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By Luis Nunez, San Diego State University, fall 2005

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IMPACT OF THE GPA AND PRIOR COLLEGE EXPERIENCE ON THE

COMPLETION OF THE NAVY MEDICAL LABORATORY

TECHNICIAN PROGRAM

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A Project

Presented to the

Faculty of

San Diego State University

_____

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

in

Education

_____

by

Luis A. Nunez Jr

Fall 2005

20070910385

SAN DIEGO STATE UNIVERSITY

The Undersigned Faculty Approves the

Project of Luis A. Nunez Jr:

Impact of GPA And Prior College Experience On The Completion Of The Navy

Medical Laboratory Technician Program
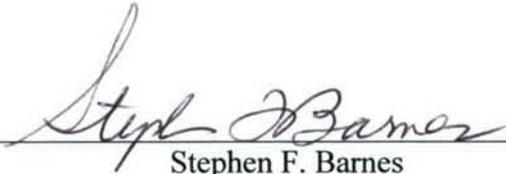
_____
Stephen F. Barnes
Department of Administration, Rehabilitation
and Post Secondary Education

12 December 2005
Approval Date

ACKNOWLEDGEMENTS

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CHAPTER I

INTRODUCTION

Background

The cost of higher education in the United States is becoming increasingly prohibitive. Currently, the average tuition at a public university or college is $11,354, and private universities average $27,516 per academic year (Four Myths about College Costs, 2005). These costs have greatly increased from only a decade ago, making public education close to unaffordable for the average American. As a result, many students postpone their academic goals to join the military where they can pursue educational opportunities that otherwise would not be affordable. The Department of Defense (DoD) pays for enlisted men and women to pursue higher education while they serve out their military commitment. In the military, the average 53-week curriculum costs the DoD about $20,000, which is comparable to the civilian costs for an Associate's degree program. However, this too is extremely expensive for the military. Resources have been almost exclusively allocated for the war on terror since September 11th 2001, and are therefore less available for the education of military men and women, than in the past. In addition, DoD budget cuts immediately result in fewer monies appropriated for military education.

The MLT program graduates approximately 250 students per year and was introduced into the Navy in 1972. The school itself is structured into four phases; freshman, sophomore, junior and senior.

The freshman phase included 71 didactic days/533 instructional hours, with the daily schedule as follows 6:30-9:30 am lecture and or lab, 1 hour brunch and 10:30 am - 3:00 pm lecture and or lab, 7.5 hours per day 1 hour a week allocated for group physical readiness training for 53 weeks.

The sophomore phase clinical rotation included clinical reinforcement for: Accessioning, Urinalysis, Hematology, Coagulation, Chemistry (general, specials, and blood gas). These rotations were conducted at Naval Medical Center San Diego, Veterans Administrations Hospital In La Jolla, CA, Branch Medical Clinics; Marine Corp Recruit Depot (MCRD), Naval Station 32nd street, North Island (All locations in San Diego County),

TRICARE clinics in Chula Vista and Clairemont, California. The hours of rotation were from 6:30 am -3:30 pm for 68 days x 8 hours/day = 544 hours.

The junior phase included 62 didactic days/422 instructional hours, with a daily schedule as follows 6:30-9:30 am lecture and or lab, 1 hour brunch and 10:30 am – 2:30 pm lecture and or alb, 7.0 hours per day, 54 hours of certification exam study was conducted in the am or pm.

The senior phase clinical rotation included clinical reinforcement for: Microbiology, Parasitology, Immunology, Blood Bank and Donor Center. The hours of rotation were from 6:30 am – 3:30 pm for 64 days x 8 hours/day = 512 hours.

Statement of the Problem

Current criteria for becoming an Officer in the Navy[1] includes achieving high performance scores on the Graduate Record Exam (GRE), the exam used for civilian acceptance into a Master's Degree program at a college or university. Enlisted military must also take the Armed Services Vocational Aptitude Battery (ASVAB) test, which is a multi-aptitude test comprised of 10 individual tests resulting in one composite score. The composite score combines verbal, mathematics, and academic ability, which assist in career exploration (Armed Services Vocational Aptitude Battery, 2005). Currently, when an officer or enlisted sailor submits an educational package for review by the Naval Review Board, the Board may soon require verification that the applicant has already had prior college experience.

Therefore, in light of anticipated future restrictions on funding for higher education programs in the military, this study investigated whether prior college experience was in fact

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[1] The officer and enlisted ranks in the United States Armed forces differ in many ways. Enlisted members normally need the minimal requirements of a high school diploma to be able to enlist in the service. For officers, the minimum requirement is a Bachelor's Degree. Officers also have two paths to attain their commission. First, by direct commission in which a college student upon graduation is commissioned as a Navy Ensign or Second-Lieutenant in the Army or Air Force. The second option is termed *out service procurement* and requires that the interested member contact a local recruiting office to apply for their commissioning package. This route implies the individual making the request has already attained their undergraduate degree. Once accepted, they are commissioned in the same fashion as the student at the university.

a justifiable prerequisite for military career advancement. Specifically, this research investigated whether there was a difference between the Grade Point Average (GPA) of military students who had prior college experience compared to military students without prior college experience in the Medical Laboratory Technician Program at the Naval School of Health Sciences located in San Diego, California. Military students, with and without college experience, were the focus of this study. The study used a survey to investigate this question. Comparable civilian data was utilized to help interpret differences and similarities between these two groups.

Purpose of the Study

Questions regarding what level of higher education is necessary to succeed in today's Navy are frequently raised. Does the average sailor need prior college education to advance and succeed in formal military schools? The Chief of Naval Operations, Admiral Vern Clark, is an advocate of higher education, and wants every sailor from the pay grades of E-1 to 0-9 to become activists of progressive thinking. This may require Navy leadership to reconsider its education and training program.

The purpose of this study was to investigate whether students with prior college experience selecting a military career were better prepared for challenges in military schools than those students who have had no previous college experience.

Limitations

This study was a narrow snapshot of the Naval School of Health Sciences at San Diego California. It only incorporated two graduating classes from the calendar year 2005. Typically this program graduates four classes per year, so this study was limited in the depth of information acquired about the student population. Personal interviews, for example, were not used due to time constraints and could have resulted in a larger scope of data relevant to the theoretical framework being tested. These data gathering techniques might have revealed useful information about the sample, such as organizational activity or regularity of faculty-student contact.

The sample size for this project was limited to 50 students, but the Navy's expectations of larger classes will begin in the calendar year 2006. This increase in class size well researched in the civilian sector, can affect the ways in which students learn. Lastly, the ongoing war in Iraq was a constant threat that was not measured in connection with this

project. At what level did this threat affect the students learning ability? Without a research tool in place this threat can never be truly explained.

Research Question and Hypothesis

The study investigated the following two questions:

Research Question

    (1) Was there a difference between the grade point average (GPA) of military students who had prior college experience compared to military students without prior college experience in the Navy's Medical Laboratory Technician program from May 2004 to August 2005?

It was therefore hypothesized (Null hypothesis)

    (1) There was no difference in grade point average (GPA) of military students with and without prior college experience who were enrolled in the Navy's Medical Laboratory Technician program from May 2004 to August 2005.

Definitions of Terms

1.   Academic achievement: The act of accomplishing or finishing a scholarly curriculum that requires exertion and skill on the part of the student. The program must be clearly documented by either a two-year or four-year institution.

2.   College experience: Active participation in courses, leading to the accumulation of knowledge or skill with the final outcome receiving higher learning in hopes of a Bachelor's degree. The operational definition will require that the student have completed a minimum of 1 semester in English composition I, English Composition II, College Algebra or Humanities.

3.   Community College: Any institution accredited to award the Associate of Arts or Science as its highest degree. This definition includes the comprehensive two-year colleges as well as any many of the technical institutes both public and private (Laanan, 1995).

4.   Grade Point Average (GPA): A student's final overall GPA after the completion of the 53 week curriculum. It will be expressed as a numeric value.

5.   Military students: Students who have been selected and who have completed the Medical Laboratory Technician School (MLT).

6.   Native students: An individual who begins their freshman studies at the four-year university and graduates as a senior.

7.   Transfer students: Defined as an individual who completes a certain amount of units and/or articulation agreement at the community college and who is successfully admitted to a 4-year university. The "term transfer" includes all students who enter a four-year university as sophomores or juniors. Most transfers are juniors or within a few units of achieving junior status (Laanan, 1995).

8.   Medical Laboratory Technician Course (School) (MLT): Course provides graduates with entry-level knowledge and technical skills in the major disciplines of the clinical laboratory sciences. Major disciplines of the clinical laboratory include; clinical chemistry, urinalysis, hematology, immunology, blood bank and microbiology. Additional instruction in the areas of mathematics, ethics, anatomy and physiology, safety and administration. Course is organized in two phases: Phase I -26 weeks didactic and Phase II-26 weeks clinical phase.

Significance of the Study

Reduced spending on military education has serious implications for the United States. How can the Department of Defense effectively protect our country without those troops being fully educated—especially educated and trained in ways that would best prepare them for both combat and support roles? Combat readiness is far more than pulling the right trigger at the right time. Today's military is becoming exponentially dependent upon advanced technologies where skills in math, science, technology, and communications are critical. There is also need for education that provides insight into the cultures where military personnel reside and must school their own children while serving abroad. Therefore, the needs of today's military men and women require advanced degrees with much broader experience and knowledge than in the past. This will be the only way to maintain the military's ability to perform well—wherever the military is needed.

Considering the above, the pursuit of higher education in the military is clearly of

paramount importance. However, this seems extremely problematic for all of the reasons cited above.

Summary

Many students have been guided to complete prerequisites in preparation for college courses. These students then enter college better prepared to handle more advanced instruction as they continue from semester to semester with fewer learning difficulties along the way. Well-prepared and well-guided students are more likely to graduate within a predetermined timeframe, and enter society prepared, exactly as they need to be, to succeed. Other young students may not complete their undergraduate degrees and may consider, instead, a future with the military. Students who enter the military and want to go to military schools for their college education may soon be required to have prior college coursework. The study investigated whether there was a difference between the grade point average (GPA) of military students who had prior college experience compared to military students without prior college experience in the Medical Laboratory Technician Program at the Naval School of Health Sciences located in San Diego, California.

Chapter II presents current literature related to the research question and hypothesis. Chapter III describes the research methodology, participants, data collection process and procedures research instruments, and other research limitations issues employed in this study. Chapter IV presents and discusses the findings. Chapter V summarizes the findings, and advances recommendations for future research.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

Education in classroom settings has been in existence throughout the world for hundreds of years, from one-room school houses to virtual classrooms. Many theories of learning have emerged over time, shaping our understanding of how to thrive and survive in an evolving America, a country filled with expanding knowledge, technology and opportunities. Students have graduated from vocational schools where they have learned to contribute to certain trades around the world and many other students have attended two- and four-year institutions of higher education in hopes of better job opportunities, their success in many cases being attributed to the support provided by friends, families, and their most trusted school counselors. School counselors, may have had the most influence on students' selection and acceptance into the differing institutions. This is, in fact, due to the direction counselors have provided to students in preparing them for graduation, and entry into the career world.

In high school, many students have been guided to complete difficult college-level algebra as a prerequisite to more advanced mathematics, which allows them to enter college better prepared without stumbling blocks of prerequisites and additional coursework in their way. Well-prepared and well-guided students graduate within a predetermined timeframe, and enter society competent in exactly the way they need to succeed in their careers. Other young students may not wish to complete their undergraduate degrees for various reasons and may consider instead a future with the military. Will students who select a military career be better prepared for the challenges in military school because they have had prior college experience? Military students, with and without college experience, were the participants and focus of this study. Comparable civilian data was also utilized to discuss differences and similarities between both groups.

Effect of Prerequisites on Completing College Coursework

The literature review supported three views with respect to prerequisite courses. First, students who take prerequisite college courses in some cases do not do any better at the next level of instruction compared to students who do take prerequisite courses. Secondly, students who do take college prerequisite courses do significantly better than those who do not. Lastly, community college students who are preparing to transfer to a four-year institution in most cases are better prepared than native freshman students in respect to their grade point average (GPA), which is also inclusive of the number of semester hours they have taken. The research data suggested that GPA, along with previously taken college courses was a better predictor of success of student graduation than any simple measure.

Typically, college students are required by their institutions to enroll in prerequisite courses to reach the next higher level of instruction as they work on their college degree. The review of literature indicated college prerequisite courses do not always enhance a student's preparation for their next advanced course (Wilson, 1994). In contrast, other findings suggested prerequisite coursework did provide the student with a significant advantage (Kalina, 1995).

Positive Effect of Prerequisites on Student Learning

The majority of reviewed studies were in favor of prerequisites as an important factor in preparing students for the next level of study. Kalina (1995) concluded that California Community College students who had taken the advisory requisite Chemistry 2 were 18.1 percent more successful in the target course than their counterparts who had not taken the requisite. In addition, the course withdrawal rate was much higher 13.4 percent with those who did not have the requisite skills.

Stupka (1993, p. 14) acknowledged that "When comparing the performance and persistence of similar groups of students, those that have take student success type-courses–type course, exhibit one or more of the following measurable characteristics: (1) completion of more units of college credit, (2) a higher GPA (3) a higher rate of persistence." The same study also identified that students who completed the success courses–type course, on average, finished 326 percent more semester hours than students who did not take the success courses-type course.

Arismendi-Pardi (1997) found prerequisite courses were beneficial for students taking calculus courses if they completed college algebra at Orange Community College in California, or at another college. There was a significant difference in GPA of the students who completed the prerequisite compared to students who did not. The study provided the mathematics department with statistical data that strongly suggested they should create criteria in which college algebra is a prerequisite for calculus.

Mixed or Negative Findings on the Effects of Prerequisites on Student Learning

Wilson (1994) reported that students who took the Introduction to Chemistry course at Donnelly College in Kansas did not receive a higher final course grade as a result of taking the math prerequisite. As a result, a review, and possible removal of prerequisite courses for all departmental remedial science courses at Donnelly College was reportedly under consideration.

Bashford (2000) reported findings at a larger institution—the Miami-Dade Community College. In that study, passing the prerequisite did not ensure students were adequately prepared for the next course in the academic sequence. Pass rates in reading courses ranged from 58–64 percent for students completing the prerequisite course in the previous term, suggesting students were reasonably better prepared. For math course pass rates, students were not prepared as a result of passing the prerequisite course. However, for college English and math courses, students who had higher grades in the prerequisite course were shown to be better prepared than those who earned a letter grade of C. In a study performed by Callahan (1993), however students who received a letter grade of C or less, benefited from the prerequisites courses more so than those students who received a higher letter grade, utilizing GPA, SAT and ACT scores as the performance indicators.

Community College Students Preparing for a Four-Year Institution

Every year, thousands of students make the transition from community colleges to four-year institutions hoping to graduate with a Bachelor's Degree. Although there have been some studies showing no improvement in student performance as a result of prior enrollment in a community college, the majority of studies in the field concluded that community college transfer students have better success rates at four-year colleges than native freshman students.

In Laanan's (1995) study of California community college students, transfer students to the University of California, Los Angeles (UCLA) who were enrolled in a Transfer Alliance Program (TAP) were compared with transfer students who were not in the TAP. When GPA was compared, students in the TAP program showed no significant differences from those who were not in TAP. However, Laanan's findings also suggested universities that were aligned academically with their cohort community colleges did produce *better-prepared* transfer students.

According to Belchair (2001), at the four-year mark, transfer students were three times as likely to graduate as freshman students. Yet in the study reported by Arnold (2001), transfer students from Oregon Community Colleges had a 62 percent graduation rate as compared to 65–68 percent for freshman students in the Oregon State University system. A similar graduation measurement rate was documented by Minear (1998). In that particular study the transfer students were 54 percent less likely to graduate on time than native freshmen students.

The GPA as an indicator of Future Performance

Other indicators of academic performance include prior semester hours necessary for students to be academically successful in their transfer from community college to a four-year institution. Will students be more likely to succeed when measured using GPA as one of the indicators of academic performance? This likelihood was clearly seen in the findings from a study by Fernandez (2002):

> The lack of significant differences in programming course grades between sections supports the assumption that grading scales were consistent across sections increasing the reliability of the sample used. For the overall sample, no significant difference in the programming course performance was found between students who had the quantitative prerequisite and those who did not. This can suggest that the programming course does not make enough use of the knowledge taught in the Quantitative Analysis course 1 (QA1) prerequisite. Or perhaps those students without the QA1 prerequisite delay taking the prerequisite course because they feel they already have the necessary knowledge. However when the sample was limited to students with less than 65 credit hours, the equivalent of two years of college study, students with the prerequisite earned significantly higher grades on average in the

programming course than students without the prerequisite. The average increase (.632) represents an improvement of more than half a letter grade. This suggests that the QA1 prerequisite is more beneficial for associate level students than it is for students who have more than two years of college credit. (p. 6)

Fernandez's findings were further supported by Anglin (1993) who studied community college students in Cleveland Ohio, and compared them to Kent State University students. One of Anglin's findings was that native students who dropped out had lower GPAs, and had completed fewer semester hours than transfer students. The transfer students had equal or better graduation rates as native students. Anglin also restricted the criteria for transfer students, as they could not have less than 24 credit hours to be considered as a subject for this particular study.

Factors for Academic Failure

Holding everything constant, including factors such as race and age, if an adult chooses a community college for lower division studies, was that student at risk of academic failure at a senior college? Several studies supported such a finding, depending on the chosen course of study. Carlan (2000) found transfer students entering business and science majors had significantly lower GPAs as compared to other course majors. A similar study by Hollomon (1996) noted most community college students selected education, psychology and health and human services as their major. Hollomon was quick to add he was not comfortable with generalizing these findings to other community colleges. He noted these particular students had lower ACT scores, which may further explain these specific majors since they did not have scores necessary to enter other colleges. He also believed these students may had been considering the marketability of their skills for future employment.

Summary

The importance of community college preparation for students transferring to four-year intuitions, along with the relative value of prerequisite courses, may be difficult to resolve at this junction. Which avenue better prepares a student for a successful academic future was not clear; however, the literature supported prerequisite courses, in most cases, as being beneficial to student success—especially when the course was at a higher level of difficulty.

Secondly, students who had prior college experience, as measured by the number of semester hours, were more likely to be successful at a four-year institution, or at least be as successful as the native students. These findings laid the foundation for the current study, which resembled Belcheir's work (2001), in which transfer students who had 15 semesters hours or less (see Table 1) had the same odds of graduation as the native students. When transfer students had 30 hours or less, they increased their odds of graduation at the 4- and 6-year mark after entry into the four-year institution. Finally, at 60 credits or less, a significant difference was indicated in graduation rates when comparing the transfer students and native students at the 4-, 6-, and 10- year marks.

Table 1

Graduation Rates After 4, 6, and 10 Years

When the group includes transfers with:	N in group	After 4 years		After 6 years		After 10 years	
		Prob	Odds	Prob	Odds	Prob	Odds
O transfer credits	134	.0672	1.627	.5771	1.146	.6625	0.902
<=15 transfer credits	281	.0640	1.454	.2268	1.237	.5734	1.099
<=30 transfer credits	435	.0072	1.573	.0557	1.321	.1704	1.207
<=60 transfer credits	625	<.0001	2.307	.0013	1.489	.0123	1.345
Any amount of credits	767	<.0001	2.953	<.0001	1.703	.0002	1.513

Note. The boost for graduation is highest early on and then levels off.

Perhaps Carlan (2000) put it best when suggesting it may be true that a community college education does not fully prepare one for the more self-directed environment of a senior college, but the non-intimidating approach and environment of a two-year institution may allow some students who lack the confidence in their academic ability to reach a junior status, which allows them to continue on and pursue their academic and professional goals. Such a valuable opportunity for advancement in one's life may not have been reached without being given a chance at the community college level.

Chapter III describes the research methodology used to gather information about the students participating in the study who were enrolled in the Military Laboratory Technician Program, and fully discusses the research process, procedures, instruments, and limitations of this study.

CHAPTER III

METHODOLOGY

The purpose of this study was to investigate whether students with prior college experience selecting a military career were better prepared for challenges in military schools than those students who have had no previous college experience. Chapter III describes the study's project design, participant sample, procedure, and data analysis. The research instruments are discussed and a brief history of the questionnaire and its use for this study has also been documented. The chapter closes with a brief discussion of threats to internal and external validity.

The research was conducted at the Naval School of Health Sciences in San Diego, California, located on the grounds of Naval Medical Center San Diego, California. The MLT program graduates approximately 250 students per year and was introduced into the Navy in 1972. The school itself is structured into four phases; freshman, sophomore, junior and senior.

The freshman phase included 71 didactic days/533 instructional hours, with the daily schedule as follows 6:30-9:30 am lecture and or lab, 1 hour brunch and 10:30 am - 3:00 pm lecture and or lab, 7.5 hours per day 1 hour a week allocated for group physical readiness training for 53 weeks.

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The senior phase clinical rotation included clinical reinforcement for: Microbiology, Parasitology, Immunology, Blood Bank and Donor Center. The hours of rotation were from 6:30 am – 3:30 pm for 64 days x 8 hours/day = 512 hours.

The other military schools at Naval School of Health Sciences graduate over 2,000 students per year. The MLT program was one of 15 military schools at Naval School of Health Sciences that served a greater goal, which was to provide trained technicians to service the fleet, oversees facilities and shore commands.

Project Design

The study was a causal comparative study, designed to provide direct feedback on which students were more likely to complete the Medical Laboratory Technician program: students *with* prior college experience, or students without college experience? The (instrument) questionnaire was used to collect data from students in the program, and categorize student responses into two separate groups within the MLT program: students without college experience and students with college experience. The instrument was previously developed, and in use for the past two years, by the Naval School of Health Sciences, which validated its use for the current study. Therefore, it was not necessary to further pilot the instrument. One piece of demographic information that was collected by the questionnaire included the ethnicity of the participants. For the purpose of this study the effects of ethnicity were not analyzed.

Participants

Participants in this study where two distinct groups of military active duty members: those who had taken college courses prior to entering the Medical Laboratory Technician (MLT) school, and those who had not. The participating students were both male and female, and varied in their ethnic backgrounds. The sample size was 50. Several pie charts have been included so a visual distribution of the participants can easily be viewed. The data included the rank (pay grade), gender, ethnicity and students who had college or no college experience. Figures 3 and 4, illustrate the pay grades of the students for both classes 04015-06 and 04010-06, which are noted as HA: Hospitalman Apprentice, HN: Hospitalman, HM3; Hopitalman 3rd Class, HM2: Hospitalman 2nd Class, HS: Health Services Technician, HS1:

Health Services Technician 1st class, HS2; Health Services Technician 2nd class. Students from both classes were included in the study; students who failed to complete the curriculum in its entirety were not included in the study. Additionally, those 14 students who were sent back due to academic probation, which included remedial instruction, were also excluded from this study. The concern for these excluded groups of students was that they were exposed to the original course material which could potentially give them an advantage over those who were seeing the material for the first time. This prior exposure to the course material may present itself as a threat to validity when the students with college experience and those without college experience were compared statistically.

Table 2
Summary of Participants

Class	Student Groups	No. Surveyed	Males	Females	Amer Indian	Black	Hisp	Asian/ Pacific Island	Cauc	Other
04015-06	College experience	18	12	6	None	5	2	3	14	1
	No college experience	7	3	4						
04010-06	College experience	16	9	7	1	4	6	9	5	None
	No college experience	9	7	2						

Gender Class 04015-06

Female
10
40%

Male
15
60%
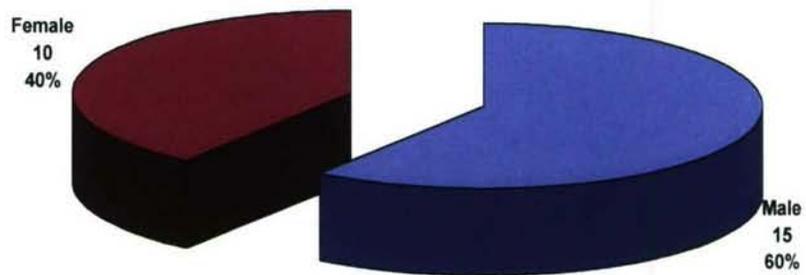
Figure 1. Gender for class 04015-06.

Gender Class 04010-06

Female
9
36%

Male
16
64%
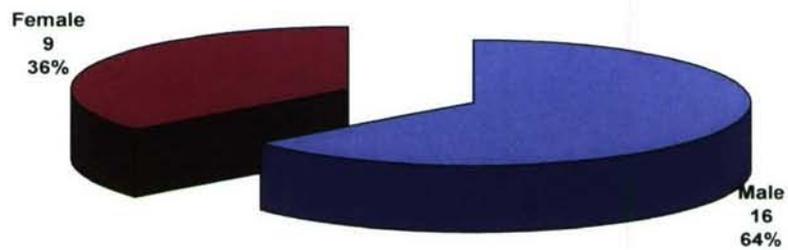
Figure 2. Gender for class 04010-06.

Figures 3 and 4, illustrate the pay grades of the students for both classes 04015-06

and 04010-06, which are noted as HA: Hospitalman Apprentice, HN: Hospitalman, HM3;

Hopitalman 3rd Class, HM2: Hospitalman 2nd Class, HS: Health Services Technician, HS1:

Health Services Technician 1st class, HS2; Health Services Technician 2nd class.
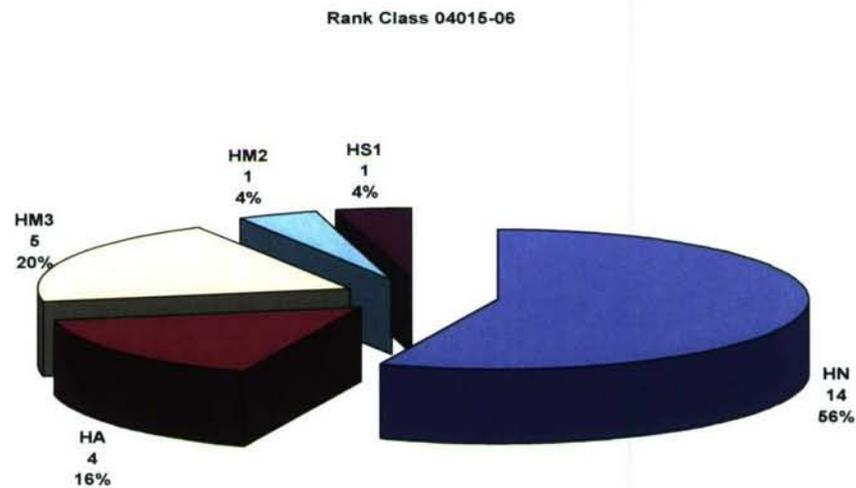
Rank Class 04015-06

Figure 3. Rank for class 04015-06.
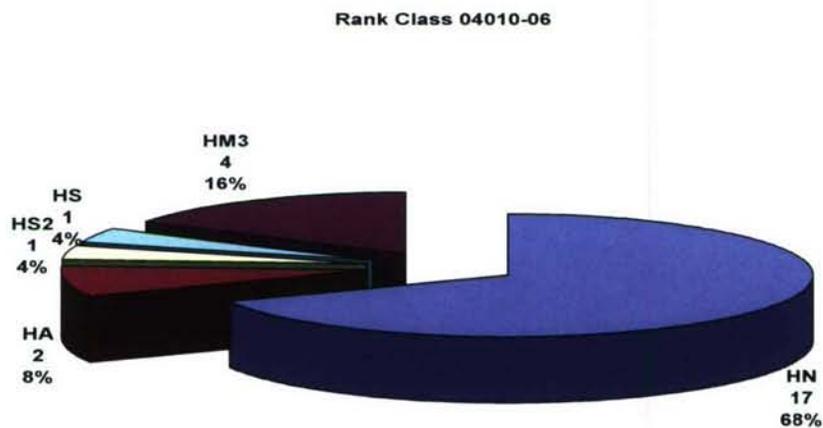
Rank Class 04010-06

Figure 4. Rank for class 04010-06.

Ethinicity Class 04015-06

Other
1
4%

Black
5
20%

Hispanic
2
8%

Asian/Pacific Islander
3
12%

Caucasian
14
56%
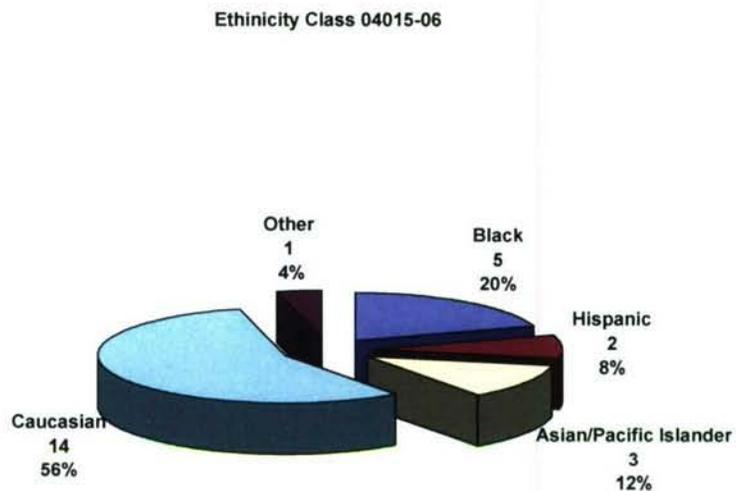
Figure 5. Ethnicity for class 04015-06.

Ethnicity Class 04010-06

Caucasian
5
20%

American Indian
1
4%

Black
4
16%

Hispanic
6
24%

Asian/Pacific
Islander
9
36%
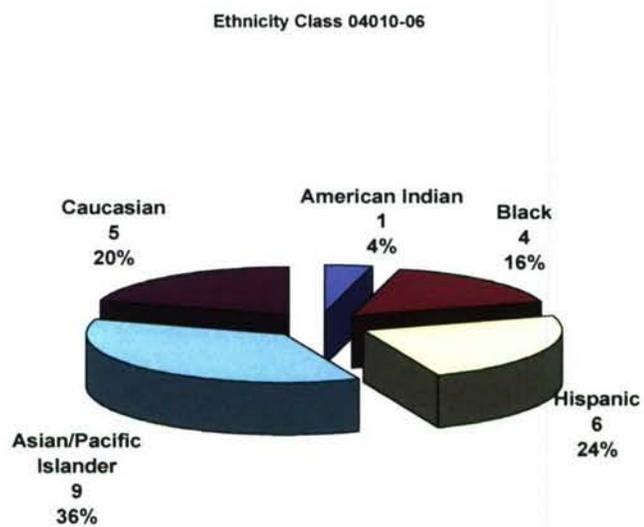
Figure 6. Ethnicity for class 04010-06.

College Experience and No College Experience Class 04015-06

No College Experience
7
28%

College Experience
18
72%
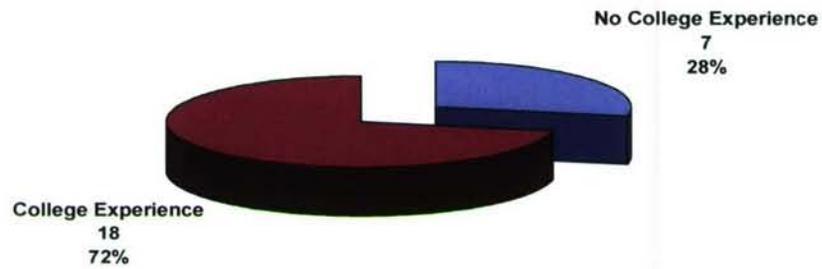
Figure 7. College or no College experience for class 04015-06.

College Expeperience and No College Experience Class 04010-06

No College
Experience
9
36%

College Experience
16
64%
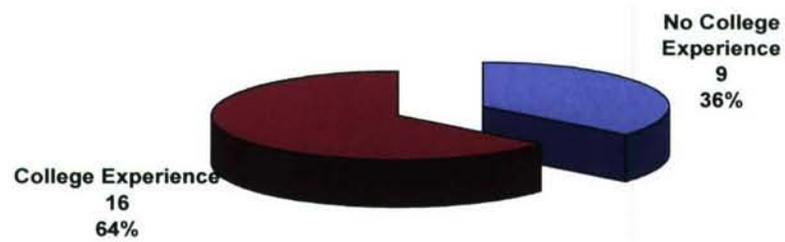
Figure 8. College or no College experience for class 04010-06.

Clases 04015-06 and 04010-06
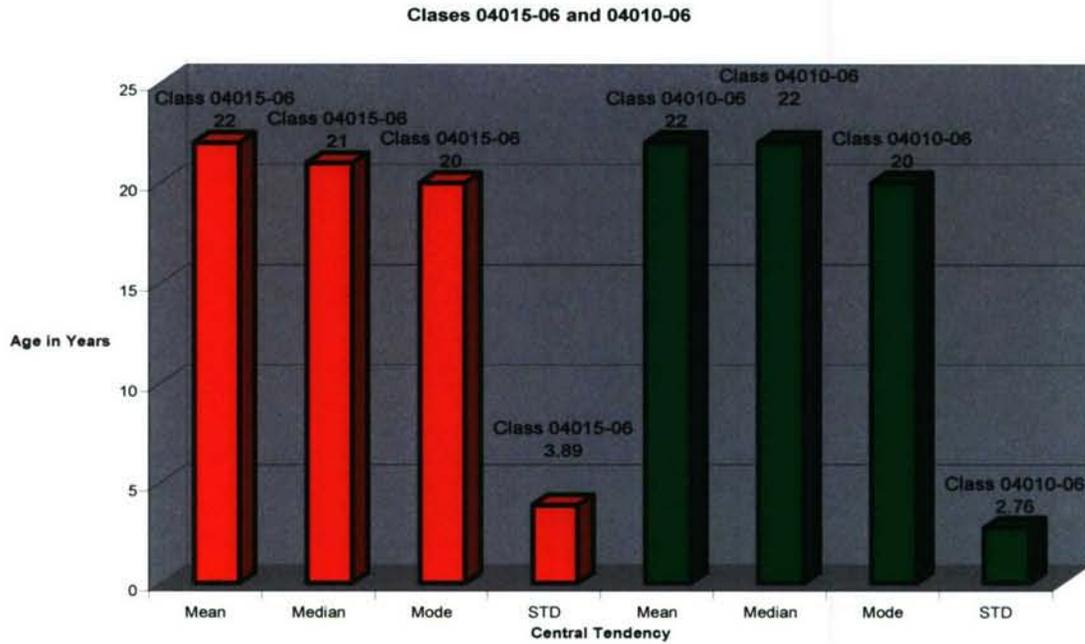
Figure 9. Illustration of the mean, median, mode and standard deviation for Age (Classes 04015-06 and 04010-06).

Figures 10-13, illustrates the combined demographics for class 04010-06 and class 04015-06, in regards to gender, ethnicity, college experience and rank.

Combined Classes Gender

Figure 10. Combined classes for gender.

Combined Classes Ethinicity
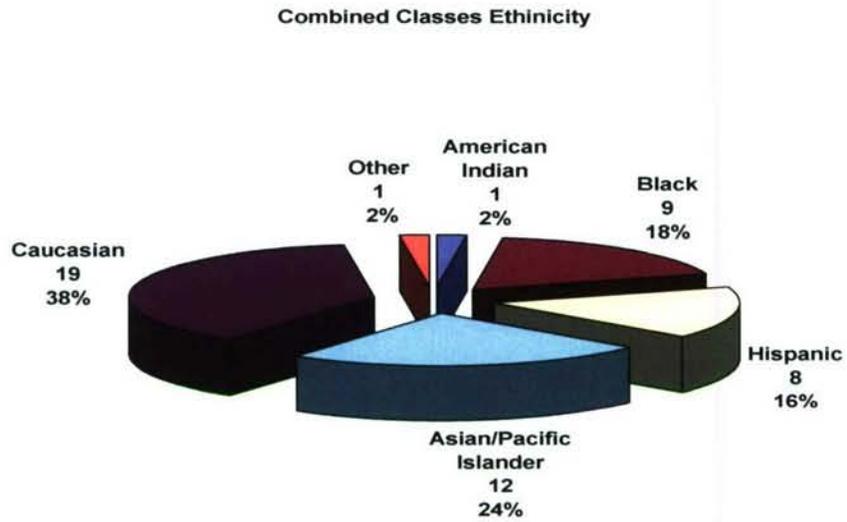
Figure 11. Combined classes for ethnicity.

Combined Classes College Experience and No College Experience
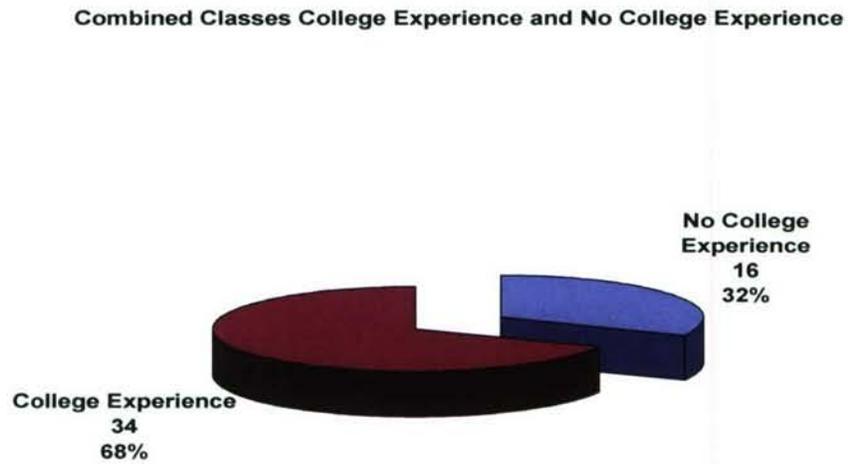
Figure 12. Combined classes for college and no college experience.

Combined Classes Rank
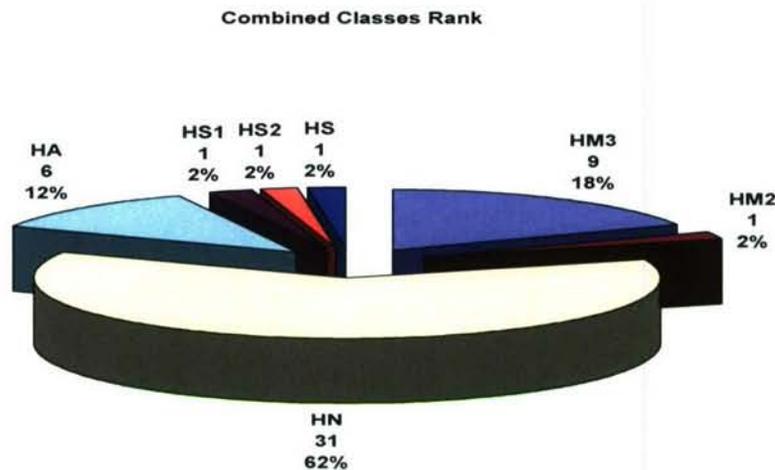
Figure 13. Combined classes for rank.

After reviewing figures 9-13, it can be said that a typical MLT student was a 22 year old Caucasian male, who had attained the pay grade of HN and had at least 3 to 12 semester hours of college experience. After careful review of the data the researcher noted that both classes were comparable in respects to their demographic makeup and college experience.

Instruments

The data collection instrument was an MLT supplemental questionnaire, which allowed the researcher to collect the appropriate information to differentiate between the college-experienced students and the non-college experienced students (see Appendix A). The instrument was a tool already in existence that had been pilot tested previously by the educational staff of the MLT program (see Appendix B). Therefore, pilot testing for this study was not required. The instrument did have one revision that was incorporated on April 1, 2005 that was not on the previous edition. This revision included the detailed documentation of the number of semester hours taken by the MLT students.

The revised questionnaire (Appendix A) required students to indicate their responses to three questions: (1) Had they taken English Composition I, English Composition II, College Algebra, or a Humanities course. (2) How many semester hours had they taken in college? Semester hours were divided on the questionnaire into the following categories of hours: 3–12 hrs, 15–24 hrs, 27–36 hrs, and 39 hrs and above, and question (3) Had they

received an Associate's degree from a community college. If yes, students were asked to provide the name of the institution and date of graduation.

Procedure

The questionnaire was administered to Class 04015-06 on April 4, 2005 at the Naval School of Health Sciences; the location was a quiet classroom that had no external windows. It was administered to Class 04010-06 on April 5, 2005 at the Naval School of Health Sciences. The location was also a quiet classroom that had no external windows. The questionnaire was distributed to the participants in two separate groups by the same instructor. The instructors were told about the study that was being conducted, but they were given very few details about the potential implications and outcomes. This precaution method was taken to avoid unwanted sample contamination.

Group 1- Class 04015-06

The students were new arrivals at the school who were given the questionnaire to complete. The questionnaires responses were treated in a confidential manner and the students were not given the opportunity to discus the questions or their responses with other students. Once the students completed the questionnaire they were asked to hand them in and report immediately to their living quarters. The questionnaire was *not* completed by all students on the date it was administered; two students were excused by the instructor for personal reasons. These two excused students completed the questionnaire on April 5, 2005 and had no exposure to others who had already completed the survey. The questionnaires completion rate for this class was therefore 100 percent.

Group 2- Class 04010-06

The same instructor distributed the instrument in the same manner as it was delivered to class 04015-06. At this session, all the students were present, with a 100 percent return and completion rate.

The completed questionnaires were filed in the Program Director's office to await the final student GPA's, which were additional data used in this study.

Data Analysis

Data analysis included gathering, collating, and analyzing questionnaire responses of the participants. Both groups of students were combined and then subcategorized by the number of semester hours they had taken in college. The dependent variable, Grade Point Average for each class, was calculated as mean, minimum scores, maximum scores, and standard deviation utilizing SPSS data summary and analytical procedures. Frequency values as well as other descriptive statistics were calculated for no college experience, 3-12 hours, 27-36 hours, and 39 and over semester hours. Additionally, analysis of the variance (ANOVA) was conducted for college experience versus no college experience per class. Then ANOVAs were also completed per class comparing all levels of college experience. Lastly, the previous data was also then combined for both classes and ANOVAs were performed for college and no college experience and all levels of college experience. An initial analysis was conducted on all the variables to test for asymmetry of the distributions (excessive skewness) and abnormality. This was done using the exploratory and frequency distribution features available in SPSS and once completed, normality and homogeneity of the variance were found to be accurate (Howell, 1992).

In this study, the statistical significance level was an indicator of the probability that the pattern observed in the sample would exist if the null hypothesis were true. If the probability was low ($p < 0.5$), then the null hypothesis was rejected, which indicates that the data were not from a population in which the mean of the test variable was equal in the two independent groups of cases. If the probability calculated was high ($p > 0.5$), then the null hypothesis was accepted, indicating that the data were from a population in which the means of the test variable were comparable. The data were presented in pie charts, bar graphs, and were also used to measure differences between the two mean samples (GPA and number of college semester hours).

If the variability between the classes was considerably higher than the variability within classes, then evidence of a casual effect was provided. If the variability between class means was much greater that the variability within classes, then the test will determine that there was a difference between sample means (a rejection of the null hypothesis that there is no difference between sample means).

If on the other hand, the difference between the sources of variability (within samples and between samples) falls within the range expected from sampling error, then the test will determine that there was no difference between sample means (acceptance of the null hypothesis that there was no difference between population means).

The ANOVA is a suitable test to substantiate this study because the requirements are met in this research project: (1) The study incorporated one independent variable with at least two levels (college or no college experience), (2) the levels of the independent variable differed either qualitatively or quantitatively (no college experience or college experience subcategorized into number of semester hours), and (3) individuals appeared in only one class.

Limitations

There were factors in the research design that may have affected its internal and external validity. The number of college courses a student had accumulated should reasonably influence their GPA, and threats to internal validity included subject characteristics, location, instrumentation, implementation, and researcher bias.

Participant Selection

The selection of participants was not randomized and may have resulted in the individuals differing from one another in unintended ways that were related to the variables studied. The four characteristics that were of concern were ethnicity, gender, motivation and age they affect the academic success of the participants.

Ethnicity: For the purpose of this study the effects of ethnicity were not analyzed.

Gender: For gender, the groups had similar gender proportions and likely was not an issue.

Location: Military students are constantly under tremendous pressures to excel in coursework and physical readiness, thus the location may affect the student's responses. The researcher attempted to control the affect of the location by not allowing any outside influences to distract the students and the students were surveyed in a classroom setting at Naval School of Health Sciences.

Motivation: The researcher categorized the participants into three groups: Class 04010-06, Class 04015-06, and both classes combined. Had all groups been sampled together, the results may have been skewed. There were subtle differences between the three groups in

respects to GPA and number of college semester hours. For that reason, the sample was grouped so that the survey results were more meaningful and data analysis led to more valid conclusions.

Age/Maturity: Was not controlled as a threat to internal validity, the specific ages of the students was outlined in Figure 9. This factor may have influenced the outcome of the study.

Administration of the Instrument

The concern related to internal validity issues with respect to the study's instruments can be equated to the data collector characteristics in which gender, age, ethnicity, language patterns and other characteristics may affect the nature of the data. The researcher controlled this threat by utilizing the same data collector to distribute the instrument each time.

Instructor

Other related concerns were the five instructors who taught the curriculum. Here the issues were equated to, race, gender, and differing teaching styles of the instructors. To counter this threat, the military had a codified set of instructions which must be delivered in a very structured manner. This included enabling objectives and documented outcomes. For this reason there should have been no threat to internal validity. There is always a chance with issues of internal validity in respects to implementation, but since this was a casual comparative study and the researcher was utilizing a questionnaire, the threat should be minimal or none at all. In any case, the researcher controlled the threat by allowing the questionnaire to be administered by the same instructor.

Researcher Bias

Researcher bias must be considered as a potential threat to the study. At the time of the study the researcher was an outsider looking into the program, but in January 2006, the researcher became the Department Head at the MLT program at NSHS in San Diego, California where this study was conducted. The threat may have included the possibility researcher unknowingly creating the potential for a negative or positive program evaluation through this study. In this case, this threat must be stated so it can be addressed in later chapters as a potential issue within this study. The external validity, in which the research findings can be generalized to the target population, should also transcend to other military schools.

Summary

Chapter III discussed the study's research methodology, participant selection, instruments, procedures, including data collection and analysis, internal and external validity, with discussion on limitations of the research. Chapter IV includes a detailed analysis of the collected data, describing the similarities and differences between the study's two student groups.

CHAPTER IV

RESULTS AND DISCUSSION

Introduction

The purpose of this study was to investigate whether students with prior college experience selecting a military career were better prepared for challenges in military schools than those students who have had no previous college experience. A questionnaire was used to collect data from students in the program, and categorize student responses into two separate groups. Students without college experience and students with college experience. The results and analysis of data in this chapter are divided into two main sections. First, the research question is restated followed by tables, figures and a narrative description of the results. Second, a discussion of the findings is presented.

Results

Research Question: Was there a difference between the grade point average (GPA) of military students who had prior college experience compared to military students without prior college experience in the Navy's Medical Laboratory Technician program from May 2004 to August 2005?

Null hypothesis H_o: There was no difference in grade point average (GPA) of military students with and without prior college experience who were enrolled in the Navy's Medical Laboratory Technician program from May 2004 to August 2005.

The study investigated whether there was a difference between the grade point average (GPA) of military students who had prior college experience compared to military students without prior college experience in the Medical Laboratory Technician program at the Naval School of Health Sciences located in San Diego, California.

The instrument (Appendix A) required students to indicate their responses to three questions: (1) Had the student taken English Composition I, English Composition II, College

Algebra, or a Humanities course? (2) How many semester hours had the student taken in college? Semester hours were divided on the questionnaire into the following categories of hours: 3–12 hrs, 15–24 hrs, 27–36 hrs, and 39 hrs and above, and question (3) Had the student received an Associate's degree? If yes, students were asked to provide the name of the institution and date of graduation. The independent variable in this study was college experience, which was considered categorical and nominal data. The dependent variable in this study was Grade Point Average, which was considered quantitative and ratio data.

An ANOVA was conducted for each class separately and a separate analysis was then performed after both classes were combined. Tables 3 and 4 compare the students from class 04015-06 and 04010-06 in respects to those with college experience and those students with no college experience. The column labeled "SIG" is the p-value in relation to the alpha value, which for this study was set at p<.05. If the value was less than p<.05 (the alpha level), it was statistically significant. The column labeled "Partial ETA Squared" is the effect size. This is the proportion of the variance plus in the dependent variable (GPA) attributable to effect or independent variable (prior college experience) that factor explained. The closer to 1, the better, and closer to zero signify that the factor had no bearing on the study's outcome/dependent variable.

Table 3

Class 04015-06: With college or no college experience

Tests of Between-Subjects Effects[b]

Dependent Variable: GPA

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	16.397[a]	1	16.397	3.104	.091	.119
Intercept	169810.181	1	169810.181	32146.284	.000	.999
ANYCOLL	16.397	1	16.397	3.104	.091	.119
Error	121.496	23	5.282			
Total	212540.893	25				
Corrected Total	137.893	24				

a. R Squared = .119 (Adjusted R Squared = .081)

b. CLASS = 04015-06

Table 4

Class 04010-06: With college or no college experience

Tests of Between-Subjects Effects [b]

Dependent Variable: GPA

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1.911[a]	1	1.911	.302	.588	.013
Intercept	195798.875	1	195798.875	30927.700	.000	.999
ANYCOLL	1.911	1	1.911	.302	.588	.013
Error	145.610	23	6.331			
Total	212974.735	25				
Corrected Total	147.521	24				

a. R Squared = .013 (Adjusted R Squared = -.030)

b. CLASS = 04010-06

Tables 5-10 list the central tendencies in regards to GPA for both classes combined.

Table 5

Both classes mean GPA for no college experience:

Descriptive Statistics[a]

	N	Minimum	Maximum	Mean	Std. Deviation
GPA	16	88.16	96.10	91.4506	2.57164
Valid N (listwise)	16				

a. ANYCOLL = no college

Table 6

Both classes mean GPA for some with college experience:

Descriptive Statistics[a]

	N	Minimum	Maximum	Mean	Std. Deviation
GPA	34	88.62	97.25	92.5826	2.28551
Valid N (listwise)	34				

a. ANYCOLL = some college

Figure 14, displays the subtle differences in GPA between the students with college experience versus no college experience for both classes.

GPA split by college versus no college
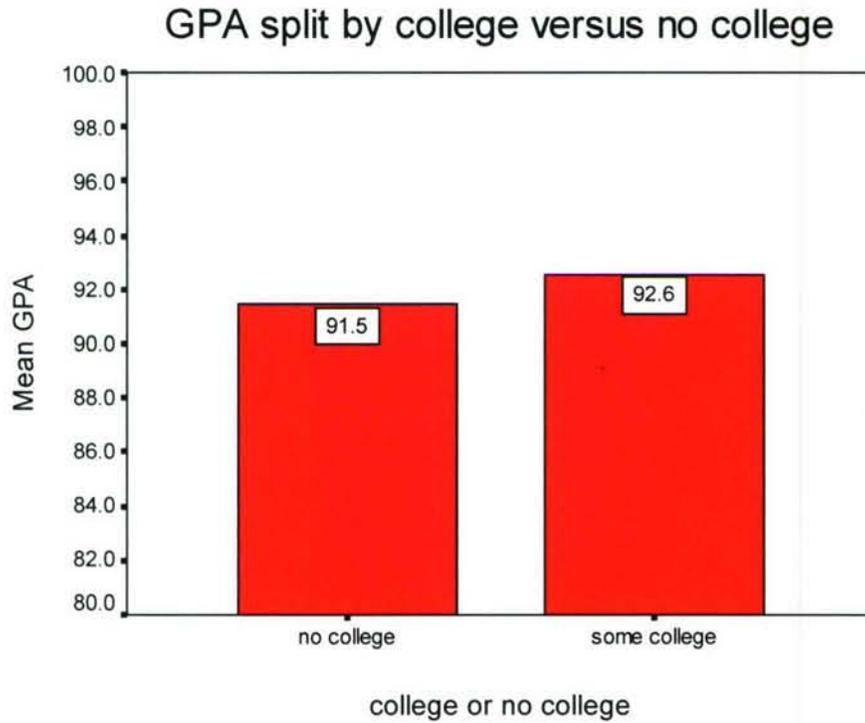
Figure 14. GPA split by college experience versus no college experience for both classes.

Table 7

Both classes mean GPA for 3-12 college semester hours:

Descriptive Statistics[a]

	N	Minimum	Maximum	Mean	Std. Deviation
GPA	16	88.62	97.25	92.2463	2.14968
Valid N (listwise)	16				

a. COLLEGE = 3-12hours

Table 8

Both classes mean GPA for 15-24 college semester hours:

Descriptive Statistics[a]

	N	Minimum	Maximum	Mean	Std. Deviation
GPA	3	93.19	96.91	94.4800	2.10578
Valid N (listwise)	3				

a. COLLEGE = 15-24hours

Table 9

Both classes mean GPA for 27-36 college semester hours:

Descriptive Statistics[a]

	N	Minimum	Maximum	Mean	Std. Deviation
GPA	4	90.09	94.77	92.4450	2.06521
Valid N (listwise)	4				

a. COLLEGE = 27-36hours

Table 10

Both classes mean GPA for 39+ college semester hours:

Descriptive Statistics[a]

	N	Minimum	Maximum	Mean	Std. Deviation
GPA	11	89.15	96.28	92.6045	2.62116
Valid N (listwise)	11				

a. COLLEGE = 39+hours

Figure 15, illustrates the differences amongst the 5 categories of college semester hours with all students combined. Note that 15-24 hours of college experience sample size is only 3 students.

GPA split by hours of college
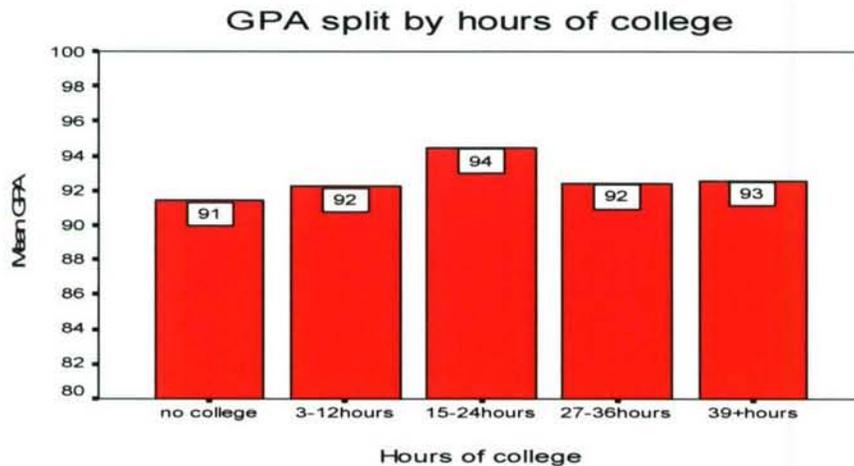
Figure 15. GPA for both classes combined based on college semester hours.

Table 11 combined both classes and compares them in respects to those with college experience and those students with no college experience.

Table 11

Both classes: With college or no college experience

Tests of Between-Subjects Effects

Dependent Variable: GPA

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	13.942[a]	1	13.942	2.464	.123	.049
Intercept	368486.508	1	368486.508	65128.326	.000	.999
ANYCOLL	13.942	1	13.942	2.464	.123	.049
Error	271.577	48	5.658			
Total	425515.628	50				
Corrected Total	285.519	49				

a. R Squared = .049 (Adjusted R Squared = .029)

Table 12 is the mean GPA for all students in class 04015-06. Tables 13 (no college experience) and 14 (college experience) are the descriptive statistics for class 04015-06, measuring central tendency in regards to GPA. As one can see the college experienced students have a higher overall GPA than those with no college experience. See Figure 12 as it illustrates this difference in GPA.

Table 12

Class 04015-06, mean GPA for all students:

Descriptive Statistics[a]

	N	Minimum	Maximum	Mean	Std. Deviation
GPA	25	88.62	97.25	92.1744	2.39699
Valid N (listwise)	25				

a. CLASS = 04015-06

Table 13

Class 04015-06: descriptive, no college experience GPA

Descriptive Statistics[a]

	N	Minimum	Maximum	Mean	Std. Deviation
GPA	7	88.96	94.09	90.8757	1.95386
Valid N (listwise)	7				

a. CLASS = 04015-06, ANYCOLL = no college

Table 14

Class 04015-06: descriptive, with college experience GPA

Descriptive Statistics[a]

	N	Minimum	Maximum	Mean	Std. Deviation
GPA	18	88.62	97.25	92.6794	2.40820
Valid N (listwise)	18				

a. CLASS = 04015-06, ANYCOLL = some college
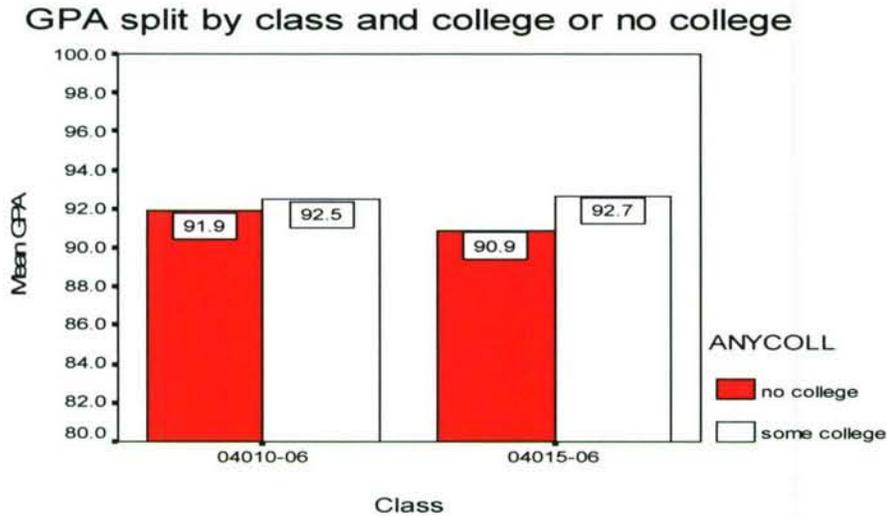
Figure 16. GPA split by class and college experience and no college experience.

Table 15 is the mean GPA for class 04010-06. Tables 16 (no college experience) and 17 (college experience) are the descriptive statistics for class 04010-06, measuring central tendency in regards to GPA. As one can see the college experienced students have a higher overall GPA than those with no college experience.

Table 15

Class 04010-06, mean GPA for all students:

Descriptive Statistics[a]

	N	Minimum	Maximum	Mean	Std. Deviation
GPA	25	88.16	96.91	92.2664	2.47925
Valid N (listwise)	25				

a. CLASS = 04010-06

Figure 17 depicts the combined GPA per class including students with college experience and students without college experience.

GPA split by class
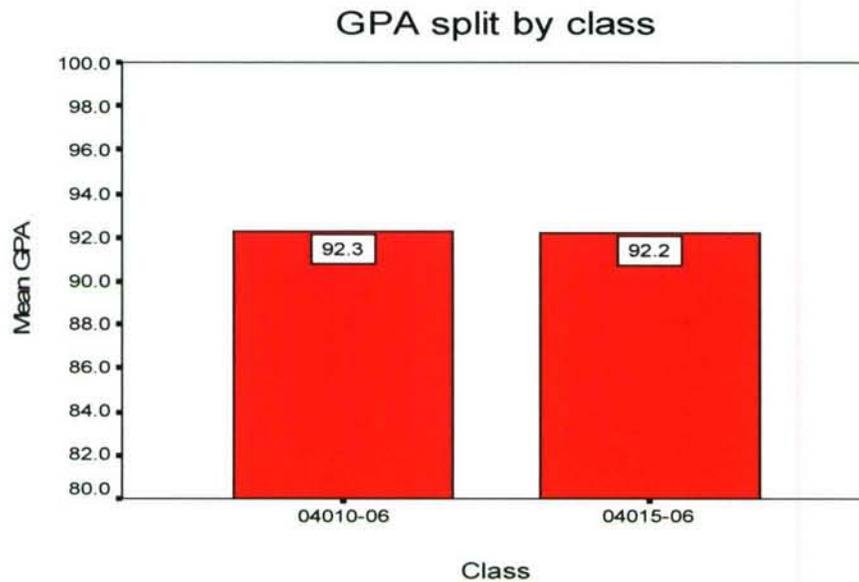
Figure 17. GPA for classes 04010-06 and 04015-06.

Table 16

Class 04010-06: descriptive, no college experience GPA

Descriptive Statistics[a]

	N	Minimum	Maximum	Mean	Std. Deviation
GPA	9	88.16	96.10	91.8978	3.00377
Valid N (listwise)	9				

a. CLASS = 04010-06, ANYCOLL = no college

Table 17

Class 04010-06: descriptive, with college experience GPA

Descriptive Statistics [a]

	N	Minimum	Maximum	Mean	Std. Deviation
GPA	16	89.15	96.91	92.4738	2.21252
Valid N (listwise)	16				

a. CLASS = 04010-06, ANYCOLL = some college

Tables 18-20 are the descriptive statistics for class 04015-06, measuring central tendency in regards to GPA and the number of college semester hours. Incremental increases in overall GPA can be seen as the number of college semester hour's increase. Figure 18 illustrates this gradual increase.

Table 18

Class 04015-06: descriptive, 3-12 college semester hours

Descriptive Statistics [a]

	N	Minimum	Maximum	Mean	Std. Deviation
GPA	12	88.62	97.25	92.0000	2.36075
Valid N (listwise)	12				

a. CLASS = 04015-06, COLLEGE = 3-12hours

Table 19

Class 04015-06: descriptive, 27-36 college semester hours

Descriptive Statistics [a]

	N	Minimum	Maximum	Mean	Std. Deviation
GPA	2	91.50	94.77	93.1350	2.31224
Valid N (listwise)	2				

a. CLASS = 04015-06, COLLEGE = 27-36hours

Table 20

Class 04015-06: descriptive, 39+ college semester hours

Descriptive Statistics [a]

	N	Minimum	Maximum	Mean	Std. Deviation
GPA	4	91.65	96.28	94.4900	2.07141
Valid N (listwise)	4				

a. CLASS = 04015-06, COLLEGE = 39+hours

GPA split by hours of college
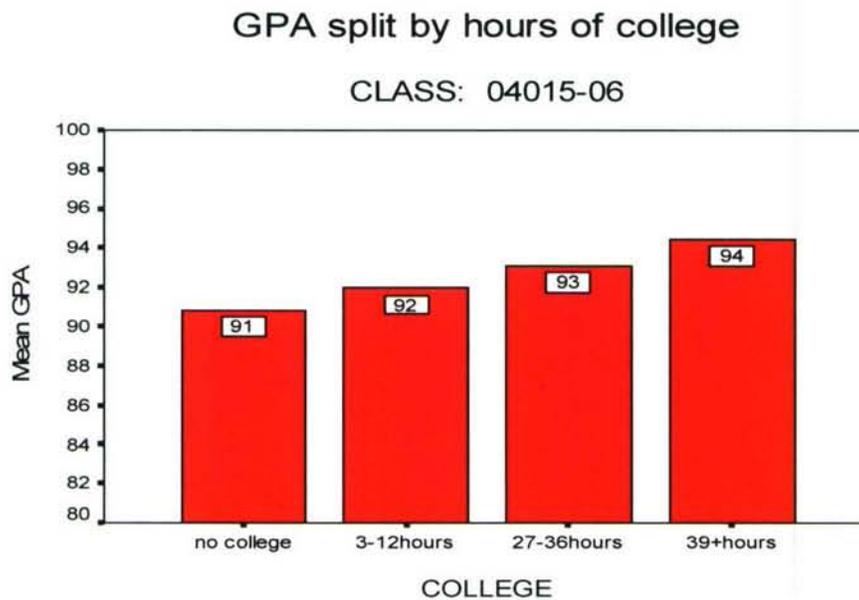
CLASS: 04015-06

Figure. 18 GPA for Class 04015-06 students with college experience.

Tables 21-24 are the descriptive statistics for class 04010-06, measuring central tendency in regards to GPA and the number of college semester hours. For this class the overall GPA levels off at 15-24 semester hours and then drops down to 91.8 % and 91.5 % respectively.

Table 21

Class 04010-06: descriptive, 3-12 college semester hours

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
GPA	4	91.87	94.86	92.9850	1.30411
Valid N (listwise)	4				

a. CLASS = 04010-06, COLLEGE = 3-12hours

Table 22

Class 04010-06: descriptive, 15-24 college semester hours

Descriptive Statistics[a]

	N	Minimum	Maximum	Mean	Std. Deviation
GPA	3	93.19	96.91	94.4800	2.10578
Valid N (listwise)	3				

a. CLASS = 04010-06, COLLEGE = 15-24hours

Table 23

Class 04010-06: descriptive, 27-36 college semester hours

Descriptive Statistics[a]

	N	Minimum	Maximum	Mean	Std. Deviation
GPA	2	90.09	93.42	91.7550	2.35467
Valid N (listwise)	2				

a. CLASS = 04010-06, COLLEGE = 27-36hours

Table 24

Class 04010-06: descriptive, 39+ college semester hours

Descriptive Statistics[a]

	N	Minimum	Maximum	Mean	Std. Deviation
GPA	7	89.15	94.88	91.5271	2.36245
Valid N (listwise)	7				

a. CLASS = 04010-06, COLLEGE = 39+hours

GPA split by hours of college
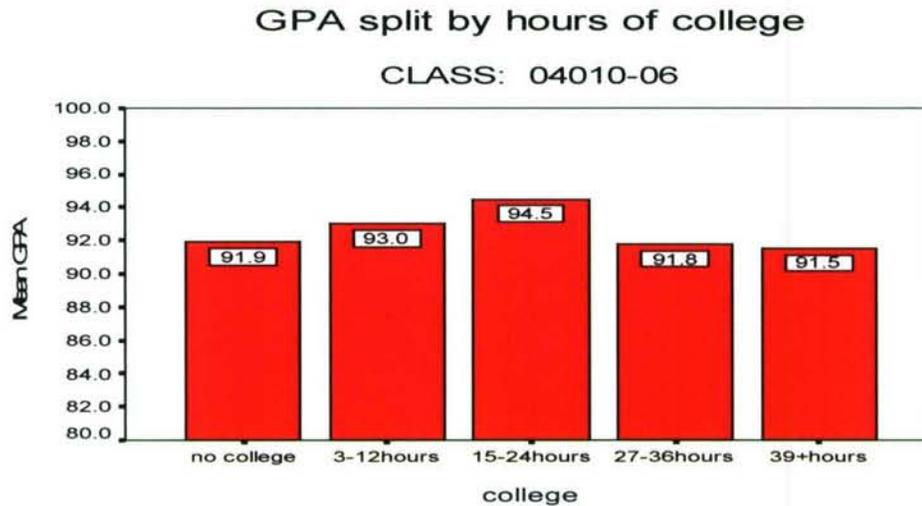
CLASS: 04010-06

Figure 19. GPA for Class 04010-06 students with college experience.

Tables 25 and 26 (Both Classes Combined). The row that is labeled "Any College" signifies a comparison of those students with college experience to those without college experience. A row that is labeled "College" signifies students with all levels of college experience were compared to each other. A row that is labeled "Class" compares the GPAs of the two classes. A row that is labeled "Class*College" is an interaction, if significant, it could signify that the relationship between GPA and College experience is different for each class.

Table 25

Both Classes Interaction: With college or no college experience

Tests of Between-Subjects Effects

Dependent Variable: GPA

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	18.414[a]	3	6.138	1.057	.377	.064
Intercept	363874.685	1	363874.685	62665.284	.000	.999
CLASS	1.791	1	1.791	.309	.581	.007
ANYCOLL	15.222	1	15.222	2.621	.112	.054
CLASS * ANYCOLL	4.052	1	4.052	.698	.408	.015
Error	267.105	46	5.807			
Total	425515.628	50				
Corrected Total	285.519	49				

a. R Squared = .064 (Adjusted R Squared = .003)

Table 26

Both Classes Interaction: college experience (all levels compared)

Tests of Between-Subjects Effects

Dependent Variable: GPA

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	57.908[a]	8	7.238	1.304	.269	.203
Intercept	283643.374	1	283643.374	51093.022	.000	.999
CLASS	2.755	1	2.755	.496	.485	.012
COLLEGE	35.529	4	8.882	1.600	.193	.135
CLASS * COLLEGE	30.914	3	10.305	1.856	.152	.120
Error	227.612	41	5.552			
Total	425515.628	50				
Corrected Total	285.519	49				

a. R Squared = .203 (Adjusted R Squared = .047)

Discussion

Was there a difference between the grade point average (GPA) of military students who had prior college experience compared to military students without prior college experience in the Navy's Medical Laboratory Technician program from May 2004 to August 2005? The researcher questioned whether there was a difference in GPA of those students who had college experience as compared to those students without college experience.

Both classes were compared to each other in respects to the independent variable which was college experience and the dependent variable which was Grade Point Average. The measurement of central tendencies was calculated for GPA by class and number of semester hours (college experience). Figure 18 noted that the GPA peaked at 94.0 % for class 04015-06 with students who had 39 or more college semester hours; however this group only contained three students. Figure 19 noted the GPA peaked at 94.5 % for class 04010-06 with students who had 15-24 college semester hours; however this group only contained three students. When comparing students GPAs by class the students with some college experience had higher GPAs than those without college experience as evidenced in Figure 16. However, the difference was less than 2 percentage points. The researcher had to then determine was the difference statistically significant?

Utilizing the effect size as a tool in determining the statistical significant difference amongst students with or without college experience was not the sole factor employed in this

study. Remembering that this is the proportion of the variance that factor explained, compared to the variance left unexplained, so the closer to 1, the better, and closer to zero signifies that the factor had no bearing on the outcome/dependent variable (GPA). The second statistical value which helped to determine if the null hypothesis would be retained or rejected was the F-test p-value. The alpha level for this study was set at $p < .05$. If the value was small ($p < .05$) then the null hypothesis would be rejected. Across the board the effect sizes were generally $> .10$. For partial eta squared .01-.08 is SMALL, .09-.24 is MEDIUM and $> .25$ is LARGE. Anything less than .10 is assumed to be no relationship. From a practical standpoint anything below this number is unimportant.

Overall, the effect size had either no relationship or was small (see tables 3-4 and 21-26 for specifics). Effect sizes are independent of sample sizes.

After reviewing the data for statistical significance the researcher found that none of the values were $p < .05$, which in this case required the researcher to retain the null hypothesis. There was no difference found in grade point average (GPA) of military students with and without prior college experience who were enrolled in the Navy's Medical Laboratory Technician program from May 2004 to August 2005. Also noting the fact that no student did poorly in the classes (minimum GPA score of 88.16 % and a maximum GPA of 97.25 %) that even students without prior college experience, has a good chance of succeeding in the Navy's MLT program. This notion further supports the idea that college experience was not a good indication of how students did in this study.

Was the purpose of the study achieved? After review of the data it was unlikely that GPA did impact students with or without college experience for the two classes that were researched. However, it must be noted that the students who did not complete the program were not included in the data analysis of this study. These students may have had a potential impact on the final results. For example in class 04015-06 the number of students originally registered was 35 with 25 graduating, which translated to failure rate of 28.5 %. As for class 04010-06, the number of students registered was 29 with 25 graduating, which also translated to a failure rate of 13.7 %. What were the factors that caused these failure rates? One possible explanation could be disciplinary issues. In addition, these students may not have had the college experience and/or motivation necessary to complete this curriculum. At what

point during the curriculum did they fail? These students potentially could have had some impact on the study, but the data for these students were not available.

The literature review supported three arguments with respect to prerequisite courses. First, students who take prerequisite college courses in some cases do not do any better at the next level of instruction compared to students who do take prerequisite courses. Second, students who do take college prerequisite courses do significantly better than those who do not. Lastly, community college students who are preparing to transfer to a four-year institution in most cases are better prepared than native freshman students in respect to their grade point average (GPA) (which is also inclusive of the number of semester hours they had taken). As stated earlier there was no significant difference in GPA for those MLT students with college experience as compared to those with college experience. Student's who had prior college experience, as measured by the number of semester hours, were more likely to be successful at a four-year institution, or at least be as successful as the native students. These findings were discussed by Belcheir's work (2001), in which transfer students who had 15 semesters hours or less had the same odds of graduation as the native students. When transfer students had 30 hours or less, they increased their odds of graduation at the 4- and 6- year mark after entry into the four-year institution. Finally, at 60 credits or less, a significant difference was indicated in graduation rates when comparing the transfer students and native students at the 4-, 6-, and 10- year marks. As this study did not go beyond their success after graduation from the program this may be a question that can be researched in the future and was discussed in greater detail in Chapter V (Christie, 2003; Mercer, 1995).

As discussed in the chapter III under Limitations, it was noted that subject characteristics, especially motivation can be a factor that may have impacted the results of the study. It should be kept in mind that students who do well academically in high school may also be successful college students. Batzer (1997) and Spurling (2002) noted that a student's motivation to succeed in college may be a personal characteristic that can be difficult to measure and in some respects may be the difference between success and failure at the college level. Additionally, Marzano (1992) described three factors that influence student's motivation to learn. Students are more likely to put forth the effort when there is task clarity, relevance and potential for success (when they believe they can successfully learn and meet the evaluative expectations set by the instructor).

Summary

Chapter IV presented and discussed the results of the study, significant findings, and similarities and differences between the study's two student groups and identified several questions which need to be addressed in Chapter V. Chapter V presents an overview of the study, conclusions of the study and recommendations for further research.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

In this final chapter the research findings of chapters I through IV were summarized. This provided a background for the conclusions and recommendations that followed.

Summary

The structure of Chapter I included the introduction of the problem and its potential significance to the military. Many students have been guided to complete prerequisites in preparation for college courses. These students then enter college better prepared to handle more advanced instruction as they continue from semester to semester with fewer learning difficulties along the way. Well-prepared and well-guided students are more likely to graduate within a predetermined timeframe, and enter society prepared, exactly as they need to be, to succeed. Young men and women who enter the military and want to go to military schools for their college education may soon be required to have prior college coursework. The study investigated whether there was a difference between the grade point average (GPA) of military students who had prior college experience compared to military students without prior college experience in the Medical Laboratory Technician Program at the Naval School of Health Sciences located in San Diego, California.

Chapter II consisted of a review of the literature that investigated current research and the importance of community college preparation for students transferring to four-year institutions. Additionally, Chapter II discussed what is the relative value of prerequisite courses, and the difficulties that students face today in regards to the attainment of higher education. Which avenue better prepares a student for a successful academic future was not

clear; however, the literature supported prerequisite courses, in most cases, as being beneficial to student success—especially when the course was at a higher level of difficulty.

Chapter III discussed the study's research methodology, participant selection, instruments, procedures, including data collection and analysis, internal and external validity, with discussion on limitations of the research.

Chapter IV presented and discussed the results of the study, significant findings, and similarities and differences between the study's two student groups.

Conclusions

Research Question: Was there a difference between the grade point average (GPA) of military students who had prior college experience compared to military students without prior college experience in the Navy's Medical Laboratory Technician program from May 2004 to August 2005?

After reviewing the data for statistical significance the researcher found that none of the values were $p<.05$, which in this case compelled the researcher to retain the null hypothesis. There was no difference found in grade point average (GPA) of military students with and without prior college experience who were enrolled in the Navy's Medical Laboratory Technician program from May 2004 to August 2005. It was also noted that no student did poorly in the classes (minimum GPA score of 88.16 % and a maximum GPA of 97.25 %) and that even students without prior college experience had a good chance of succeeding in the Navy's MLT program. However, the best and most recent research work focused on examining grade point averages in follow-up courses or persistence rates in college. Koker (2003) concluded that students who attended special programs, such as remedial education programs that were devised for high risk students, were more successful at the two-year and four-year institutions than those students who did not attend remedial education programs.

What this current study did not tell us is what happened to the students who did not complete the program. The unanswered questions of why these students left the Medical Laboratory Technician Program , where they went, and whether or not they returned should be of particular interest to the Navy.

Recommendations

Any changes or suggestions of change within an organization must be research and data driven. From the perspective of the students at the Navy's Medical Laboratory Technician Program college experience may not solely be a determining factor in successful completion of this program. As this study did not examine student success after program completion, future research should consider students success at a four-year institution. Furthermore, a program evaluation with input from both graduates and supervisors perspectives may also help to shed some light on this program's success as seen by those who work (graduates and supervisors) in the field. In addition, students who were unable to finish the program for what ever reasons should have been included in this study so a true measure of students GPA and college experience can determine the impact on the completion of this program.

The Navy currently sends six month evaluations (Appendix C and D) to both students and supervisors and the goal is to ascertain whether or not the student's and supervisors competencies are in total alignment with MLT program objectives. With that said, only current and future research will prove to be the engine that drives curriculum and technological advancements in order to meet the MLT program demands and the ever increasing needs of the Navy.

REFERENCES

Anglin, L. W., Davis, J. W., & Mooradian, P. W. (1993, April). *Do transfer students graduate? A comparative study of transfer students and native students.* Paper presented at the 1993 Annual Meeting of the American Educational Research Association, Atlanta Georgia. Retrieved March 22, 2005, from ERIC online (ED335979) at http://www.cete.org/acve/digests_archive.asp.

Armed Services Vocational Aptitude Battery. *What is the ASVAB?* Retrieved March 2, 2005, from http://www.baseops.net/militarybooks/asvab/.

Arnold, J. C. (2001, Summer). Student transfer between Oregon Community Colleges and Oregon University System Institutions. *New directions for Community Colleges, 114,* 1-15.

Arisimendi-Pardi, E. J. (1997, March). Comparison of the final grades of students in Calculus for Business, Management and Social Sciences with and without a prior College Algebra Course. Retrieved March 10, 2005, from ERIC online (ED 405924) at http://www.cete.org/acve/digests_archive.asp.

Bashford, J. (2000, August). How well do prerequisite courses prepare students for the next course in the sequence? *Information capsule.* Retrieved March 22, 2005, ERIC online (ED 448779) at http://www.cete.org/acve/digests_archive.asp.

Batzer, L.A. (1997, October). The effect of remedial education programs on academic achievement and persistence at the Two-Year community college. Retrieved March 22, 2005, from ERIC online (ED 433867) at http://www.cete.org/acve/digests_archive.asp

Belcheir, M. J. (2001, June). *Predicting the probability of graduating: Differences for freshman and transfers at a metropolitan university.* AIR 2001 Annual Forum Paper. Retrieved March 10, 2005, from ERIC online (ED 457742) at http://www.cete.org/acve/digests_archive.asp .

Callahan, S. (1993, November). Mathematics placement at Cottey College. Retrieved March 10, 2005, from ERIC online (ED 373813) at http://www.cete.org/acve/digests_archive.asp.

Carlan, P. E., Byxbe, F. R. (2000, Fall). Community Colleges under the microscope: An analysis of performance predictors for native and transfer students. *Community College Review, 28, (2),* 27-42. Retrieved March 10, 2005, from http://www.ncsu.edu/.

CNN Money. *Four Myths about College Costs.* Retrieved March 2, 2005, from http://money.cnn.com/2005/01/20/pf/college/myths_0502/ .

Christie, R.L., & Hutcheson, P. (2003, Fall). Net effects of institutional type on baccalaeraute

degree attainment of "Traditional" students. *Community College Review, 31, (2),* 1-21.

Fernandez, E. (2002). *An evaluation of student performance in an introductory programming course with and without the quantitative analysis prerequisite: A Piece of the assessment process.* Proceedings of the 2002 American Society for Engineering Education Annual Conference & Exposition. Retrieved March 10, 2005, from http://www.engr.iupui.edu/cpt/assess/documents/aseefinal.pdf.

Hollomon, C. A., & Snowden, M. (1996, November). Comparing performance of two-year community college students to four-year native students. Retrieved March 21, 2005, from ERIC online (ED 403005) at http://www.cete.org/acve/digests_archive.asp.

Howell, D. C. (1992). *Statistical methods for Psychology* (3rd ed.). Boston: PWS-Kent.

Kalina, M., Phillips, B., Dunlap, M., & Lervold, J. (1995). Funds for instructional improvement: Pre/co/advisory requisite study. Retrieved March 22, 2005, from ERIC online (ED 389349) at http://www.cete.org/acve/digests_archive.asp.

Koker, M., & Hendel, D.D., (2003). Predicting graduation rates for three groups of new advanced-standing cohorts. *Community College Journal of Research and Practice, 27, (2),* 131-146.

Laanan, F. S. (1995, October). Making the transition: An exploratory study of academic achievement, involvement, adjustment, and satisfaction, of transfer students at UCLA. Retrieved March 21, 2005, from ERIC online (ED 400888) at http://www.cete.org/acve/digests_archive.asp.

Marzano, R. (1992). *A different kind of classroom: Teaching with dimensions of learning.* Alexandria, VA: ASCD.

Mercer, B. (1995, December). A comparison of students who followed mathematics advisement recommendations and students who did not at Rochester Community College. Retrieved March 10, 2005, from ERIC online (ED 400014) at http://www.cete.org/acve/digests_archive.asp.

Minear, D.J. (1998, January). Models for understanding and predicting the undergraduate educational attainment patterns of public community college students who transfer with the Associate Arts Degree into a state university system. Retrieved March 22, 2005, from ERIC online (ED 427809) at http://www.cete.org/acve/digests_archive.asp.

Spurling, S., & Gabriner, R. (2002, April). The effect of concurrent enrollment programs upon student success at City College of San Francisco: Findings. Retrieved March 10, 2005, from ERIC online (ED 470634) at http://www.cete.org/acve/digests_archive.asp.

Stupka, E. (1993, July). An evaluation of the short term and long term impact a student success course has on academic performance and persistence. Retrieved March 10, 2005, from ERIC online (ED 364300) at http://www.cete.org/acve/digests_archive.asp.

Wilson, C. E. (1994, December). Comparison of final course grades in introductory college chemistry with or without math prerequisite. Retrieved 10 March, 2005, from ERIC online (ED 392507) at http://www.cete.org/acve/digests_archive.asp.

APPENDIX A

REVISED MLT SUPPLEMENTAL QUESTIONNAIRE

NAVAL SCHOOL OF HEALTH SCIENCES
MLT SUPPLEMENTAL QUESTIONNAIRE

NAME: _____ RANK: _____ SSN: _____ CLASS: _____
     (Last, First, MI)
Sex: _____ Male _____ Female   Age: _____

STUDENT DEMOGRAPHICS: (Place an X on one line)

_____ American Indian	_____ Asian/Pacific Islander
_____ Black	_____ Caucasian
_____ Hispanic	_____ Other

MLT CANTRAC PREREQUISITES:

Did you come to this school directly from Basic Hospital Corps School?
    (Do not count other schools or temporary duties)   Yes   No
    If yes, did you choose to come to MLT School?   Yes   No

Did you choose MLT School because you were interested in the field?   Yes   No
    (If No, why? _____)

List your last three assignments   _____
                                 _____
                                 _____

Have you taken a year of (High School or College level) Chemistry?
    (receiving a minimum Grade of C)   Yes   No

Have you taken a year of (High School or College level) Algebra?
    (receiving a minimum Grade of C)   Yes   No

STUDENT EDUCATIONAL BACKGROUND:

Do you have an Associate Degree?   Yes / No

    If yes: what school? _____ when completed? _____

Have you requested an official transcript?   Yes / No

Have you requested a SMART transcript?   Yes / No
COLLEGE EXPERIENCE:

Have you taken any of the following college courses?

English Composition I   Yes / No
          Where _____ When _____ Grade _____

English Composition II   Yes / No
          Where _____ When _____ Grade _____

College Algebra   Yes / No
          Where _____ When _____ Grade _____

Humanities   Yes / No
          Where _____ When _____ Grade _____

How many **total** college semester hours have you successfully completed with a grade of C or higher?   Mark the best answer.

_____ None

_____ 1 to 4 classes (3 – 12 semester hours)

_____ 5 to 8 classes (15 to 24 semester hours)

_____ 9 to 12 classes (27 to 36 semester hours)

_____ 13 or more classes (39 semester hours or more)

Have you used Tuition Assistance (TA) in the past 12 months?   Yes / No

Have you registered on Navy Knowledge Online (NKO)?   Yes / No

Have you registered on Navy Medicine Online (NMO)?   Yes / No

COMPUTER TECHNOLOGY EXPERIENCES:

How many on-line courses (college, CME) have you completed? (Place an X on one line)

        0 ___   1 ___   2 ___   3 or more ___

How many Computer-Based-Training (CBT) courses have you completed?

        0 ___   1 ___   2 ___   3 or more ___

What is your experience level playing computerized video games on a personal computer? (Circle best answer)

       0 = never played
       1 = played once or twice in last year
       2 = played once or twice in last month
       3 = played once or twice in last week
       4 = played almost every day

What is your experience levels playing games with console technology (like X-Box or Playstation)?

       0 = never played
       1 = played once or twice in last year
       2 = played once or twice in last month
       3 = played once or twice in last week
       4 = played almost every day

APPENDIX B

ORIGINAL MLT SUPPLEMENTAL
QUESTIONNAIRE

NAVAL SCHOOL OF HEALTH SCIENCES
MLT SUPPLEMENTAL QUESTIONNAIRE

NAME: _____ RANK: _____ SSN: _____ CLASS: _____
     (Last, First, MI)
Sex: ____ Male ____ Female   Age: _____

STUDENT DEMOGRAPHICS: (Place an X on one line)

_____ American Indian   _____ Asian/Pacific Islander
_____ Black   _____ Caucasian
_____ Hispanic   _____ Other

MLT CANTRAC PREREQUISITES:

Did you come to this school directly from Basic Hospital Corps School?
    (Do not count other schools or temporary duties)   Yes   No
    If yes, did you choose to come to MLT School?   Yes   No

Did you choose MLT School because you were interested in the field?   Yes   No
    (If No, why? _____)

List your last three assignments   _____
                                   _____
                                   _____

Have you taken a year of (High School or College level) Chemistry?
    (receiving a minimum Grade of C)   Yes   No

Have you taken a year of (High School or College level) Algebra?
    (receiving a minimum Grade of C)   Yes   No

STUDENT EDUCATIONAL BACKGROUND:

Do you have an Associate Degree?   Yes / No

    If yes: what school? _____ when completed? _____

Have you requested an official transcript?   Yes / No

Have you requested a SMART transcript?   Yes / No

COLLEGE EXPERIENCE:

Have you taken any of the following college courses?

English Composition I Yes / No

Where _____ When _____ Grade _____

English Composition II Yes / No

Where _____ When _____ Grade _____

College Algebra Yes / No

Where _____ When _____ Grade _____

Humanities Yes / No

Where _____ When _____ Grade _____

Have you used Tuition Assistance (TA) in the past 12 months? Yes / No

Have you registered on Navy Knowledge Online (NKO)? Yes / No

Have you registered on Navy Medicine Online (NMO)? Yes / No

COMPUTER TECHNOLOGY EXPERIENCES:

How many on-line courses (college, CME) have you completed? (Place an X on one line)

0 ___ 1 ___ 2 ___ 3 or more ___

How many Computer-Based-Training (CBT) courses have you completed?

0 ___ 1 ___ 2 ___ 3 or more ___

What is your experience level playing computerized video games on a personal computer? (Circle best answer)

0 = never played
1 = played once or twice in last year
2 = played once or twice in last month
3 = played once or twice in last week
4 = played almost every day

What is your experience levels playing games with console technology (like X-Box or Playstation)?

0 = never played
1 = played once or twice in last year
2 = played once or twice in last month

3 = played once or twice in last week
4 = played almost every day

APPENDIX C

NAVAL SCHOOL OF HEALTH SCIENCES, SAN DIEGO LEVEL III 6 MONTH POST GRADUATION TRAINING EVALUATION MLT GRADUATES QUESTIONNAIRE

Naval School of Health Sciences, San Diego

Level III 6 Month Post Graduation

Training Evaluation

MLT Graduate's Questionnaire

Today's Date: _____ Graduation Date: _____

Duty Station: _____

Rank: _____

Service:_____

Length of time under supervision: 1-2mos   3-6mos   7-12mos   Over 1 year

Working in specialty area: YES / NO

Please enter your class number (in the form of 04015/25): _____

Our objective is to train and provide high quality graduates that meet the Navy's medical mission. The results of the questionnaire will help us assess our training programs and identify ways to better prepare our students to perform.

Please answer the questions below. Circle your answer below each question.

My training adequately prepared me to:

1. Perform basic hematology procedures
   [Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

2. Perform basic chemistry procedures
   [Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

3. Perform basic microbiology procedures
   [Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

4. Perform basic parasitology procedures

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

5. Perform basic coagulation procedures

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

6. Perform basic specimen collection/accessioning

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

7. Perform infectious disease testing; ie. HBsAG, HCV, HIV

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

8. Cross match blood

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

9. Identify unexpected red cell antibodies

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

10. Perform ABO/RH, IAT, DAT testing

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

11. Perform blood donor screening and phlebotomy

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

12. Prepare blood products

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

13. Perform basic urinalysis procedures

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

14. Perform basic serology procedures

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

15. Perform and interpret quality control practices

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

16. Work safely with chemical/biological hazards

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

17. Perform as an entry level technician

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

Comments/suggestions:

_____

_____

_____

_____

_____

_____

_____

APPENDIX D

NAVAL SCHOOL OF HEALTH SCIENCES, SAN DIEGO LEVEL III 6 MONTH POST GRADUATION TRAINING EVALUATION MLT SUPERVISORS QUESTIONNAIRE

Naval School of Health Sciences, San Diego

Level III 6 Month Post Graduation

Training Evaluation

MLT Supervisor's Questionnaire

Date: _____

Supervisor's:

Title: _____ Rank/Service: _____ Duty Station: _____

Graduate's:

Rank: _____

Service: _____

Current duty station: _____

Graduation Date: _____

Length of time under supervision: 1-2mos   3-6mos   7-12mos   Over 1 year

Working in specialty area: YES / NO

Our objective is to train and provide high quality graduates that meet the Navy's medical mission. The results of the questionnaire will help us assess our training programs and identify ways to better prepare our students to perform.

Please answer the questions below. If answering via e-mail, please **bold** your answers, if not circle your answer below each question.

The graduate demonstrates:

1. Appropriate professional behavior

   [Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

2. Appropriate ethical behavior

   [Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

3. Appropriate military bearing

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

4. A willingness to work as a team member

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

5. The ability to communicate with others

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

6. A focus on customer satisfaction

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

7. Proficient entry level technical skills

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

8. Training in current practices and standards

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

Overall:

9. I am satisfied with the graduate's behavior

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

10. The graduate demonstrates competence in technical areas

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

The graduate adequately performs:

11. Basic hematology procedures

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

12. Basic coagulation procedures

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

13. Basic chemistry procedures

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

14. Basic microbiology procedures

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

15. Basic parasitology procedures

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

16. Collects and accessions specimens

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

17. Infectious disease testing

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

18. Blood cross matching

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

19. Identification of unexpected red cell antibodies

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

20. ABO/RH testing

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

21. IAT and DAT testing

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

22. Blood donor screening

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

23. Blood products preparation

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

24. Basic urinalysis procedures

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

25. Basic serology procedures

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

26. Quality control testing

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

27. Quality control interpretation

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

28. Safely with chemical/biological hazards

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

29. Basic laboratory principles

[Strongly Disagree]   [Disagree]   [Neither Agree Nor Disagree]   [Agree]   [Strongly Agree]

Comments/suggestions:

_____
_____
_____
_____
_____
_____
_____

ABSTRACT OF THE PROJECT

Impact of the GPA and Prior College Experience on the Completion of
the Navy Medical Laboratory Technician Program
by
Luis A. Nunez Jr
Master of Arts in Education
San Diego State University, 2005

The research literature suggests that GPA, along with previously taken college courses, is a better predictor of success of student graduation than any simple measure. The purpose of this casual comparative study was to investigate whether students with prior college experience selecting a military career were better prepared for challenges in military schools than those students who have had no previous college experience. The research was conducted at the Naval School of Health Sciences in San Diego, California, located on the grounds of Naval Medical Center San Diego, California from May 2004 to August 2005. The questionnaire required students to indicate their responses to three questions. Each student (N=50) from two different classes was administered the questionnaire. The return rate was 100 %. The study found that there was no difference in grade point average (GPA) of military students with and without prior college experience who were enrolled in the Navy's Medical Laboratory Technician program from May 2004 to August 2005. It was concluded that Navy's policy on requiring students to have certain college prerequisites may not necessarily impact their success in the MLT program.