	3.912

Pairwise Comparisons

Dependent Variable	(I) agrp2	(J) agrp2	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a]	
						Lower Bound	Upper Bound
GPA	25 and older	18 to 24	1.005*	.176	.000	.657	1.353
		17 and younger	.318	.576	.581	-.821	1.458
	18 to 24	25 and older	-1.005*	.176	.000	-1.353	-.657
		17 and younger	-.686	.585	.243	-1.843	.470
	17 and younger	25 and older	-.318	.576	.581	-1.458	.821
		18 to 24	.686	.585	.243	-.470	1.843
GPANB	25 and older	18 to 24	.891*	.195	.000	.505	1.277
		17 and younger	8.882E-02	.640	.890	-1.176	1.354
	18 to 24	25 and older	-.891*	.195	.000	-1.277	-.505
		17 and younger	-.802	.650	.219	-2.086	.482
	17 and younger	25 and older	-8.882E-02	.640	.890	-1.354	1.176
		18 to 24	.802	.650	.219	-.482	2.086

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Students age 25 and older earn significantly higher GPAs than students age 18 to 24 regardless of the inclusion exclusion of religion courses (p=.000).

Multivariate Tests

	Value	F	Hypothesis df	Error df	Sig.
Pillai's trace	.201	7.805	4.000	280.000	.000
Wilks' lambda	.800	8.203[a]	4.000	278.000	.000
Hotelling's trace	.249	8.597	4.000	276.000	.000
Roy's largest root	.246	17.215[b]	2.000	140.000	.000

Each F tests the multivariate effect of agrp2. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means.

a. Exact statistic

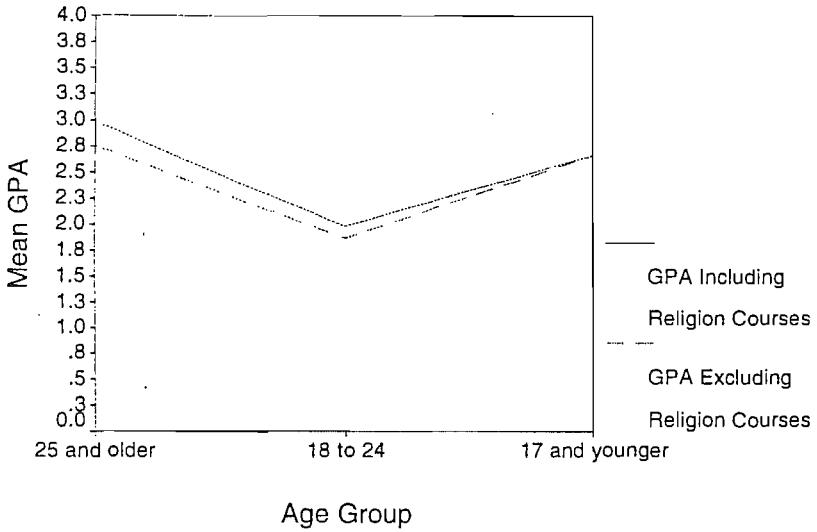
b. The statistic is an upper bound on F that yields a lower bound on the significance level.

Univariate Tests

Dependent Variable		Sum of Squares	df	Mean Square	F	Sig.
GPA	Contrast	31.532	2	15.766	16.339	.000
	Error	135.092	140	.965		
GPANB	Contrast	24.905	2	12.452	10.462	.000
	Error	166.642	140	1.190		

The F tests the effect of agrp2. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

The Effect of Religion Courses and Age on the GPAs of EDP Students



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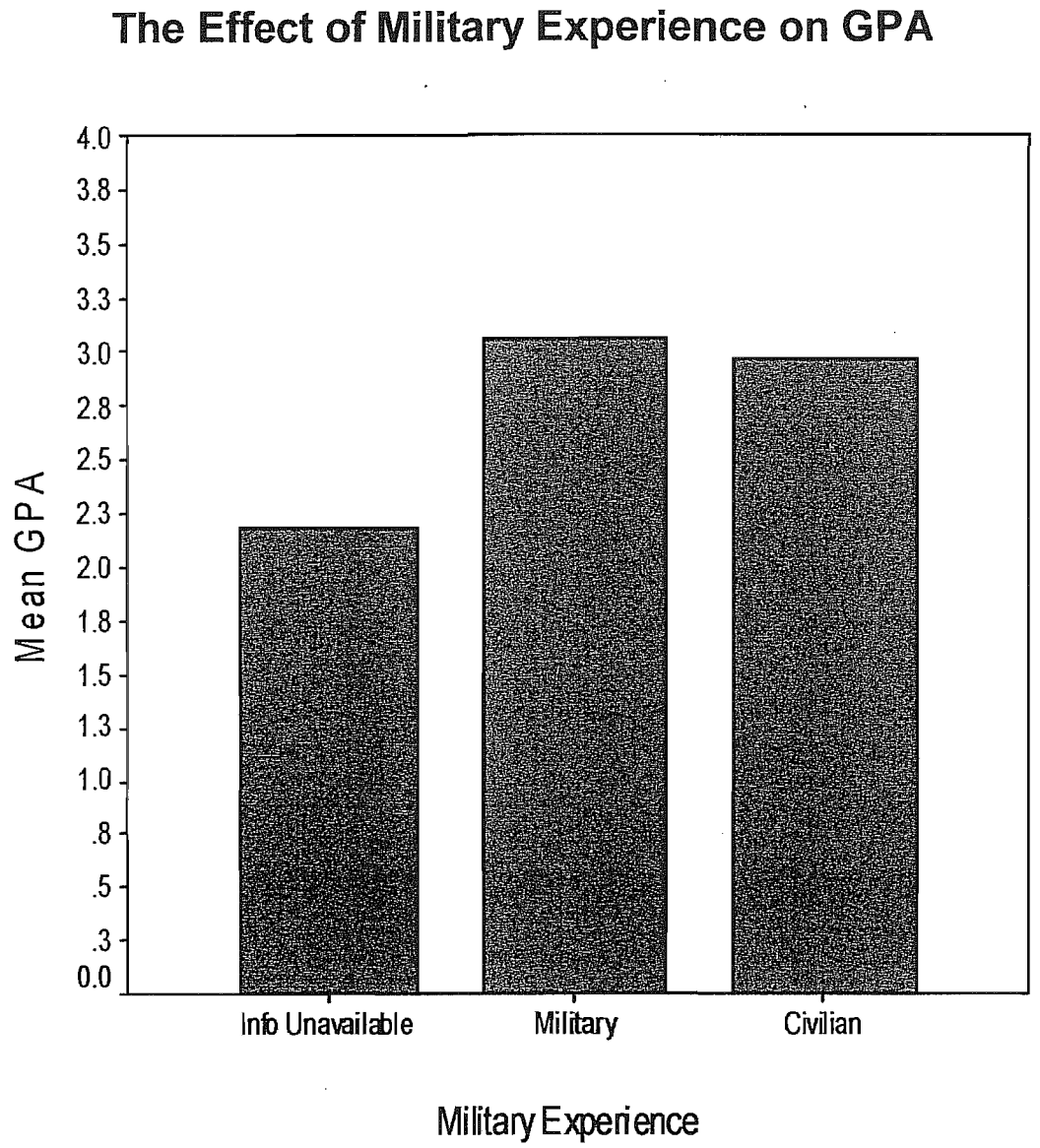


t(111)=.624; p=.534
There is no significant effect of military experience on GPA.

The Effect of Military Experiance on GPA

Group Statistics

	military	N	Mean	Std. Deviation	Std. Error Mean
GPA	military	58	3.0597	.6965	9.145E-02
	civilian	55	2.9698	.8300	.1119

Independent Samples Test

		Levene's Test for Equality of Variances	
		F	Sig.
GPA	Equal variances assumed	.617	.434
	Equal variances not assumed		

Independent Samples Test

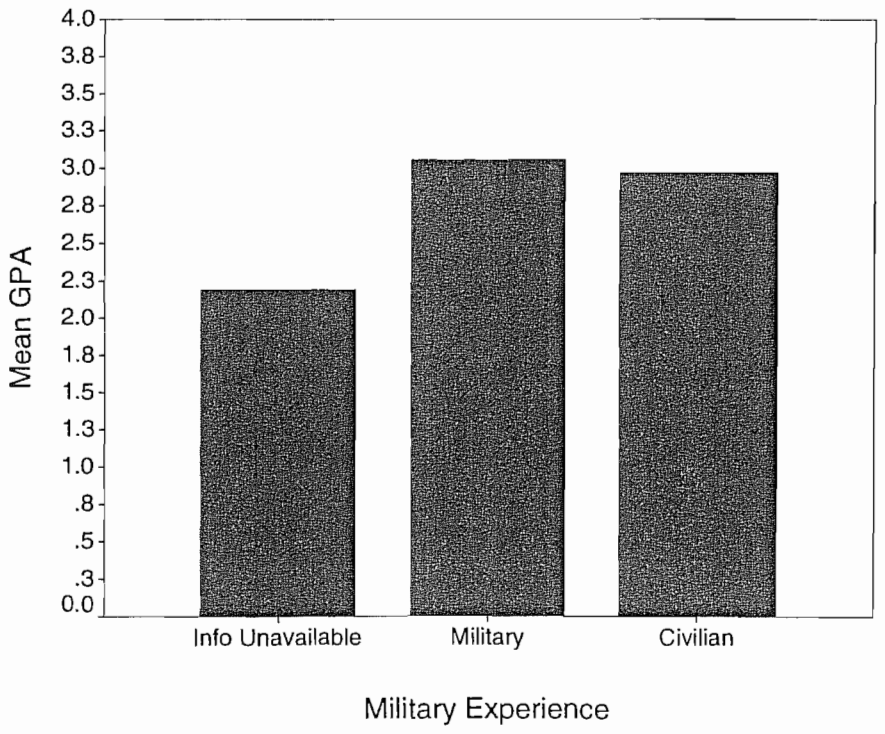
		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
GPA	Equal variances assumed	.624	111	.534	8.984E-02
	Equal variances not assumed	.622	105.593	.536	8.984E-02

Independent Samples Test

		t-test for Equality of Means		
		Std. Error Difference	95% Confidence Interval of the Difference	
			Lower	Upper
GPA	Equal variances assumed	.1439	-.1952	.3749
	Equal variances not assumed	.1445	-.1967	.3764

t(111)=.624; p=.534
There is no significant effect of military experience on GPA.

Graph



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