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The Effects of Restructuring the Curriculum of the Joint Targeting School

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THE EFFECTS OF RESTRUCTURING THE CURRICULUM OF THE
JOINT TARGETING SCHOOL

A Research Paper Presented to
the Graduate Faculty of the Department of
Occupational and Technical Studies
at Old Dominion University

In Partial Fulfillment of
the Requirements for the Degree of
Masters of Science in Education

By
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October 2001
This research was conducted and prepared by Jeffrey R. Puckett under the direction of Dr. John Ritz in OTED 636, Problems in Occupational and Technical Education. It was submitted as partial fulfillment of the requirements for the degree of Master of Science.

Approved by: Dr. John M. Ritz

Date: 10-14-01

Advisor,
Graduate Program Director
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Jeffrey R. Puckett
TABLE OF CONTENT

Page

Acknowledgment .............................................. ii

Table of Figures ............................................. v

CHAPTER

I. INTRODUCTION ........................................... 1
   A. Statement of the Problem .............................. 3
   B. Research Goals ....................................... 3
   C. Background and Significance .......................... 4
   D. Limitations ............................................ 9
   E. Assumptions ............................................ 10
   F. Procedures ............................................. 11
   G. Definitions of Terms .................................. 11
   H. Overview of Chapters ................................ 12

II. REVIEW OF LITERATURE
   A. Adult Education ....................................... 15
   B. Joint Doctrine ......................................... 16
   C. Joint Training Standards .............................. 17
   D. Joint Targeting School Documents .................. 18
   E. Summary ............................................... 19
III. METHODS AND PROCEDURES

A. Population ...................................... 21
B. Instrument Design ................................. 21
C. Methods for Collecting Data ...................... 22
D. Statistical Analysis ............................... 22
E. Summary ........................................... 23

IV. FINDINGS

A. Curriculum Changes ............................... 24
B. Student Performance ............................... 25
C. Student Throughput ............................... 27
D. Summary ........................................... 31

V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

A. Summary .......................................... 32
B. Conclusions ....................................... 34
C. Recommendations ................................. 37

BIBLIOGRAPHY ....................................... 39

APPENDIX A, JTS Class Averages by Fiscal Year ...... 41

APPENDIX B, Students' Attendance Records by Fiscal Year 43
TABLE OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1</td>
<td>Six Step Joint Targeting Cycle</td>
<td>5</td>
</tr>
<tr>
<td>Figure 2</td>
<td>Class GPA for FY '96 - FY '99</td>
<td>26</td>
</tr>
<tr>
<td>Figure 3</td>
<td>Class GPA for FY '00 - FY '01</td>
<td>27</td>
</tr>
<tr>
<td>Figure 4</td>
<td>Attendance by Service per FY</td>
<td>28</td>
</tr>
<tr>
<td>Figure 5</td>
<td>Comparison of Student Throughput</td>
<td>29</td>
</tr>
<tr>
<td>Figure 6</td>
<td>Student Level of Accomplishment FY '00</td>
<td>30</td>
</tr>
<tr>
<td>Figure 7</td>
<td>Student Level of Accomplishment FY '01</td>
<td>30</td>
</tr>
</tbody>
</table>
CHAPTER I

INTRODUCTION

Operation Desert Storm revealed serious shortfalls in joint targeting strategies, interoperability, and standardization between the various agencies and services under the Department of Defense (DoD). This highlighted the fact that targeting expertise remains essential to efficient and effective employment of national power. A successful military operation requires the effective use of intelligence and operations personnel who have been trained and experienced in the targeting process in order to achieve the commander's objectives. In September 1992 the Senate encouraged the heads of the military services, the Secretary of Defense, the Director of the Defense Intelligence Agency (DIA), and the Chairman of the Joint Chiefs of Staff (CJCS) to support the development of a Joint Targeting Training Program (JTTP) (MOA, 1995, p. 2). Over the next few years a team of military and civilian personnel from national intelligence agencies and military services designed a targeting curriculum reflecting Unified Command inputs. In November 1995 the Joint Targeting School (JTS) opened its doors to its first students.

The Joint Targeting School, a one of a kind school, experienced the growing pains that are commonplace in unique
organizations not having similar institutions on which to compare and contrast. There are service specific academic courses; however, none are designed to produce targeting professionals with an understanding of the process across all services and DoD spectrum.

Thirty-eight percent of the curriculum was redesigned following the first iteration of the course. This was due in part to the evolving nature of joint military doctrine on targeting. As this doctrine continues to evolve and mature, the JTS must continue to adjust its curriculum to stay current. A training requirements review (TRR) was conducted in October of 1998. The objective of this review was to increase student throughput, evaluate training effectiveness, and review JTS manning efficiency. Student throughput during the first four years of the school’s operation was far below the 324 quotas requested during the draft of a memorandum of agreement (MOA) between all military services. Military Commands today are under strict guidance to maximize manning efficiency with dwindling budgets, personnel, and equipment. To put it simply, they are forced to do more with less. The TRR executive committee was made up of representatives from all military services and unified commands. The TRR validated the increased demand for personnel trained in joint targeting, the military services and Unified Commands failure to fill
requested quotas, and the desire of the training leadership of Joint Forces Command to maximize personnel efficiency. The result was a curriculum restructured from the single five-week course to two courses, a three-week Joint Targeting Staff course (JTSC) and a two-week Joint Targeting Applications course (JTAC).

**Statement of the Problem**

The problem of this study was to assess and compare the effectiveness of the Joint Targeting School (JTS) in meeting the requirements of preparing mid-career officers and enlisted men and women to function as targeting officers. The impetus for this study was the restructure of the JTS curriculum from a single five-week course into a three-week JTSC followed by a two-week JTAC.

**Research Goals**

The following questions were established to guide this study:

1. What changes were made to the five-week curriculum in splitting the course into a three-week staff course and a two-week applications course?
2. What effect did changing the curriculum have on student performance?

3. Did changing the curriculum improve student throughput?

4. What impact did dividing the course into two courses have on the number of students receiving congressionally mandated required skills including: “a common knowledge base regarding the current joint targeting terms, tactics, techniques, and procedures” as specified in the MOA?

**Background and Significance**

The JTS was designed as a five-week graduate level course tasked to provide the DoD with its first formal joint targeting training. The target audience for the course was mid-career officers and enlisted men and women destined for either:

1) Joint targeting positions at the Unified Commands, the Joint Staff, and Defense agencies.

2) Service-designated targeting positions which could be expected to be involved in joint targeting operations in times of crisis.
The JTS was also designed to ensure that DoD operations and intelligence targeting personnel who were either currently manning or en route to designated targeting positions had a common knowledge base regarding the current joint targeting terms, tactics, techniques, and procedures (MOA, 1995, p.2).

The course consisted of approximately 200 hours of classroom instruction that included sixty hours of laboratory and practical exercises. The six-step model for the Joint Targeting Cycle was chosen as the basis for delivery of the course. The model consisted of the following steps: Objectives and Guidance, Target Development, Weaponeering, Force Application, Force Execution, and Combat Development (Figure 1).
The course began with classes designed to establish a common foundation on which to build a thorough understanding of the joint targeting process. Students were introduced to "joint" military terminology, an overview of the origins of doctrine and strategy, and its formulation and promulgation. The structure and relationships between the chain of command from the national level down to and including the service or functional components that make up a typical joint task force (JTF) were also introduced. The various intelligence organizations and their functions and procedures for ensuring timely and effective delivery of products typically required by a JTF were presented to the students. Students then learned fundamental principles of joint operations including deliberate and crisis action planning, integration of various forces, and execution of the campaign plan. A class on Objectives and Guidance tied the previously learned planning processes with the targeting process. This first week enabled the target audience for the course consisting of individuals from all services of various knowledge backgrounds and experience levels to establish a common base on which to build the rest of the course.

Following this foundation work, Target Development was introduced. This included Target Systems Analysis, or the study of targets, their characteristics, and their relationships within a system, based on general systems
theory. The impact of the Law of Armed Conflict (LOAC), Rules of Engagement (ROE), the commander's "revised" objectives, and current intelligence were discussed in Target Validation. Effective documentation, presentation, and justification techniques were discussed empowering students with the knowledge and confidence to select and defend target selection based on a JTF commander's objectives. These concepts were further reinforced through an eight-hour practical exercise in which the students, given JTF Commander’s objectives, prepared targeting objectives briefs. Then the targeting objectives briefs where further developed into a prioritized target list and a target systems analysis brief.

The next phase of training was Ground Component Targeting considerations and procedures. This block included methods for coordination, synchronization, and deconfliction of Army and Marine forces deployed on enemy terrain. Twenty-five hours of instruction culminated with an eight hour practical exercise in which students performed analytical processes within a given scenario incorporating joint planning techniques with the knowledge gained in the Objectives and Guidance and Target Development blocks of instruction.

This ground phase was followed by an extensive air component phase in which students learned the remaining
steps of the targeting cycle including an in depth look at the weaponeering processes and methodologies, Force Application, Force Execution, as well as the final step of the targeting cycle, Combat Assessment. Although these steps emphasized the use of lethal fires, a class was also presented on non-lethal fires. Emphasis was placed throughout the course on the fact that targeting by definition includes all forms of influence on an enemy's ability to wage war (JP 1-02). Throughout the course students were evaluated by their performance on ten examinations and during practical exercises.

During the TRR it was determined that the course should be split into two courses in order to increase student throughput, increase instructor efficiency, and improve student understanding of course material. The in depth Weaponeering methodologies block was removed from the original five week course and along with some additional specialized classes became the two week Joint Targeting Applications Course (JTAC). This course focused on the application of the Weaponeering step of the aforementioned Joint Targeting Cycle and was designed to provide a detailed background in weapons employment considerations and weaponeering methodologies (JTAC Syllabus ’99). The remainder of the five-week course became the Joint Targeting Staff course (JTSC). The focus of the JTSC was on the
application of the six-step Joint Targeting Cycle at the operational level of war.

Both courses were offered seven times per year with the JTAC following the JTSC. This permitted students desiring the complete targeting training outlined in the MOA to stay on the additional two weeks following the JTSC to attend the JTAC. JTSC however, is not a prerequisite to attend JTAC. Offering the courses seven times per year optimized scheduling and budgeting opportunities for potential students and their commands.

Student evaluation data, attendance quotas, as well as the curriculums following the restructure were compared to like data collected from the first four years of the schools operation. Through careful investigation and comparison of data collected the impact of altering the curriculum of the JTS on student throughput and performance was evaluated.

Limitations

This study’s findings are limited in application to the JTS and should not be broadly generalized. The data were restricted to the comparison of student performance and attendance prior to restructuring of the curriculum to those following the changes including:
1. A population limited to 301 students prior to TRR change implementation and 338 students since the change.

2. Measurement of a graduates performance was limited to performance on examinations and practical exercises.

3. Staff functionality did not change following restructure of curriculum.

Assumptions

It was assumed in this study that:

1. The DoD requires 324 trained targeting personnel each year as requested during draft of MOA.

2. The examinations and practical exercises accurately measure a student’s knowledge transfer due to JTS training environment.

3. The examinations and practical exercises given since restructuring of the JTS test the same skills
at the same level as those prior to the restructure.

4. No factors other than the restructure impacted student throughput.

**Procedures**

The author, while assigned to the JTS, collected data for this study. Additional data was made available by the JTS administration department following his departure. The data was analyzed and compared with regard to impact of the changes in curriculum on student throughput, student training level, and student performance.

**Definition of Terms**

The following terms have special meaning to this study and are listed below to ensure reader understanding.

1. Joint Force - A force which is composed of significant elements, assigned or attached, of two or more Military Departments, operating under a single Joint Force Commander (Joint Pub 1-02).
2. Joint Force Commander - A general term applied to a combatant commander, sub-unified commander, or joint task force commander authorized to exercise combatant command (command authority) or operational control over a joint force (Joint Pub 1-02).

3. Joint Staff - As provided for in the National Security Act of 1947, and amended by the Goldwater-Nichols DoD Reorganization Act of 1986, the Joint Staff assists the chairman with contingency plans; advises the President and Secretary of Defense (SECDEF) on DoD requirements, programs, and budgets.

4. Mid-career - Active duty or DoD civilian personnel between the responsibility levels of E-6 (of 9) and O-5 (of 10) excluding O-1 and O-2.

5. Targeting - The analysis of enemy situations relative to the commander's mission objectives and capabilities, to identify and nominate specific vulnerabilities that if exploited will accomplish the commander's purpose through delaying, disrupting, or destroying enemy forces or resources critical to the enemy (JP 1-02).
Overview of Chapters

Chapter I provided the foundation for this study and introduced the reader to the problem. It also provided a framework for assessing the impact of changing the JTS’s curriculum.

The following chapters present valuable information to the completion of this study and make recommendations for future modifications to the JTS curriculum. Chapter II contains a review of supporting literature and publications pertinent to the completion of this study. Chapter III identifies the methods and procedures used to conduct this research. Chapter IV states the findings from the data collected. Lastly, Chapter V summarizes the research and states the conclusions and recommendations for the Joint Targeting School.
CHAPTER II

REVIEW OF LITERATURE

As the military continues to reduce the number of available assets, it becomes more and more important to consolidate facilities without regard for branch of service. This includes the training environment. This "joint" environment requires a set of training standards that transcend each military service's own training program standards. The purpose of this chapter was to review existing literature relevant to adult education, Joint Targeting, joint training programs, and their relationship to the curriculum of the Joint Targeting School. This was done to assess the effectiveness of the curriculum in fulfilling its mission. Information on adult education and training, Joint Military Doctrine, and Joint training standards was reviewed. Additionally, background information on curriculum development theories and teaching and learning styles and strategies provided excellent data points from which to measure the impact of JTS curriculum changes.
Adult Education

Adult learners require a much different learning environment than that typically found in a military classroom. One aspect of the research was on the environment for learning. JTS students are adults varying in age and experience. They each bring significant value to the course by sharing their experiences. Educational administration has been slow to recognize the importance of teachers possessing the training in or more importantly teachers who practice the andragogical theory of facilitating a classroom (Knowles, 1980, p. 37). This is especially true in military training. The typical classroom "lecturer" tends to transmit information to students in a predominately one-way "lecture." The majority of the JTS instructors still "teach" this way. Instructors should be trained and should possess the abilities of a facilitator and become more of a resource in a self-directed learning process and therefore more conducive to adult learning (Knowles, 1980, p. 34).

The physical and psychological environments both make up the climate of a learning activity. This climate includes such factors as previous reputation, location, and appearance of the facility (Knowles, 1980, pp, 138-152). A good physical climate can be established by ensuring
comfortable furniture arranged to inspire interaction, an environment comfortable to all the senses, and enough space appropriate to the number of participants. A good psychological environment is created by ensuring all participants perceive a spirit of mutual respect amongst themselves and the instructors, by being supportive and caring and friendly, by being collaborative rather than competitive, by building mutual trust and responsibility, and by emphasizing learning and not teaching. The tone for the entire course is set within the first hour and therefore this climate must be established immediately and nurtured throughout the course (Merriam, 1991, p. 22).

Joint Doctrine

Virtually all military operations from now on will be joint in nature, requiring the participation of at least two service departments. Targeting therefore must be taught to a joint audience since the process requires a knowledge base of joint doctrine and planning, including target development, target systems analysis, weaponeering, force execution, and combat assessment. Joint doctrine is currently evolving on the subject of targeting. Joint Pub 2-01.1, Joint Tactics, Techniques, and Procedures for Intelligence Support to Targeting, currently in final
coordination draft form and Joint Pub 3-60, *Doctrine for Joint Targeting* currently in development, were major sources for this research and for the JTS curriculum. As doctrine evolves, the Joint Targeting School is challenged with keeping abreast of changes and ensuring the most current and accurate data is being taught. A large portion of the instruction and doctrine for targeting has evolved from individual service doctrine.

**Joint Training Standards**

The joint standard for curriculum development is a systematic approach, providing tailorable requirements and task descriptions for acquisition of military training programs (MIL-STD-1379D). Otherwise known as the Instructional Systems Design (ISD) Model, it integrates the processes of analysis, design, development, implementation, and evaluation. Each step is described in detail throughout the publication. For example, the design process includes the contractor-military relationship and responsibilities, program management, quality assurance, and program material development. Each of these categories is then further subdivided into Task Sections (MIL-STD-1379D). Task 402 covers evaluation of training and as such was a significant resource for this study. The purpose of this section is to
conduct validation of training materials and evaluations of training effectiveness. Output of this process included the Training Evaluation and Validation Report, Training Material Change Package, and the test items validation results data.

**Joint Targeting School Documents**

The JTS received its mission via a congressional order and specifically through a Memorandum of Agreement (MOA) signed by all four military services in 1994. This MOA tasked the JTS with providing a graduate level course of instruction to mid-career intelligence and operations personnel of the military services and DoD civilians. This training was to ensure trainees being assigned to designated joint and service targeting positions received a common knowledge base regarding current joint targeting terms, tactics, techniques, and procedures (MOA '94). The expected number of trainees per year was also called for in the MOA and agreed upon by the services and Unified Commands. That number was established at 240, eight classes of 30 students per year (MOA '94). The services and commands originally requested 324 quotas annually (JTS quota matrix). The class length of five weeks initially was the limiting factor for number of available quotas. Courses were then overlapped freeing up time during the year for additional tasking
(e.g., mobile training teams), instructor training, and classroom presentation updates. The student throughput during the first four years was well below these levels. It was assessed that this low training throughput was "attributable to a lack of balanced proponency for joint targeting training between intelligence and operations components" of the various staffs who assign students to the JTS (TRR after action notes).

Following a TRR in October 1998, major changes were implemented with the goal of increasing student throughput and ensure training efficiency. The course was divided into two courses, a three-week JTSC and a two-week JTAC. The JTSC provided mid-career DoD operations and intelligence personnel with formal joint operational level targeting training (JTS syllabus '99). The JTAC provided detailed background in weapons employment considerations and weaponeering methods aimed at the same audience as the JTSC.

**Summary**

This research looked into the effectiveness and impact of changing the JTS curriculum as compared with adult education and learning styles, joint doctrine and strategies, and joint standards of curriculum development. Additionally, documentation specific to JTS curriculum, attendance, and student performance prior to and following
implementation of TRR recommendations was analyzed and compared. The research is aimed at determining the effect of the implemented changes on the curriculum, student performance, and throughput.
CHAPTER III

METHODS AND PROCEDURES

This chapter defines the population and data that make up this study. Methods and procedures utilized in collecting and analyzing the data are also described.

Population

The population used in this study was all graduates of the Joint Targeting School. The comparative analysis is based on 301 students graduating during the first four years of JTS operation and 338 in the two years since restructure of the curriculum.

Instrument Design

This study, a descriptive design, will illustrate the effects of the changes implemented following a TRR on the curriculum, student throughput, and the number of students receiving the MOA defined level of training by comparing data collected prior to implementation of changes to those data following change implementation.
Methods for Collecting Data

The author collected data for this study while a JTS staff member from October 1995 through December 1998. This process included maintaining a database of pertinent statistics for each student, each class, and for the JTS staff. Staff and student interviews also were incorporated into this study. Following the author's transfer from the JTS, data were obtained through and with the assistance of the Administration department. A summary of student attendance and performance can be found in Appendix A and B respectfully. Additionally, student interviews and course critiques were utilized to round out this study.

Comparative Analysis

The data collected during this study was compared and analyzed by the author. The data collected prior to implementation of curriculum changes was compared and analyzed against those data collected following change implementation. Analyses of the findings are illustrated in Chapter IV.
Summary

This chapter covered the methods and procedures utilized in gathering the data for this research study. Data collected prior to restructuring of the JTS was compared to the data following restructure and consisted of student performance and the number of students completing the training standards set down in the MOA. Chapter IV illustrates the findings in each of these criteria.
CHAPTER IV

FINDINGS

This chapter presents the findings of this study beginning with analysis of the changes made to the curriculum in dividing the five-week course into a three-week staff course and a two-week applications course. Next, the effect of restructuring the curriculum on student performance was established by comparing the data collected from both eras of JTS curricula. Finally, the impact on student throughput and level of training achieved based on requirements defined in the MOA following the implementation of TRR recommended changes was evaluated. Figures 2-7 illustrate the findings discussed throughout this chapter and are presented following their respective descriptions.

Curriculum Changes

Review of the literature pertinent to the JTS described the changes to the curriculum following the implementation of the TRR recommended changes. The overall impact of the changes was minimal. Specific classes remained intact with changes mostly to the amount of time and in depth detail
spent on each topic. The three-week JTSC trained students on the planning, staffing, and execution of the six-step joint targeting cycle. The two-week JTAC emphasized weapons employment considerations and weaponeering methodologies and was made up of the classes on this subject that were removed from the original five-week JTS course. Additionally, at least one class from week one and several others from week three of the five week course were taught in both the JTSC and the JTAC in order to ensure students not attending both courses would be introduced and understand certain concepts. The net positive effect of these changes was to make the course more appealing to those students and commands that were not able or willing to spend five weeks in training. This of course was at the expense of missing out on certain mandated skills depending on which course the student attended.

**Student Performance**

Students attending the JTS generally performed quite well with few exceptions. The typical student who struggled through the courses usually did not meet the mid-career criteria set down by the MOA. However, the JTS staff rarely let a seat go vacant if a student was interested in attending. Forty-seven students during the first four years
and fifty-eight since the curriculum restructure were too junior to meet the mid-career criteria. Only two students failed the JTS, one prior to restructuring and one after. The overall improvement when comparing the class averages prior to restructuring with those since was a notional 1.5 points (Figure 2 and 3).

![Class GPAs for FY 96 - FY 99](image)

**Figure 2**
Student Throughput

During the first four years of the JTS' operation only 301 students graduated despite the requirement from the various departments of the DoD for more than 240 graduates annually. The failure to meet these quotas was shared by all services. Figure 4 illustrates the annual number of quotas requested by each service and the actual numbers of students attending.
It should be pointed out that only two attendees to the JTS did not graduate ruling out attrition as a cause for the insufficient number of graduates. Attendance averaged approximately 30% of the available seats for each of the first four years.

Following the implementation of TRR recommended changes, the number of available seats increased by a factor of two to a total of 448. This was due to doubling the number of courses available from eight to sixteen. However, a student would have to attend both the JTSC and the JTAC in order to achieve the skills laid out in the MOA.
The number of students attending both the JTSC and the JTAC showed no significant increase over the numbers during the first four years (Figure 5). Attendance hovered around the 30 per cent range when compared to the number of seats available.

The goal of improving student throughput was marginally met if you consider the 134 students that only attended one of the courses (Figures 6 and 7).
**Figure 6**

**Student Level of Accomplishment FY '00**

**Figure 7**

**Student Level of Accomplishment FY '01**
Summary

The author's assessment and comparison of data revealed several discoveries. The curriculum, though divided into two separate courses, remained intact when compared to the original single five-week course. Students were presented the opportunity to achieve full qualification by attending two courses that could be taken at different times rather than during a single five-week period. Student performance stayed approximately constant with only a marginal 1.5 point increase in student averages. Moreover, the number of students attending the JTS also remained constant when compared to the number of seats available and the amount of administrative load when offering twice as many courses while maintaining a constant qualification standard.
CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to compare the curriculums found at the Joint Targeting School (JTS) from 1996 - 1999 to those found from 1999 through the present. The study set out to determine if restructuring the course into two separate courses would in fact improve student performance and throughput. To achieve this purpose the following research goals were investigated:

1. What changes were made to the five-week curriculum in splitting the course into a three-week staff course and a two-week applications course?

2. What effect did changing the curriculum have on student performance?

3. Did changing the curriculum improve student throughput?

4. What impact did dividing the course into two courses have on the number of students receiving congressionally mandated required skills including: "a common knowledge base regarding the current joint targeting terms,
tactics, techniques, and procedures” as specified in the MOA?

The administration department at the Joint Targeting School supplied the attendance records, performance data, along with providing access to required documentation for the conduct of this research.

The Joint Targeting School (JTS), established in 1995 to provide the Department of Defense (DoD) with its first “joint” level targeting school, experienced less than optimum participation throughout the first four years of operation. In 1999 following a training requirements review, the staff restructured the curriculum from the original five-week course into two courses: a three-week Joint Targeting Staff Course (JTSC) followed by a two-week Joint Targeting Applications Course (JTAC). This research was designed to evaluate the success of the JTS in achieving the goal of improving student throughput, understanding, and ability to meet the training requirements of the DoD. Pertinent literature on the topics of adult education, Joint military doctrine, Joint Training standards, and documents specific to the Joint Targeting School were reviewed and considered along with the data for statistical comparison and determination of results.
CONCLUSIONS

The following conclusions were based on the findings of this study and will be presented as answers to the research goals presented in chapter one. The first area of consideration was the changes to the curriculum in restructuring the course into a three-week JTSC and a two-week JTAC. The findings revealed that in splitting the course, the five-week curriculum remained intact. However, due to the fact that the JTSC was not a prerequisite for the JTAC, some duplication was injected for those students that did not attend both courses. For example, a class on Joint Targeting definitions and processes was taught in both courses in order to provide a common foundation on which to build the targeting applications course. While the JTSC maintained certain applications classes such as targeting considerations for weapons of mass destruction, weapons and fuses, and planning and weaponeering for the use of nuclear weapons. This repetition of classes created some redundancy for students attending both the JTSC and the JTAC. The remaining changes to the curriculum were in the amount of time spent on each topic. Some were increased for further emphasis and understanding, while others were decreased due to the availability of more in depth learning at courses offered on the subject, for example collection management. The net result of these changes was in the availability of
two separate courses allowing commands to send personnel through one at a time vice having to do without an individual for an inclusive five week period. Additionally, if a command only required expertise in targeting applications, they could send a student to the JTAC and not the JTSC. This resulted in more personnel attending courses, however, as will be illustrated later in this section it did not make a significant impact on the number of students achieving the congressional mandated level of targeting training set down in the MOA.

The next consideration of the research was the impact of these changes on student performance. The JTS already had good performance from the majority of students attending and very positive feedback from former students and their supervisors on student performance following graduation. Implementation of the curriculum changes made a minimal 1.5 point increase in class averages on performance tests and practical exercises. Only two students failed the JTS, one from the original five-week curriculum and one following the move to two separate courses. In both cases, the students did not meet the "mid-career" experience levels of the target audience of the curriculum. The relaxed admissions standards of the JTS allowed for the attendance of junior students (forty-seven from FY '96 - '99 and fifty-eight from
FY '00 -'01), most of which were able to achieve the graduation standards.

Student throughput was the next consideration of this research. The first aspect of throughput was in overall attendance. Then, armed with this knowledge, the question of the JTS's ability to meet the required number of 240 students per year graduating with those skills spelled out in the MOA. As the findings illustrated:

1) The Navy required 140 seats per year as a service and theater sponsor. However, only twenty per cent of these seats were filled during the first four years of JTS operation for a total of 109. And less than thirty-three per cent in the two years following restructure for a total of ninety-one.

2) The Army required seventy-five seats per year as a service and theater sponsor. However, only twenty-two per cent of these seats were filled during the first four years of JTS operation for a total of sixty-six. And fourteen per cent were filled following restructure for a total of twenty-one.
3) The Marine Corps required thirty-four seats per year as a service and theater sponsor. However, only twenty-four per cent of these seats were filled during the first four years of JTS operation for a total of thirty-three. And twenty nine per cent were filled following restructure for a total of thirty-one.

4) The Air Force required seventy-five seats per year as a service and theater sponsor. However, only twenty-six per cent of these seats were filled during the first four years of JTS operation for a total of seventy-nine. And twenty-two per cent were filled following restructure for a total of thirty-three.

Following the restructuring of the JTS the increase in the number of students completing both courses and achieving the level of training the JTS was mandated to provide was not statistically significant (eighty-four in FY '00 and 102 in FY '01). Students attending the JTSC or the JTAC numbered sixty during FY '00 and seventy-eight during FY '01, resulting in a minimal overall increase in student throughput when the administrative and cost burden is factored into offering twice as many courses.
RECOMMENDATIONS

The data collected for this research was obtained from the JTS. The author drew conclusions from the data and literature reviewed during the process of this research. It is recommended that further research and study redesign include design and implementation of an assessment examination at the beginning of each course followed by an exit examination. This would establish a more accurate measure of a students' targeting knowledge base upon entry to JTS, upon graduation, and therefore create a mechanism for quantifiable measure of student progress and understanding upon graduation. This could also be followed up at various time increments by a survey sent to graduates. The survey should solicit information such as how well the JTS prepared them for their jobs, recommended improvements to the curriculum, and areas the JTS should add emphasis or reduce coverage of material.

Student throughput should be improved by educating the highest levels of the chain of command on the importance of the knowledge gained by attending the JTS. This awareness can be accomplished by creating an executive level course aimed at flag officers that summarizes the concepts presented during the JTSC and JTAC. Also, Creating a formal
feedback mechanism for the JTS staff to hear from former students and their supervisors will raise this awareness. This will fill more seats at JTS by spreading the word about the school and keeping the positive influence of the training fresh on a decision maker's mind. Another mechanism, albeit uncontrollable, that always increases student throughput is the next "war." This always highlights the deficiency in the number of trained and skilled personnel in the art and science of joint level targeting. And that is, after all, the reason the school was created in the first place!
BIBLIOGRAPHY


Memorandum of Agreement between the military services establishing the Joint Targeting School, 1995.


Appendix A

JTS Class Averages by Fiscal Year

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<th>class #</th>
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Class Averages for FY '96 - '97

| AVG     | 92.0      | 98.3     | 80.6   |
| MODE    | 93.8      | 98.9     | #N/A   |
| MEDIAN  | 92.0      | 98.1     | 80.8   |
## Class Averages during FY '00-'01

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Class Averages for FY '00-'01
Appendix B

Students Attendance Records by Fiscal Year

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JTS Attendance Records for FY '96 - '99
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